INVESTOR PRESENTATION

Investor Meetings – August 2018

sustainable growth

PQ Corporation

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.

PQ INVESTMENT HIGHLIGHTS

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

Mid to High Single Digit Growth

Leading Adjusted EBITDA Margins

Proven Performance in all Macro Economic Cycles

Strong Free Cash Flows to Delever and Grow

LTM Q2 2018 Adjusted EBITDA margin

38%[1]

ENVIRONMENTAL CATALYSTS & SERVICES (EC&S)

REFINING SERVICES

SILICA CATALYST

ZEOLYST JV

Specialty catalysts for refinery, emissions control and petrochemical industries

- **Silica** – Provide finished catalysts/catalyst supports for key polyethylene (HDPE/LLDPE) customers
- **Zeolite** – Supply advanced catalyst technologies for removing sulfur from fuels and NOx from emissions
- **Refining** – Recycle the critical alkylation catalyst used to produce and boost octane levels in gasoline

24%[1]

PERFORMANCE MATERIALS & CHEMICALS (PM&C)

PERFORMANCE CHEMICALS

PERFORMANCE MATERIALS

Performance products for transportation safety and a broad number of sustainable environmentally-friendly personal and industrial uses

- **Materials** – Supply global transportation safety materials combined with our new ThermoDrop® road striping product
- **Chemicals** – Leading global supplier of silicates serving environmentally and sustainable product demand in consumer personal care and industrial products, green tires and surface coatings

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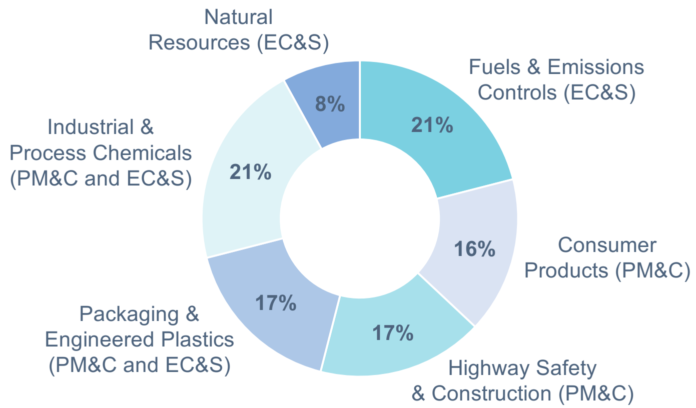
(1) Adjusted EBITDA margin calculated as Adjusted EBITDA/Sales and includes proportionate 50% share of net sales from Zeolyst joint venture

DIVERSE PORTFOLIO

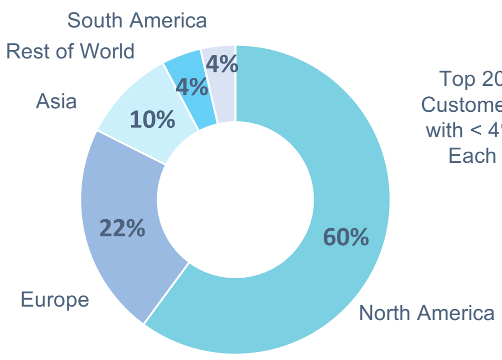
#1 and #2 positions in nearly all product lines

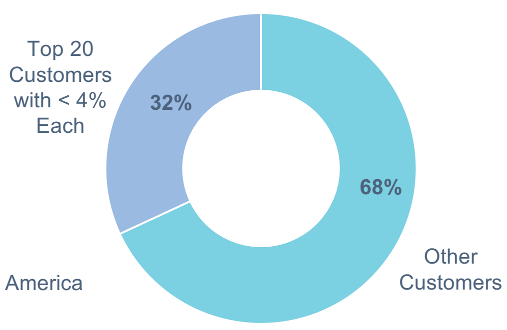
2017 SALES AND ZEOLYST JV TOTAL NET SALES: BY END USE[1]



2017 SALES GROWTH BY END USE[1]	
Fuels & Emissions Controls	+ 10%
Highway Safety & Construction	+ 8%
Industrial & Process Chemicals	+ 4%
Natural Resources	+ 3%
Consumer Products	+ 1%
Packaging & Engineered Plastics	+ 4%

