



Second Quarter 2018

August 9, 2018 – 10:00 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. 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 years ended December 31, 2016 and 2015, 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.

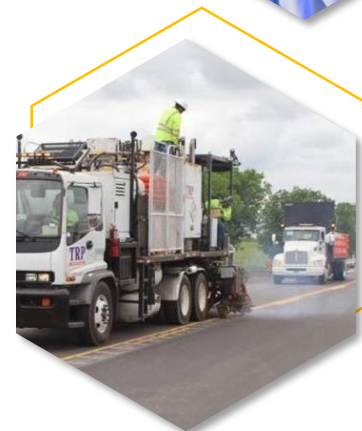
Zeolyst Joint Venture

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.

SOLID 2ND QUARTER DRIVES STRONG FIRST HALF RESULTS

Capturing growth trends and positioned for significant free cash flow

- Sales growth of 12% and Adjusted EBITDA of 5%, driven by underlying demand in nearly all our end markets
- Growth drivers in the second quarter included:
 - Robust hydrocracking
 - Double-digit polyolefins growth
 - Strong refining services volumes
 - ThermoDrop[®] adoption ramps up
- Expect continued growth and improving margin profile
- On track for strong free cash flow in 2H18; targeting reduction in leverage ratio of ~0.5x turn in second half of 2018



SECOND QUARTER 2018 FINANCIAL RESULTS

Growth from performance materials, performance chemicals and Zeolyst JV

| (\$ in millions) | Second Quarter 2018 | Second Quarter 2017 | % Change |
|-------------------------------------|---------------------|---------------------|-----------|
| Sales | 434.7 | 389.3 | 12% |
| Adjusted EBITDA | 128.9 | 122.8 | 5% |
| Adjusted EBITDA Margin ¹ | 26.6% | 29.2% | (260 bps) |

- Sales growth driven primarily by higher volumes from performance materials and performance chemicals
- Margin decline primarily from timing of maintenance costs including turnarounds (130 bps) and pass-through of higher raw material costs (70 bps)
- \$23 million YTD free cash flow improvement

| PQ Group Holdings Inc. | |
|------------------------|------|
| Sales: | % |
| Volume | 7.4 |
| Price/Mix | 3.1 |
| Currency | 1.2 |
| Sales Change | 11.7 |



ENVIRONMENTAL CATALYSTS & SERVICES PERFORMANCE HIGHLIGHTS

Growth in fuels & emission control catalysts

| (\$ in millions) | Second Quarter 2018 | Second Quarter 2017 | % Change |
|---|---------------------|---------------------|------------------|
| Sales | | | |
| PQ | 129.4 | 124.0 | 4% |
| Zeolyst JV | 49.5 | 30.7 | 61% |
| Adjusted EBITDA | 64.9 | 64.3 | 1% |
| Adjusted EBITDA Margin¹ | 36.3% | 41.6% | (530 bps) |

- Zeolyst JV growth from continued fuels & emission control catalyst demand
- Margins lower primarily on timing of maintenance costs including turnarounds (350 bps) and pass-through pricing of higher raw materials costs (140 bps)

| Environmental Catalysts & Services | |
|------------------------------------|------------|
| Sales: | % |
| Volume | (1.3) |
| Price/Mix | 5.5 |
| Currency | 0.2 |
| Sales Change | 4.4 |



PERFORMANCE MATERIALS & CHEMICALS PERFORMANCE HIGHLIGHTS

Growth from highway safety and industrial applications

| (\$ in millions) | Second Quarter 2018 | Second Quarter 2017 | % Change |
|------------------------|---------------------|---------------------|-----------|
| Sales | 306.2 | 266.1 | 15% |
| Adjusted EBITDA | 73.4 | 66.4 | 11% |
| Adjusted EBITDA Margin | 24.0% | 25.0% | (100 bps) |

- Growth driven by highway safety, including benefits from the Sovitec acquisition and ThermoDrop®, and higher sodium silicate industrial demand
- Margins lower on sales mix and pass-through pricing of higher costs

| Performance Materials & Chemicals | |
|-----------------------------------|------|
| Sales: | % |
| Volume | 11.5 |
| Price/Mix | 1.9 |
| Currency | 1.7 |
| Sales Change | 15.1 |



2018 GUIDANCE REAFFIRMED: SALES, ADJUSTED EBITDA, FREE CASH FLOW

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% |
| Free Cash Flow | (24.4) | 120 – 140 | ~145 – 165 |
| Interest Expense | 179.0 | 120 – 130 | (~50 – 60) |
| Depreciation & Amortization | | | |
| PQ | 177.1 | 185 – 190 | |
| Zeolyst JV | 11.1 | 12 - 14 | |
| Capital Expenditures | 140.5 | 150 – 155 | |
| Effective Tax Rate (ex tax reform) | NM | ~ 30% | |

- Free cash flow expected to be used largely for debt paydown
- 2H18 expected growth driven by refining, polyolefins, performance materials and performance chemicals; anticipated lower Zeolyst JV
- Margins expected to improve in 2H18 from 1H18



