



INVESTOR PRESENTATION

November 2020
Investor Meetings



LEGAL DISCUSSION

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 the sale of the Performance Materials business segment and the review of strategic alternatives for the Performance Chemicals business segment, including the intended use of proceeds therefrom, our future results of operations, financial condition, liquidity, prospects, growth, strategies, capital allocation programs, product and service offerings and end use demand trends, including the impact of the COVID-19 pandemic on such items, and financial 2020 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, our ability to close on the sale of the Performance Materials business segment on our anticipated timeline, or at all, our ability to identify a strategic alternative for the Performance Chemicals business segment and to execute on such alternative, regional, national or global political, economic, business, competitive, market and regulatory conditions, including the ongoing COVID-19 pandemic, tariffs, and trade disputes, 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.

Non-GAAP Financial Measures

This presentation includes certain non-GAAP financial measures, including adjusted EBITDA, adjusted EBITDA margin and adjusted 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 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.

Zeolyst Joint Venture

Zeolyst International and Zeolyst C.V. (our 50% owned joint ventures that we refer to collectively as the “Zeolyst Joint Venture”), are accounted for as an equity method investment in accordance with GAAP. The presentation of the Zeolyst Joint Venture’s sales in this presentation represents 50% of the sales of the Zeolyst Joint Venture. We do not record sales by the 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 the Zeolyst Joint Venture that have been recorded as equity in net income from affiliated companies in our consolidated statements of income 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 sales of the Zeolyst Joint Venture for the relevant periods in the denominator.

PQ: ACCELERATING TRANSFORMATION TO UNLOCK VALUE

1. Strong Record of Operating/Commercial Execution
2. Premium Portfolio with Strategic Transformation Under Way
3. Innovating to Drive Sustainability Solutions
4. Strong Cash Generation and Expanded Capital Allocation
5. Multiple Metrics Point to PQ as Compelling Investment

PQ'S *SIMPLER* + *STRONGER* STRATEGY

EVALUATION – 2018

SIMPLIFICATION – 2019

TRANSFORMATION – 2020

PATHWAY

- ✦ Delayed and reorganized into four distinct businesses
- ✦ Optimized the performance and positioning of our businesses, including cash
- ✦ Reduced capital intensity
- ✦ Continued active portfolio management

GOALS

- ✦ Enhance growth rate
- ✦ Achieve higher and sustainable Adjusted EBITDA margins
- ✦ Maintain strong cash conversion
- ✦ Balance debt reduction with return of cash to shareholders

PORTFOLIO SHIFTS TO HIGHER GROWTH AND MARGINS

Simpler +
STRONGER

2017–2019
Financial Performance

◆ **LEGACY PQ:**
Catalysts / Refining Services /
Performance Chemicals /
Performance Materials

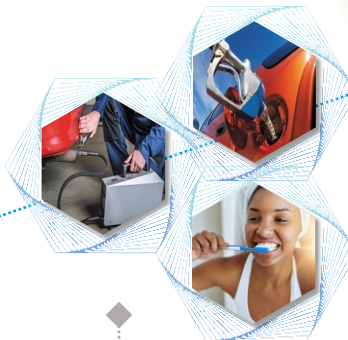
◆ **CURRENT PQ:**
Catalysts / Refining Services /
Performance Chemicals

◆ **TARGET PQ:**
Catalysts / Refining Services



SALES CAGR
ADJUSTED EBITDA CAGR
AVG ADJUSTED EBITDA MARGIN

4%
3%
29%



3%
3%
32%

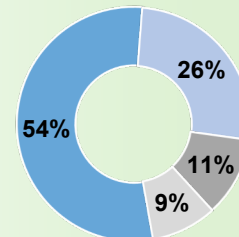


SALES CAGR
ADJUSTED EBITDA CAGR
AVG ADJUSTED EBITDA MARGIN

7%
8%
39% } **100% Organic**

**% of Sales
by End Use¹**

- Fuels & Emission Controls
- Packaging & Engineered Plastics
- Industrial & Process Chemicals
- Natural Resources



(1) Based on 2019 sales, which includes proportionate 50% share of sales from Zeolyst Joint Venture

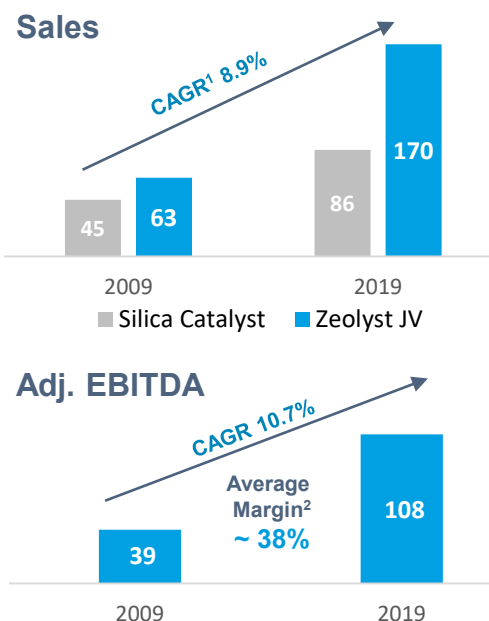
CATALYSTS: ESSENTIAL FOR A SUSTAINABLE FUTURE