2017 SALES AND ZEOLYST JV TOTAL NET SALES: BY REGION AND CUSTOMER[1]





- **End Market Robust Growth**
- **Strong Customer Positions**
- **Solid Geographic Mix**

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(1) Sales includes proportionate 50% share of total net sales from Zeolyst joint venture

2018 – POSITIONED FOR GROWTH AND SIGNIFICANT CASH FLOW

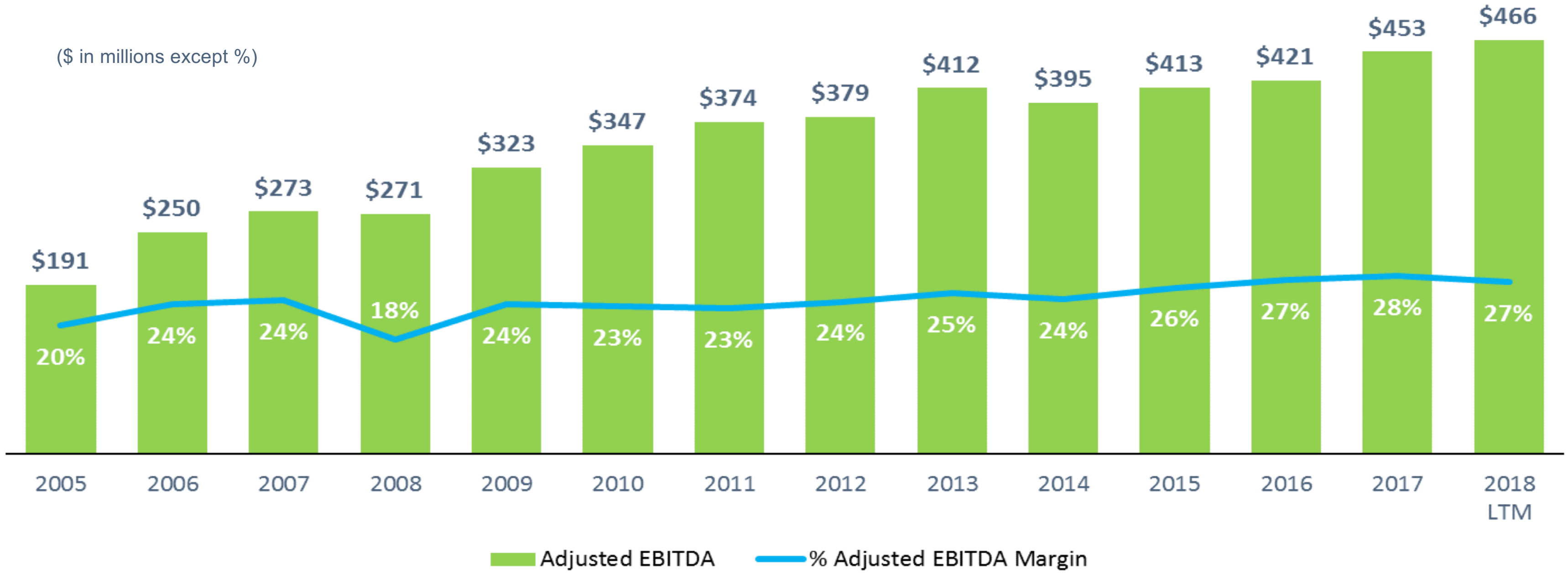
On track in 2H18 to meet Free Cash Flow target of $120 million to $140 million

- **Deliver industry-leading financial results**
  - Sales growth of 5% to 7%
  - Adjusted EBITDA growth of 4% to 8% with sustained high margins
- **Consistent capital allocation**
  - Targeting 3.0x to 3.5x net debt to Adjusted EBITDA
    - Reduce leverage by ~0.5x turn in 2H18
- **Invest in high growth organic projects; accelerate our innovation product pipeline**