GROWTH DRIVERS FOR 2018 AND BEYOND

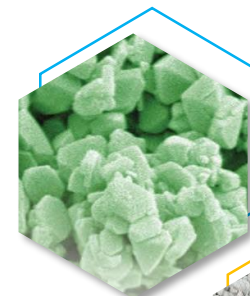
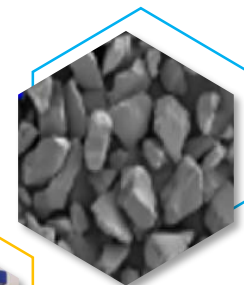
Product portfolio positioned to meet robust customer demand

Environmental Catalysts & Services (EC&S):

- **Regeneration services** – expanding sulfuric acid alkylation to meet higher octane demand
- **Silica catalysts** – growing global polyethylene demand for plastics
- **Fuel and emissions control catalysts** – expanding regulation for lower sulfur and NOx in transportation fuels

Performance Materials & Chemicals (PM&C):

- **Sodium silicates** – preference for environmentally friendly consumer and industrial applications
- **Highway safety beads and ThermoDrop®** – solutions for transportation safety



REFINING SERVICES – SUPPLY INFRASTRUCTURE

#1 U.S. Supplier

Regeneration Services business is the leading supplier with key competitive position in Gulf and California

43 Refineries using Sulfuric Acid Alkylation

> 65% of alky capacity located in West Coast and Gulf Coast regions



Deliveries by Shipping Mode

Dedicated pipeline system at 4 customers; managing complex logistics reliably with other modes of transport



★
BARGE
33%



●
TRUCK
27%



▲
RAIL
20%



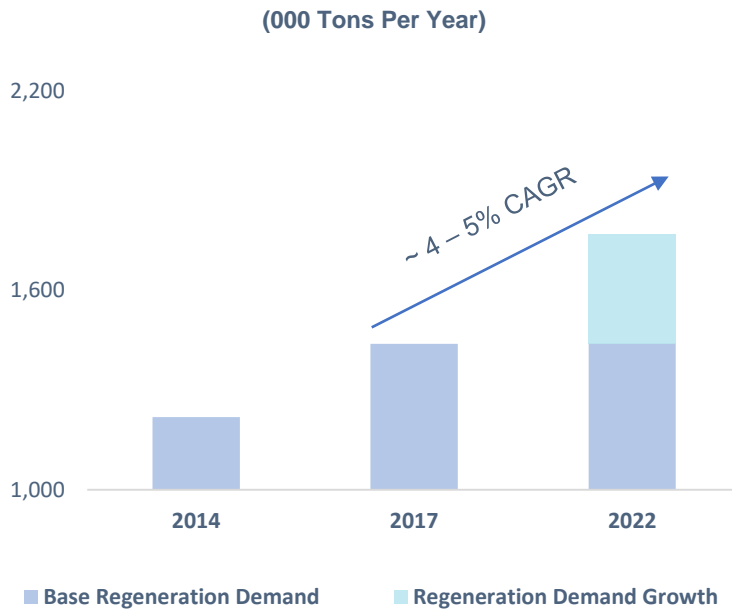
■
PIPELINE
20%

- 50 – 55% supplier of US regeneration demand
- ~95% of supply under 5 – 10 year take-or-pay contracts
- ~90% cost pass-through on quarterly basis

REFINING SERVICES GROWTH OUTLOOK

PQ best positioned to serve new capacity expansions in Gulf

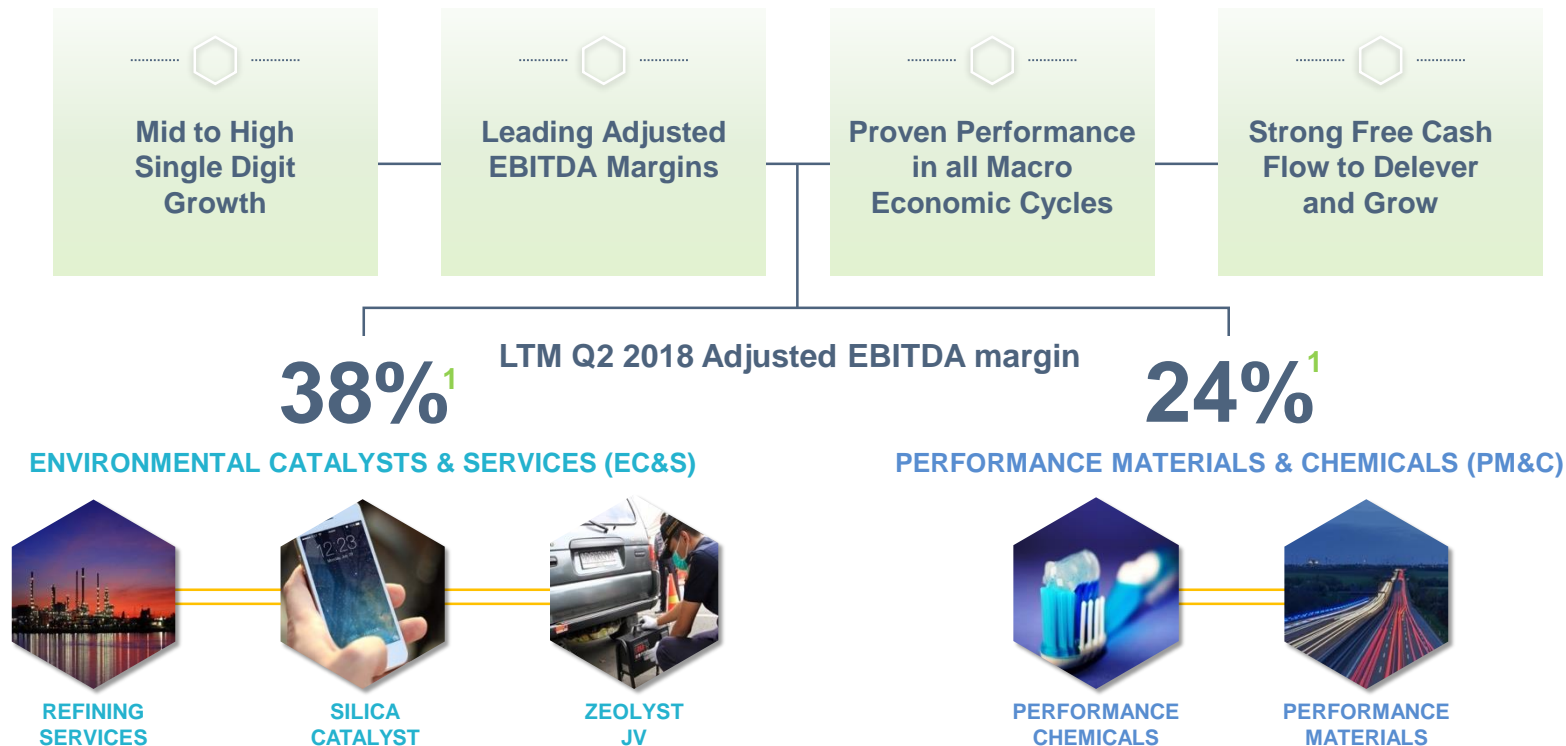
Gulf Coast Sulfuric Acid Regeneration Demand