Competitive Strengths

- PQ silica-based catalyst technology improves strength-to-weight ratio of HDPE and LLDPE
- R&D pipeline focused on plastic recycling
- Zeolyst JV zeolite-based technology reduces emissions from refineries and vehicles

Attractive Growth & Margins



Growth Drivers

- ~80% of polyethylene capacity expansions specify silica-based catalyst technology
- Broader global adoption of fuel emission standards drive hydrocracking capacity investments
- Tightening vehicle emission standards for improved air quality

REFINING SERVICES: CRITICAL FOR SUSTAINABLE FUEL PRODUCTION

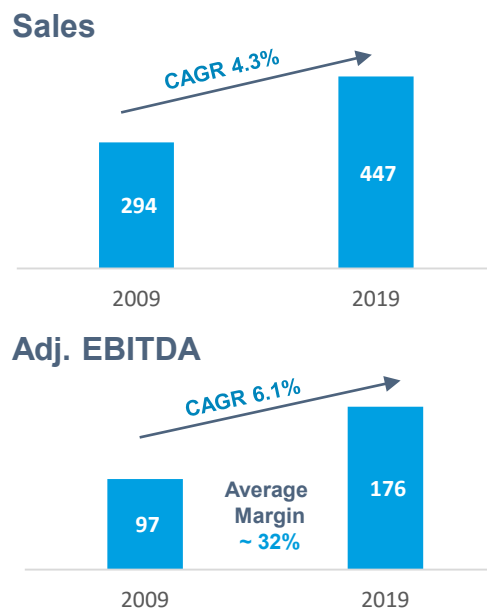


Competitive Strengths

- Largest regeneration network for recycling of sulfuric acid catalyst in U.S. Gulf and West Coast
- 5 to 10 year contracts with high cost pass-through
- Diversification of customer base with virgin acid sales into broader industrial applications



Attractive Growth & Margins



Growth Drivers

- Rising North American alkylate unit production for higher octane gasoline
- Virgin acid demand from a diverse set of growing industrial end uses
- Increasing opportunities to further integrate with refinery operations

"TARGET PQ" PORTFOLIO POSITIONED TO SERVE TWO KEY LONG-TERM SUSTAINABLE TRENDS

~80% of innovation projects within Target PQ have links to sustainability

- Trusted supply and technical support for customers
- Innovation and collaboration to help our customers define a sustainable future
- Operating and supply partner at every step of the journey



REFINING SERVICES

- Largest North America recycler of spent sulfuric acid, avoiding 1.5 million tons of landfill or deep well disposal annually
- One of the largest consumers of refinery by-product sulfur, converting for other applications
- World class low SO₂ emissions



CATALYSTS

- Remove sulfur from diesel fuel for land and marine transportation
- Provide active component for > 90% reduction of NOx emissions from diesel engines
- Improve fuel economy by reducing friction enabled by improved lubricants