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

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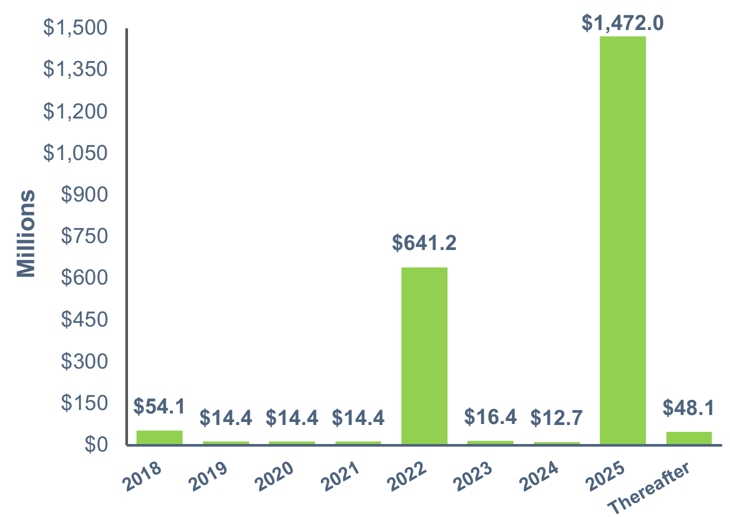
DEBT SCHEDULE

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 EBITDA[1]	**4.8x**

DEBT MATURITY SCHEDULE



- Targeting 3.0x to 3.5x net debt to Adjusted EBITDA
  - Reduce leverage by ~0.5x turn in 2H18
- $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

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(1) LTM Q2 2018 Adjusted EBITDA

SOLID PILLARS FOR GROWTH AND SUSTAINABLE MARGINS

Global environmental trends and regulations expected to drive growth of 2X – 3X GDP

Performance Chemicals
The Solid Foundation.

Multiple Growth Drivers

1

Regeneration Services:

Move to higher octane drives regeneration

2

Silica Catalysts:

Positioned for new silica-based HDPE capacity

3

Performance Materials:

Innovative solutions for highway safety

4

Zeolyst Joint Venture:

Regulation drives lower sulfur marine fuels

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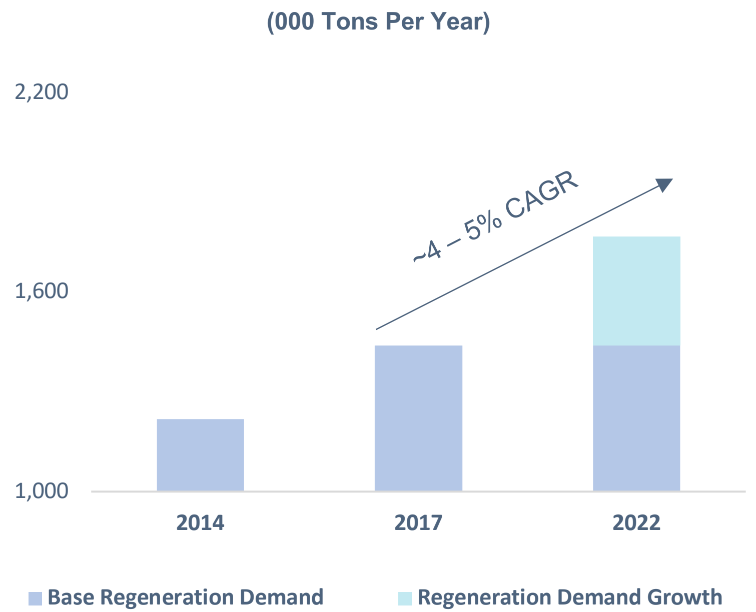
REFINING SERVICES 1