- Planned alkylation expansions, all Gulf Coast, Sulfuric based
- Expansions driven by:
 - Growth in premium share of total gasoline pool (turbo charged engines)
 - Shale oil growth
 - Rising gasoline exports
- PQ debottlenecking expected to accelerate growth rate at high margins

PQ INVESTMENT HIGHLIGHTS

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



- #1 and #2 positions in nearly all product lines
- Input cost small as % of customer total product cost
- High margin environmentally friendly applications
- Track record of innovation

APPENDIX

SALES AND ADJUSTED EBITDA MAJOR CHANGE FACTORS

Second Quarter and YTD 2018

SALES

| Sales (in \$ millions and %) | Three Months Ended June 30, 2018 | | | | | | Six Months Ended June 30, 2018 | | | | | |
|---------------------------------|-------------------------------------|-------------|--|------------|---|-------------|-----------------------------------|-------------|--|------------|---|-------------|
| | PQ Group Holdings Inc. | | Environmental Catalysts & Services | | Performance Materials & Chemicals | | PQ Group Holdings Inc. | | Environmental Catalysts & Services | | Performance Materials & Chemicals | |
| Sales: | \$ | % | \$ | % | \$ | % | \$ | % | \$ | % | \$ | % |
| Volume | 28.9 | 7.4 | (1.6) | (1.3) | 30.6 | 11.5 | 38.0 | 5.2 | (2.8) | (1.2) | 40.7 | 8.3 |
| Price/Mix | 11.9 | 3.1 | 6.8 | 5.5 | 5.1 | 1.9 | 22.9 | 3.2 | 13.2 | 5.6 | 9.7 | 2.0 |
| Currency | 4.6 | 1.2 | 0.2 | 0.2 | 4.4 | 1.7 | 17.8 | 2.5 | 0.9 | 0.4 | 16.9 | 3.5 |
| Sales Change | 45.4 | 11.7 | 5.4 | 4.4 | 40.1 | 15.1 | 78.7 | 10.9 | 11.3 | 4.8 | 67.3 | 13.8 |

ADJUSTED EBITDA

| Adjusted EBITDA (in \$ millions and %) | Three Months Ended June 30, 2018 | | | | | | Six Months Ended June 30, 2018 | | | | | |
|---|-------------------------------------|------------|--|------------|---|-------------|-----------------------------------|------------|--|------------|---|------------|
| | PQ Group Holdings Inc. | | Environmental Catalysts & Services | | Performance Materials & Chemicals | | PQ Group Holdings Inc. | | Environmental Catalysts & Services | | Performance Materials & Chemicals | |
| Adjusted EBITDA: | \$ | % | \$ | % | \$ | % | \$ | % | \$ | % | \$ | % |
| Volume/Mix | 16.8 | 13.7 | 8.1 | 12.6 | 8.7 | 13.1 | 21.6 | 9.6 | 13.1 | 10.9 | 8.5 | 7.1 |
| Price | 12.0 | 9.8 | 6.8 | 10.6 | 5.1 | 7.7 | 22.9 | 10.2 | 13.2 | 10.9 | 9.7 | 8.2 |
| Variable Cost | (8.3) | (6.8) | (6.3) | (9.8) | (1.9) | (2.9) | (20.6) | (9.2) | (13.0) | (10.8) | (7.6) | (6.4) |
| Currency | 1.6 | 1.3 | 0.2 | 0.3 | 1.3 | 2.0 | 4.9 | 2.2 | 0.6 | 0.5 | 4.3 | 3.6 |
| Other | (16.0) | (13.0) | (8.2) | (12.8) | (6.2) | (9.4) | (16.0) | (7.1) | (11.3) | (9.3) | (3.3) | (2.7) |
| Adjusted EBITDA Change | 6.1 | 5.0 | 0.6 | 0.9 | 7.0 | 10.5 | 12.8 | 5.7 | 2.6 | 2.2 | 11.6 | 9.8 |