CIRCULAR PLASTICS ECONOMY

Lightweighting, Strengthening & Recycling

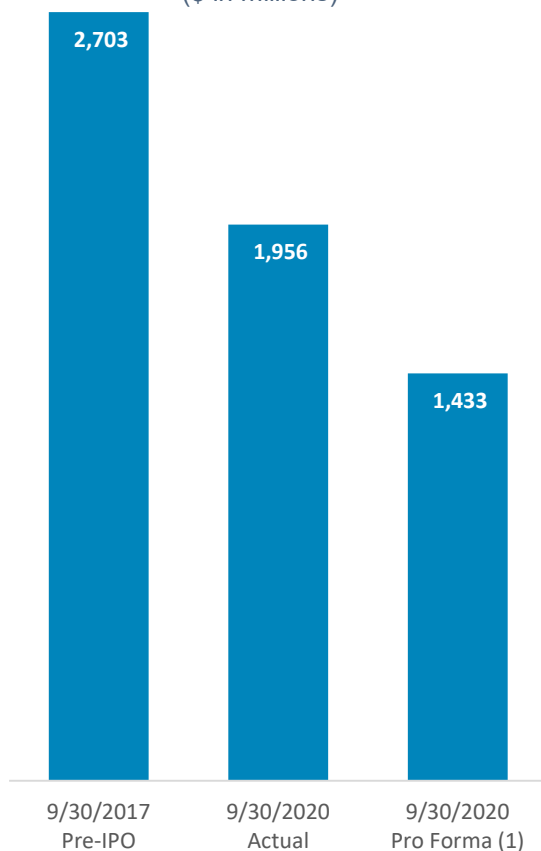
CLEAN ENERGY TRANSITION

Evolving Fuels, Emission Reductions & Energy Storage

CAPITAL ALLOCATION PRIORITIES TO INCLUDE SPECIAL DIVIDENDS

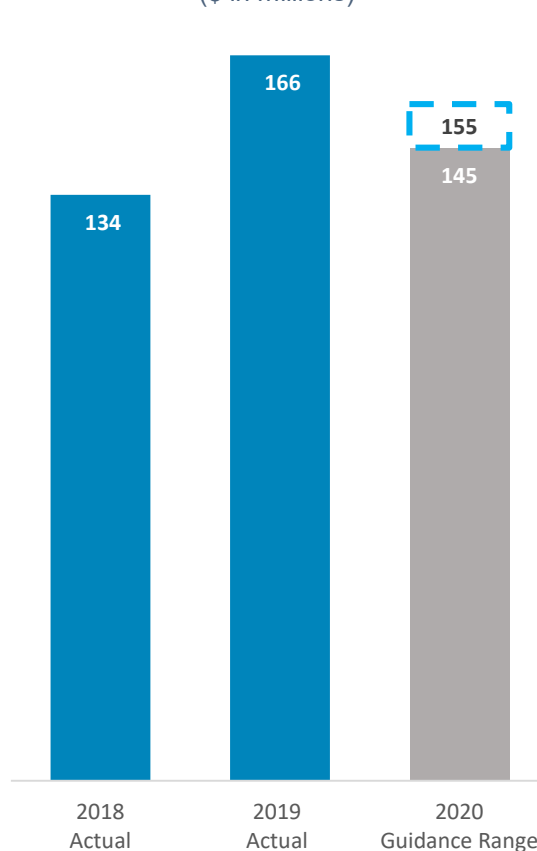
SIGNIFICANT DEBT REDUCTION...

(\$ in millions)



CONSISTENT ADJUSTED FREE CASH FLOW GENERATION²...

(\$ in millions)



TRANSACTION AND CASH GENERATION PROVIDE USE OF PROCEEDS FLEXIBILITY...

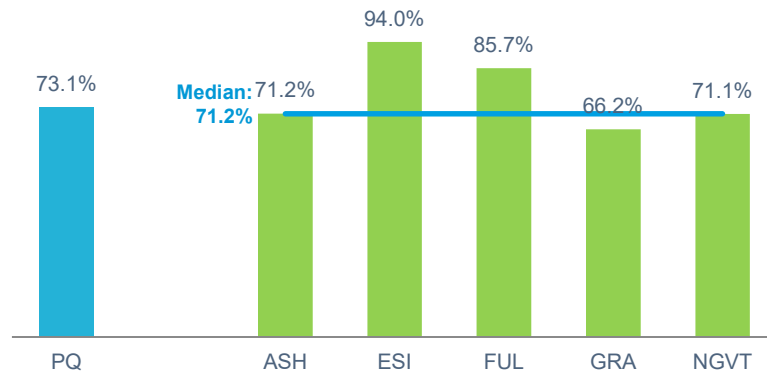
- Expect to reduce debt by ~\$460 million
- Targeting special dividend of up to \$250 million, or \$1.84 per share, subject to board approval and declaration
- Will consider opportunistic dividends going forward