#1 U.S. Supplier

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

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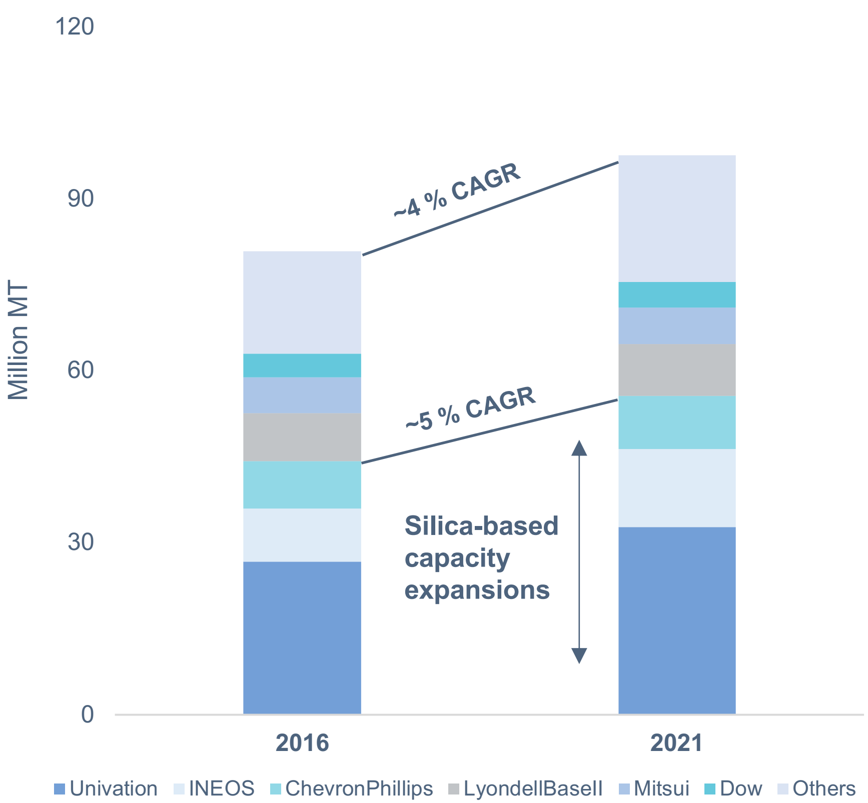
Sources: AFPM (American Fuel Petrochemical Manufacturing), EIA and PQ estimates
Note: Total global addressable market expected to grow to ~$900 million by 2021/22 with North America representing ~2/3 of the total market

SILICA CATALYSTS 2

#2 primary global supplier

PQ is aligned with key licensors for new silica-based capacity

PE Capacity by Licensor



- **~50% of the current capacity uses silica catalyst**
- **~30 announcements of new global capacity to come on line between 2018–2021**
  - Predominantly in Gulf Coast
  - ~80% of new capacity will use silica catalysts; drives 5% share increase vs alternative technologies
- **Aligned with key silica licensors**

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Sources: 2017 Industry Consultant Market Report and PQ estimates
Note: Total current addressable global market of ~$700 million

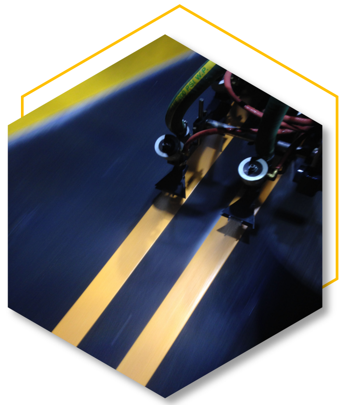
PERFORMANCE MATERIALS 3

#1 U.S. Highway Safety Beads Supplier

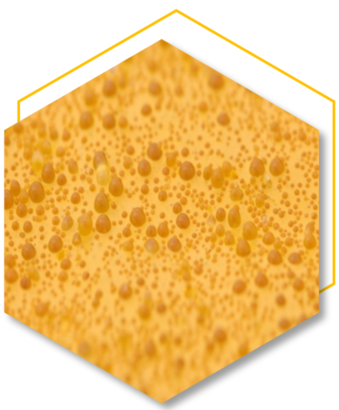
Product adjacency expected to accelerate growth up to 3x GDP

ThermoDrop® Performance

No dust



Continuous operations



Melt time
~50% faster

Perfect line with
higher reflectivity

Value Proposition

- Higher yields
- Lower labor
- Increased profits

- Total addressable market of ~$500 million
- Approved in 20 states; 9 more underway
- Sold through existing channels