CASH FLOW

Improved ~\$23 million year-on-year

| (\$ in millions) | YTD Second Quarter 2018 | YTD Second Quarter 2017 |
|--|----------------------------------|----------------------------------|
| Cash Flow from Operations before interest and tax | 121.4 | 129.4 |
| Less: | | |
| Cash Paid for Taxes | 11.1 | 15.9 |
| Cash Paid for Interest | 60.2 | 91.7 |
| Cash Flow from Operations | 50.1 | 21.8 |
| Less: Capital Investments ¹ | 66.1 | 60.6 |
| Free Cash Flow | (16.0) | (38.8) |

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

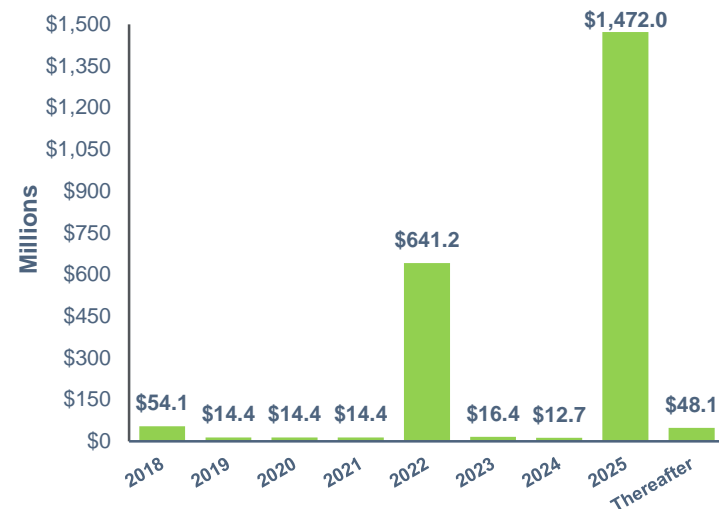


DEBT SCHEDULE

Flexibility to pay down debt; mitigated interest rate exposure

| Capitalization | Q2 2018 |
|---|-------------------------|
| Debt: | (\$ in millions) |
| ABL Revolving Credit Facility | 32.0 |
| New USD First Lien Term Loan | 1,260.7 |
| First Lien Secured Notes | 625.0 |
| Total First Lien Debt | 1,917.7 |
| Senior Unsecured Notes | 300.0 |
| Other debt | 70.0 |
| Total Debt | 2,287.7 |
| Cash | 52.6 |
| Net Debt | 2,235.1 |
| Net Debt/Adjusted EBITDA¹ | 4.8x |

DEBT MATURITY SCHEDULE

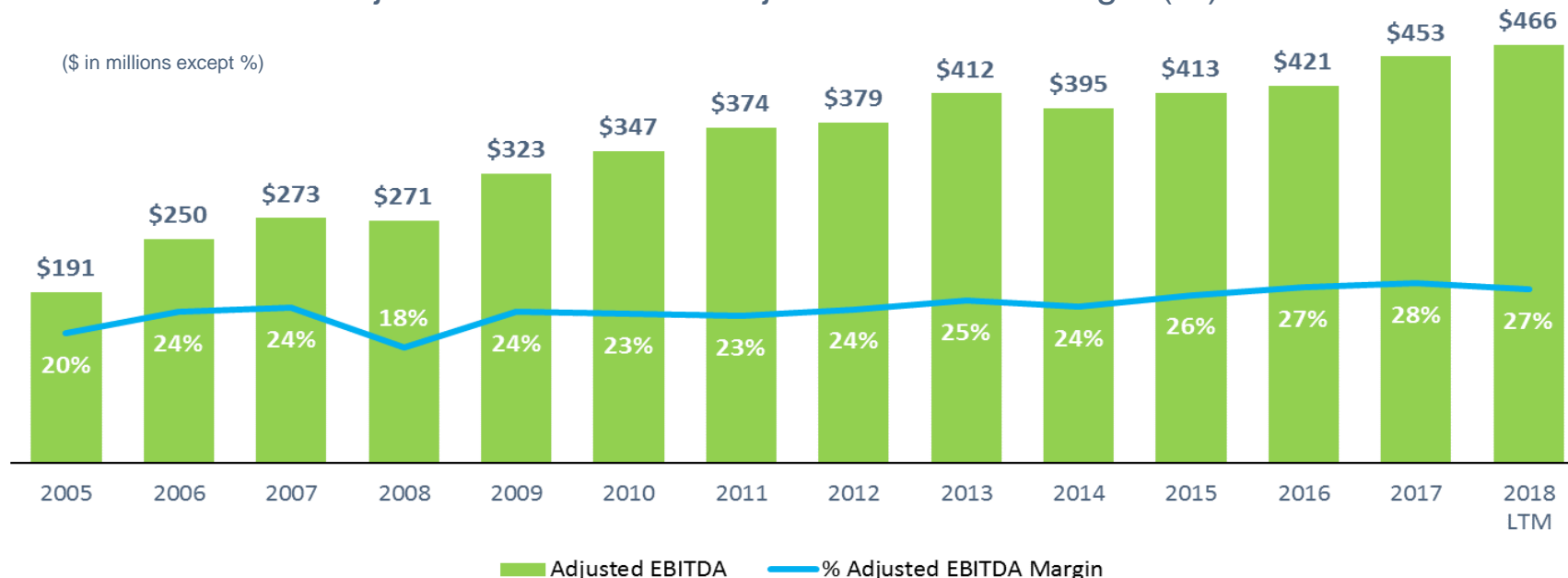


- \$1 billion (notional) interest rate cap limits effect of rising interest rates through 2020
- Weighted average cost of debt (including XCCY swap) of ~5%
- First lien term loan is fully pre-payable