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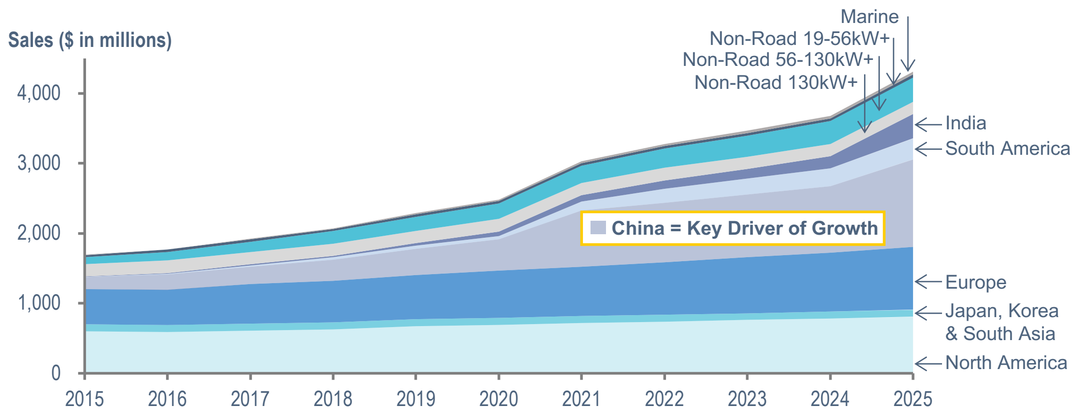
Sources: Road Marking Materials Market Research Group of HNY Research, May 2018 and PQ estimates

ZEOLYST JOINT VENTURE 4

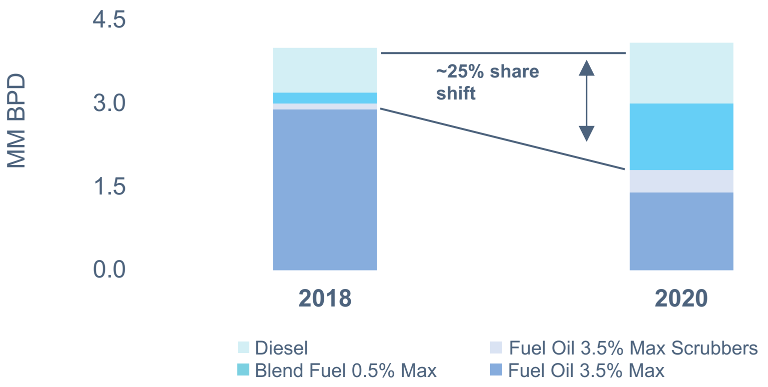
#1 global supplier of emissions catalysts

Share growth with increased fuel and emissions regulations

Global Heavy Duty Diesel (HDD) Catalyst Systems Market



Marine Bunker Demand by Fuel Type



On Road:

- **Global environmental standards for HDD progressively tightening**
  - US and Europe lead the way
  - Adoption by China, India, Brazil and others expected to accelerate demand (3x to 4x current catalyst consumption)
  - Drives increased demand and share for emissions control catalysts

Marine:

- **IMO 2020 to drive sulfur levels from 3.5% to 0.5% globally**
  - ~25% blended low sulfur fuels in bunker fuels expected to displace high sulfur fuel oil
  - Requires refineries to upgrade hardware primarily with increased new and retrofitted hydrocracking capacity
  - Drives potential demand step change for hydrocracking catalysts of incremental 3% – 5% during implementation period

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Sources: OPEC world oil outlook, OECD/IEA, Broker reports/LMC Automotive/HIS/Company reports and PQ Estimates
Note: HDD catalyst sales excludes PMS (precious metals)

PQ VERSUS PEERS – TOP QUARTILE METRICS

Valuation Disconnect

Source: CapIQ consensus data as of August 7, 2018

(1) Tangible ROIC = (EBITA * (1 – Effective Tax Rate)) / (Avg. NWC + Avg. Net PP&E). Refer appendix for reconciliation details.