DEMONSTRATED STRONG FINANCIAL PERFORMANCE ACROSS MACROECONOMIC CYCLES

Stable and improving margins

Adjusted EBITDA and Adjusted EBITDA Margin (%)^{1,2,3}



- Long-term EBITDA CAGR of ~ 7%
- 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 to give 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 Reconciliations included within this appendix 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 total net sales from Zeolyst joint venture

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

Q2 2018 and Year 2017

| (\$ in millions except per share data) | Three Months Ended March 31, 2018 | Three Months Ended June 30, 2018 | Six Months Ended June 30, 2018 | LTM Ended June 30, 2018 | March 31, 2017 | Three Months Ended June 30, 2017 | Three Months Ended September 30, 2017 | Three Months Ended December 31, 2017 | Year Ended December 31, 2017 |
|--|---|--|---|-------------------------------|-------------------|--|---|--|------------------------------------|
| Reconciliation of Sales to Adjusted Net Income (loss) | | | | | | | | | |
| Sales | 366.2 | 434.7 | 800.9 | 1,550.8 | 332.9 | 389.3 | 391.8 | 358.1 | 1,472.1 |
| Cost of goods sold | 288.1 | 326.3 | 614.4 | 1,177.7 | 250.2 | 281.8 | 289.3 | 274.0 | 1,095.3 |
| Gross Profit | 78.1 | 108.4 | 186.5 | 373.1 | 82.7 | 107.5 | 102.5 | 84.1 | 376.8 |
| Selling, general and administrative expenses | 40.6 | 43.5 | 84.1 | 160.8 | 34.7 | 35.3 | 36.4 | 40.3 | 146.7 |
| Other operating expense, net | 9.3 | 15.9 | 25.2 | 62.0 | 10.3 | 17.0 | 19.8 | 17.0 | 64.2 |
| Operating Income | 28.2 | 49.0 | 77.2 | 150.3 | 37.7 | 55.2 | 46.3 | 26.8 | 165.9 |
| Equity in net (income) from affiliated companies | (11.9) | (13.7) | (25.5) | (49.8) | (5.9) | (8.7) | (10.3) | (13.9) | (38.8) |
| Interest expense, net | 29.2 | 27.2 | 56.4 | 140.5 | 46.8 | 48.2 | 49.1 | 35.0 | 179.0 |
| Debt extinguishment costs | 5.9 | — | 5.9 | 67.8 | — | — | 0.5 | 61.4 | 61.9 |
| Other expense, net | 5.0 | 5.7 | 10.6 | 18.8 | 2.0 | 14.4 | 4.9 | 3.2 | 24.4 |
| Income (loss) before income taxes and non-controlling interest | — | 29.8 | 29.8 | (27.0) | (5.2) | 1.3 | 2.1 | (58.9) | (60.6) |
| (Benefit) provision for income taxes | (0.5) | 13.6 | 13.1 | (106.2) | (2.9) | 3.0 | 5.2 | (124.5) | (119.2) |
| Effective tax rate | NM | 45.8 % | 44.0 % | NM | 55.8 % | 224.9 % | 247.6 % | 211.4 % | 196.7 % |
| Net Income (loss) | 0.5 | 16.2 | 16.7 | 79.2 | (2.3) | (1.7) | (3.1) | 65.6 | 58.6 |
| Less: Net income (loss) attributable to the non-controlling interest | 0.3 | 0.4 | 0.7 | 1.6 | 0.2 | (0.1) | 0.3 | 0.6 | 1.0 |
| Net Income (loss) attributable to PQ Group Holdings, Inc. ¹ | 0.2 | 15.8 | 16.0 | 77.6 | (2.5) | (1.6) | (3.4) | 65.0 | 57.6 |
| Amortization of investments in affiliated step-up ^b | 1.2 | 1.0 | 2.2 | 5.7 | 2.1 | 0.9 | 1.0 | 2.5 | 6.5 |
| Amortization of inventory step-up ^c | 1.1 | 0.0 | 1.1 | 1.2 | 0.5 | 0.0 | 0.0 | 0.1 | 0.6 |
| Debt extinguishment costs | 4.1 | 0.0 | 4.1 | 50.5 | 0.0 | 0.0 | 0.3 | 46.1 | 46.4 |
| Net loss on asset disposal ^d | 0.8 | 3.1 | 3.9 | 6.2 | 0.2 | 1.4 | 2.1 | 0.2 | 3.9 |
| Foreign currency exchange loss ^e | 2.9 | 5.2 | 8.1 | 14.5 | 0.2 | 9.5 | 5.2 | 1.2 | 16.1 |
| Non-cash revaluation of inventory, including LIFO | 3.4 | 0.0 | 3.4 | 4.8 | 1.4 | 0.0 | 0.5 | 0.9 | 2.8 |
| Management advisory fees ^f | 0.0 | 0.0 | 0.0 | 1.4 | 0.7 | 0.7 | 0.8 | 0.6 | 2.8 |
| Transaction and other related costs ^g | 0.3 | 0.2 | 0.5 | 3.6 | 0.8 | 1.7 | 0.6 | 2.5 | 5.6 |
| Equity-based and other non-cash compensation | 2.6 | 2.5 | 5.1 | 10.2 | 0.9 | 0.6 | 0.7 | 4.4 | 6.6 |
| Restructuring, integration and business optimization expenses ^h | 0.7 | 1.6 | 2.3 | 8.2 | 1.0 | 0.7 | 2.9 | 3.0 | 7.6 |
| Defined benefit pension plan cost ⁱ | 0.4 | (0.3) | 0.1 | 1.3 | 0.4 | 0.4 | 0.5 | 0.7 | 2.0 |
| Other ^j | 0.7 | 2.0 | 2.7 | 7.4 | 0.3 | 1.0 | 0.0 | 4.7 | 5.9 |
| Adjusted net income, including tax reform and non-cash GILTI tax | 18.4 | 31.1 | 49.5 | 192.6 | 6.0 | 15.3 | 11.2 | 131.9 | 164.4 |
| Impact of tax reform ² | — | 1.1 | 1.1 | (105.4) | — | — | — | (106.5) | (106.5) |
| Impact of non-cash GILTI tax ³ | 2.5 | 5.0 | 7.5 | 7.5 | — | — | — | — | — |
| Adjusted net income | 20.9 | 37.2 | 58.1 | 94.7 | 6.0 | 15.3 | 11.2 | 25.4 | 57.9 |
| Diluted net income (loss) per share: | 0.00 | 0.12 | 0.12 | NM | (0.02) | (0.02) | (0.03) | 0.49 | 0.52 |
| Adjusted diluted net income per share: | 0.16 | 0.28 | 0.43 | NM | 0.06 | 0.15 | 0.11 | 0.19 | 0.52 |
| Diluted Weighted Average shares outstanding | 133.9 | 134.2 | 134.0 | NM | 103.9 | 104.0 | 104.1 | 133.9 | 111.7 |

(1) For additional information with respect to each adjustment, see "Reconciliations of Non-GAAP Financial Measures" within this appendix.

(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 | | Six Months Ended | LTM Ended | Three Months Ended | | | | Year Ended |
|--|--------------------|------------------|------------------|------------------|--------------------|------------------|--------------------------|----------------------|----------------------|
| | March 31, 2018 | June 30, 2018 | June 30, 2018 | June 30, 2018 | March 31, 2017 | June 30, 2017 | September 30, 2017 | December 31, 2017 | December 31, 2017 |
| Reconciliation of net income (loss) attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA | | | | | | | | | |
| Net income (loss) attributable to PQ Group Holdings Inc. | 0.2 | 15.8 | 16.0 | 77.6 | (2.5) | (1.6) | (3.4) | 65.0 | 57.6 |
| Provision for (benefit from) income taxes | (0.5) | 13.6 | 13.1 | (106.2) | (2.9) | 3.0 | 5.2 | (124.5) | (119.2) |
| Interest expense | 29.2 | 27.2 | 56.4 | 140.5 | 46.8 | 48.2 | 49.1 | 35.0 | 179.0 |
| Depreciation and amortization | 48.5 | 47.0 | 95.5 | 189.4 | 40.6 | 42.6 | 45.9 | 48.0 | 177.1 |
| EBITDA | 77.4 | 103.6 | 181.0 | 301.3 | 82.0 | 92.2 | 96.8 | 23.5 | 294.5 |
| Joint venture depreciation, amortization and interest ^a | 3.3 | 2.6 | 5.9 | 11.5 | 2.6 | 2.9 | 2.6 | 3.0 | 11.1 |
| Amortization of investment in affiliate step-up ^b | 1.7 | 1.7 | 3.3 | 6.8 | 3.5 | 1.7 | 1.7 | 1.7 | 8.6 |
| Amortization of inventory step-up ^c | 1.6 | 0.0 | 1.6 | 1.6 | 0.9 | — | — | — | 0.9 |
| Debt extinguishment costs | 5.9 | 0.0 | 5.9 | 67.8 | — | — | 0.5 | 61.4 | 61.9 |
| Net loss on asset disposals ^d | 1.2 | 4.8 | 5.9 | 8.9 | 0.3 | 2.6 | 3.5 | (0.6) | 5.8 |
| Foreign currency exchange loss ^e | 5.1 | 6.8 | 11.8 | 21.4 | 2.0 | 14.4 | 5.3 | 4.2 | 25.8 |
| Non-cash revaluation of inventory, including LIFO | 4.9 | 0.1 | 5.0 | 6.3 | 2.4 | — | 0.8 | 0.5 | 3.7 |
| Management advisory fees ^f | — | — | — | 1.3 | 1.3 | 1.3 | 1.3 | — | 3.8 |
| Transaction related costs ^g | 0.4 | 0.3 | 0.7 | 3.8 | 1.4 | 3.0 | 1.0 | 2.1 | 7.4 |
| Equity-based and other non-cash compensation | 3.8 | 3.8 | 7.6 | 13.5 | 1.7 | 1.2 | 1.0 | 4.9 | 8.8 |
| Restructuring, integration and business optimization expenses ^h | 1.1 | 2.4 | 3.5 | 13.7 | 1.7 | 1.4 | 5.0 | 5.2 | 13.2 |
| Defined benefit plan pension cost ⁱ | 0.6 | (0.4) | 0.1 | 1.7 | 0.7 | 0.7 | 0.8 | 0.7 | 2.9 |
| Other ^j | 0.9 | 3.2 | 4.5 | 6.5 | 0.7 | 1.4 | (0.4) | 2.8 | 4.9 |
| Adjusted EBITDA | 107.9 | 128.9 | 236.8 | 466.1 | 101.2 | 122.8 | 119.9 | 109.4 | 453.3 |
| Unallocated corporate costs | 7.7 | 9.4 | 17.0 | 32.0 | 7.7 | 7.9 | 7.9 | 7.0 | 30.5 |
| Total Segment Adjusted EBITDA | 115.6 | 138.3 | 253.8 | 498.1 | 108.9 | 130.7 | 127.8 | 116.4 | 483.8 |
| EBITDA Adjustments by Line Item | | | | | | | | | |
| EBITDA | 77.4 | 103.6 | 181.0 | 301.3 | 82.0 | 92.2 | 96.8 | 23.5 | 294.5 |
| Cost of goods sold | 7.3 | 2.6 | 9.9 | 13.1 | 4.0 | 0.7 | 2.2 | 1.0 | 7.9 |
| Selling, general and administrative expenses | 4.9 | 4.8 | 9.7 | 18.6 | 2.3 | 2.1 | 2.1 | 6.8 | 13.2 |
| Other operating expense, net | 2.4 | 7.2 | 9.6 | 27.4 | 4.7 | 9.0 | 9.1 | 8.7 | 31.5 |
| Equity in net (income) loss from affiliated companies | 1.7 | 1.7 | 3.3 | 6.8 | 3.5 | 1.7 | 1.7 | 1.7 | 8.6 |
| Other expense (income), net ¹ | 10.9 | 6.4 | 17.4 | 87.4 | 2.1 | 14.2 | 5.4 | 64.7 | 86.5 |
| Joint venture depreciation, amortization and interest(a) | 3.3 | 2.6 | 5.9 | 11.5 | 2.6 | 2.9 | 2.6 | 3.0 | 11.1 |
| Adjusted EBITDA | 107.9 | 128.9 | 236.8 | 466.1 | 101.2 | 122.8 | 119.9 | 109.4 | 453.3 |