SUPPLEMENTARY INFORMATION

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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

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REFINING SERVICES – SUPPLY INFRASTRUCTURE

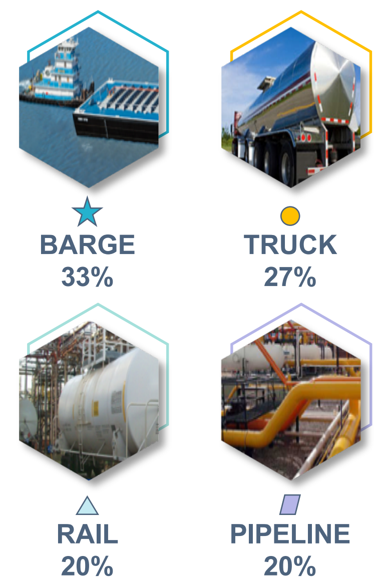
Regeneration Services business is the leading supplier with key competitive position in Gulf and California

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



- 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

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Source: 2017 data and PQ estimates

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	Three Months Ended 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.

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RECONCILIATION OF NON-GAAP FINANCIAL MEASURES

Net Income (Loss) to Segment Adjusted EBITDA

($ in millions)	Three Months Ended March 31, 2018	Three Months Ended June 30, 2018	Six Months Ended June 30, 2018	LTM Ended June 30, 2018	Three Months Ended 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 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**

(1) Other expense (income), net includes debt extinguishment costs

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 March 31, 2018	Three Months Ended June 30, 2018	Six months Ended June 30, 2018	LTM Ended June 30, 2018	Three Months Ended 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
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 Margin[2]	**26.7%**	**26.6%**	**26.6%**	**27.1%**	**27.7%**	**29.2%**	**27.9%**	**27.3%**	**28.1%**

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(1) Zeolyst joint venture adjusted EBITDA, included in Environmental Catalysts & Services, includes equity in net income plus proportionate 50% share of joint venture depreciation, amortization and interest
(2) Adjusted EBITDA margin calculation includes proportionate 50% share of net sales from Zeolyst joint venture.

2005 – LTM 2018 RECONCILIATIONS

Legacy Business – Sales & Adjusted EBITDA

	Year Ended December 31,													
($ in millions)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 Pro forma [3]	2016 Pro forma [3]	2017	LTM Q2 2018
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**	**1,550.8**
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**	**168.2**
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**	**466.1**
% 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%**	**27.1%**

(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.

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2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

Legacy PQ[1] – 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**

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

2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

Legacy Eco Services[1] – 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**

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(1) 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.

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]	Year Ended December 31, 2016 Pro forma [1]	Year Ended 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.	(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**

(1) Reflects unaudited pro forma results which gives effect to the Business Combination as further described in the company's annual report on Form 10-K for the year ended December 31, 2017

2017 RECONCILIATION
Tangible ROIC

($ in millions)	Year Ended December 31, 2017
Reconciliation of net income (loss) attributable to PQ Group Holdings Inc. to Segment Adjusted EBITA	
Net income (loss) attributable to PQ Group Holdings Inc.	57.6
Provision for (benefit from) income taxes	(119.2)
Interest expense	179.0
Amortization	52.6
EBITA	**170.0**
Joint venture amortization and interest	0.1
Amortization of investment in affiliate step-up	8.6
Amortization of inventory step-up	0.9
Debt extinguishment costs	61.9
Net loss on asset disposals	5.8
Foreign currency exchange loss	25.8
Non-cash revaluation of inventory, including LIFO	3.7
Management advisory fees	3.8
Transaction related costs	7.4
Equity-based and other non-cash compensation	8.8
Restructuring, integration and business optimization expenses	13.2
Defined benefit plan pension cost	2.9
Other	4.9
Adjusted EBITA	**317.8**

($ in millions)	Year Ended December 31, 2017
Calculation of Return on Invested Capital (ROIC)	
Adjusted EBITA	317.8
Less: Cash taxes	(29.2)
Tax-effected Adjusted EBITA	**288.6**
Average net working capital [1]	216.8
Average net PPE	1,205.9
Average Invested Capital	**1,422.7**
Tax-effected Adjusted EBITA / Average Invested Capital = Tangible ROIC	**20.3%**

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(1) Average net working capital is defined as the average of Total current assets, excluding Cash and cash equivalents, less Total current liabilities, excluding Notes payable and current maturities of long-term debt as of December 31, 2017 and December 31, 2016

friendlier products
for a cleaner,
safer world

sustainable
growth

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