RECONCILIATION OF NON-GAAP FINANCIAL MEASURES

Descriptions to PQ Non-GAAP Reconciliations

Descriptions to PQ Non-GAAP Reconciliations

- a) We use Adjusted EBITDA 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, including customer relationships and technical know-how.
- c) As a result of the Sovitec acquisition and the 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 (which was settled as part of the February 2018 term loan refinancing) 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 closing of our initial public offering.
- g) Relates to certain transaction costs described in our condensed consolidated financial statements 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 which are incremental costs that are not representative of our ongoing business operations.
- i) Represents adjustments for defined benefit pension plan costs in our statement of operations. 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, 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).

QUARTERLY SEGMENT SALES AND ADJUSTED EBITDA

Year 2017 and Q2 2018

| (\$ in millions except %) | Three Months Ended | | Six months Ended | LTM Ended | Three Months Ended | | | | Year Ended |
|--|--------------------|---------------|------------------|----------------|--------------------|---------------|--------------------|-------------------|-------------------|
| | March 31, 2018 | June 30, 2018 | June 30, 2018 | June 30, 2018 | March 31, 2017 | June 30, 2017 | September 30, 2017 | December 31, 2017 | December 31, 2017 |
| Sales: | | | | | | | | | |
| Silica Catalysts | 16.5 | 17.3 | 33.8 | 71.9 | 17.1 | 20.1 | 15.1 | 23.0 | 75.3 |
| Refining Services | 100.7 | 112.1 | 212.8 | 413.1 | 94.2 | 103.9 | 100.4 | 99.9 | 398.4 |
| Environmental Catalysts & Services | 117.2 | 129.4 | 246.6 | 485.0 | 111.3 | 124.0 | 115.5 | 122.9 | 473.7 |
| Performance Materials | 62.7 | 126.5 | 189.3 | 360.1 | 53.8 | 99.5 | 104.4 | 66.5 | 324.2 |
| Performance Chemicals | 190.0 | 183.8 | 373.7 | 721.4 | 170.9 | 169.0 | 175.5 | 172.1 | 687.6 |
| Eliminations | (2.9) | (4.1) | (7.0) | (12.5) | (2.1) | (2.4) | (2.8) | (2.7) | (10.0) |
| Performance Materials & Chemicals | 249.8 | 306.2 | 556.0 | 1,069.0 | 222.6 | 266.1 | 277.1 | 235.9 | 1,001.8 |
| Inter-segment sales eliminations | (0.8) | (0.9) | (1.7) | (3.2) | (1.0) | (0.8) | (0.8) | (0.7) | (3.4) |
| Total sales | 366.2 | 434.7 | 800.9 | 1,550.8 | 332.9 | 389.3 | 391.8 | 358.1 | 1,472.1 |
| Zeolyst joint venture net sales | 38.3 | 49.5 | 87.9 | 168.2 | 32.7 | 30.7 | 37.6 | 42.8 | 143.8 |
| Adjusted EBITDA: | | | | | | | | | |
| Environmental Catalysts & Services | 58.4 | 64.9 | 123.3 | 246.2 | 56.4 | 64.3 | 61.9 | 61.0 | 243.6 |
| Performance Materials & Chemicals | 57.2 | 73.4 | 130.5 | 251.9 | 52.5 | 66.4 | 65.9 | 55.4 | 240.2 |
| Total Segment Adjusted EBITDA | 115.6 | 138.3 | 253.8 | 498.1 | 108.9 | 130.7 | 127.8 | 116.4 | 483.8 |
| Corporate | (7.7) | (9.4) | (17.0) | (32.0) | (7.7) | (7.9) | (7.9) | (7.0) | (30.5) |
| Total Adjusted EBITDA | 107.9 | 128.9 | 236.8 | 466.1 | 101.2 | 122.8 | 119.9 | 109.4 | 453.3 |
| Zeolyst Joint Venture Adjusted EBITDA ¹ | 16.8 | 17.9 | 34.7 | 67.6 | 12.1 | 13.2 | 14.4 | 18.5 | 58.2 |
| Adjusted EBITDA Margin: | | | | | | | | | |
| Environmental Catalysts & Services ² | 37.6% | 36.3% | 36.9% | 37.7% | 39.2% | 41.6% | 40.4% | 36.8% | 39.4% |
| Performance Materials & Chemicals | 22.9% | 24.0% | 23.5% | 23.6% | 23.6% | 25.0% | 23.8% | 23.5% | 24.0% |
| Total Adjusted EBITDA Margin² | 26.7% | 26.6% | 26.6% | 27.1% | 27.7% | 29.2% | 27.9% | 27.3% | 28.1% |

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 ³ | 2016 Pro forma ³ | 2017 |
| Reconciliation of sales and adjusted EBITDA | | | | | | | | | | | | | |
| Legacy PQ Sales ¹ | 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 ^{2,5} | 260.2 | 288.7 | 289.4 | 449.4 | 293.9 | 331.0 | 415.4 | 410.4 | 390.8 | 397.4 | | | |
| Total Legacy Sales | 895.5 | 997.3 | 1,064.4 | 1,426.4 | 1,303.8 | 1,418.9 | 1,530.4 | 1,495.2 | 1,475.8 | 1,512.3 | 1,413.2 | 1,403.0 | 1,472.1 |
| Zeolyst Joint Venture total net sales | 45.6 | 60.4 | 63.8 | 69.4 | 63.2 | 69.9 | 99.0 | 87.3 | 148.5 | 106.7 | 159.8 | 131.3 | 143.8 |
| Legacy PQ Adjusted EBITDA ¹ | 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 ² | 71.5 | 99.0 | 96.0 | 106.4 | 97.5 | 93.6 | 99.8 | 110.8 | 105.5 | 107.2 | | | |
| Total Adjusted EBITDA | 191.1 | 250.2 | 273.3 | 270.7 | 322.9 | 347.4 | 374.4 | 379.5 | 412.3 | 395.3 | 413.1 | 420.7 | 453.3 |
| % Adjusted EBITDA Margin ⁴ | 20.3% | 23.7% | 24.2% | 18.1% | 23.6% | 23.3% | 23.0% | 24.0% | 25.4% | 24.4% | 26.3% | 27.4% | 28.1% |

(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 to reconciliations for additional details.

2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

Legacy PQ¹ – Net Income (Loss) to Adjusted EBITDA Reconciliation

| | Year Ended December 31, | | | | | | | | | |
|---|----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| (\$ in millions) | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Reconciliation of net income (loss) attributable to Legacy PQ to Adjusted EBITDA | | | | | | | | | | |
| 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 |
| EBITDA | 38.8 | 126.9 | 42.4 | 10.9 | 194.7 | 215.8 | 153.4 | 228.7 | 247.0 | 206.8 |
| 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 |
| Adjusted EBITDA | 119.6 | 151.2 | 177.3 | 164.3 | 225.4 | 253.8 | 274.6 | 268.7 | 306.8 | 288.1 |

2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

Legacy Eco Services¹ - 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 |
| Reconciliation of net income (loss) attributable to Legacy Eco Services to Adjusted EBITDA | | | | | | | | | | | |
| 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 |
| EBITDA | 71.5 | 99.0 | 96.0 | 106.4 | 97.5 | 92.9 | 87.2 | 113.8 | 104.3 | (10.6) | 87.7 |
| 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 |
| Adjusted EBITDA | 71.5 | 99.0 | 96.0 | 106.4 | 97.5 | 93.6 | 99.8 | 110.8 | 105.5 | 9.1 | 98.1 |

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 ¹ | 2016 Pro forma ¹ | 2017 |
| Reconciliation of net income (loss) attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA | | | |
| 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 |
| EBITDA | 326.1 | 352.7 | 294.5 |
| 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 |
| Adjusted EBITDA | 413.2 | 420.8 | 453.3 |