PQ UNDERVALUED VS SPECIALTY CHEMICAL PEERS

Metrics

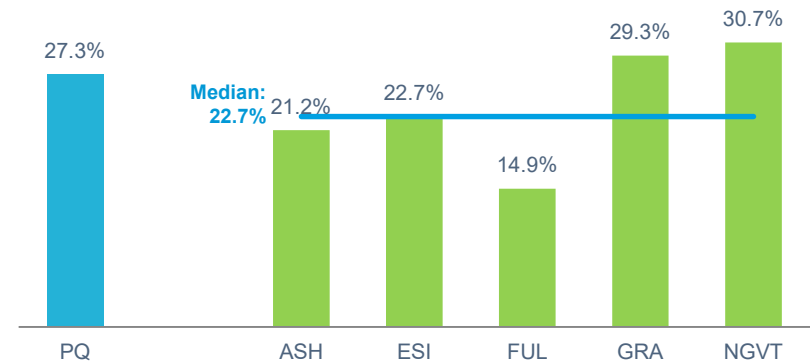
Cash Conversion

'19A^{1,2}



Adj EBITDA Margin

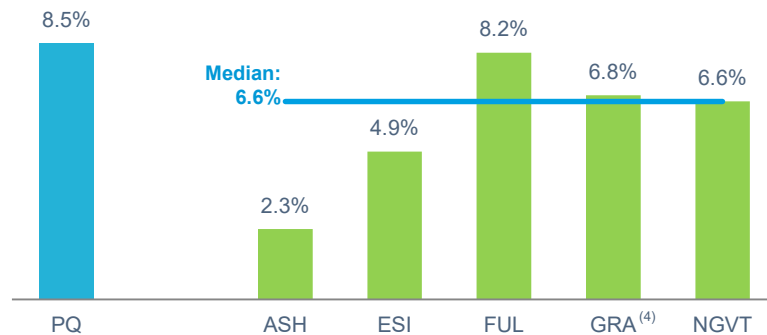
'19A¹



Valuation

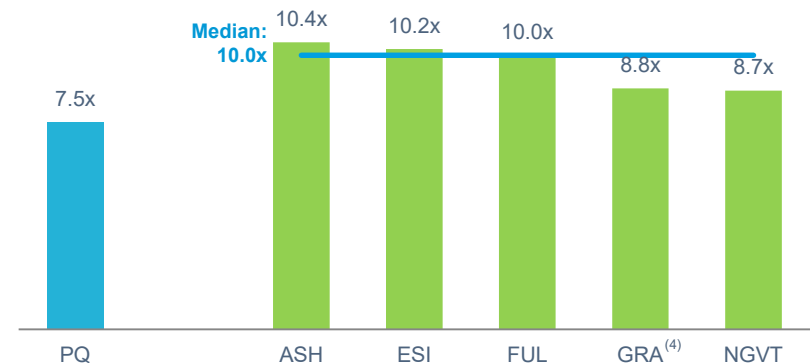
FCF Yield

'19A FCF^{1,3} / Market Cap



Adj EBITDA Multiple

TEV / '21E EBITDA



Source: Morgan Stanley, CapIQ consensus as of November 6, 2020

Notes: PQ and Peers are not adjusted for M&A

(1) PQ includes 50% proportional share of Zeolyst Joint equity earnings

(2) Cash Conversion defined as (Adj EBITDA – Capex) / Adj EBITDA

(3) Free Cash Flow calculated as Cash Flow from Operations – Capex

(4) Excludes 40 North Management proposed acquisition announced on 11/9/20 for \$60 per share which implies 5.0% FCF yield and 10.7x TEV/EBITDA multiple

TRANSFORMING POTENTIAL, COMPELLING INVESTMENT



- Transforming portfolio to target higher margins and higher growth potential
- Favorable long-term secular demand drivers
- Innovative culture and excellent customer relationships/positioning
- Sustainable products and services for customer solutions
- Track record of strong free cash flows

SUPPLEMENTAL INFORMATION



NEXT PORTFOLIO FOCUS: PERFORMANCE CHEMICALS



PERFORMANCE CHEMICALS

KEY CUSTOMERS

Diverse Consumer Product and Industrial Product manufacturers

COMPETITIVE STRENGTHS

- Technology leader in silica-based materials (process and product application)
- Largest global sodium silicates supplier, at least 2x larger than nearest competitor
- 50+ year customer relationships

GROWTH DRIVERS

- \$10 to \$15 million Adjusted EBITDA annualized improvement from ongoing operational transformation by late 2021
- Demand increase from industrial recovery in 2021/2022
- Positioned to capture more high margin sales
- M&A opportunities for adjacencies and vertical integration



Simplifies the portfolio



Allows capital to be allocated to higher growth businesses



Sharpens focus on dynamic polymer and refining industries

2020 FINANCIAL GUIDANCE

(\$ in millions, except per share)	2019 Actual	2020 Outlook including Performance Materials	2020 From Continuing Operations
Sales ¹	1,567.1	1,430 – 1,460	1,080 – 1,100
Adjusted EBITDA	474.3	410 – 425	330 – 345
Adjusted Free Cash Flow ²	166.2	145 – 155 ³	95 – 105 ³
Capital Expenditures	127.6	95 – 105	80 - 90

- Maintained full year 2020 outlook on solid year to date results with margins of ~27%
- Introduced full year 2020 outlook for continuing operations:
 - Higher Adjusted EBITDA margin ~28%
 - Pro forma leverage projected to be ~4x at December 31, 2020
- Sale proceeds and cash generation for debt reduction and special dividend

(1) GAAP sales only; Excludes proportionate 50% share of Zeolyst Joint Venture sales target of \$120 to \$130 million versus \$170 million in 2019
 (2) Adjusted free cash flow defined as net cash provided by operating activities less purchases of property, plant and equipment, adjusted for proceeds from sale of assets and net interest proceeds on swaps designated as net investment hedges
 (3) Excludes \$18 million in cash proceeds from the sale of a non-core product line sale on July 1, 2020 in Performance Chemicals
 Note: Guidance as of Third Quarter Earnings call held on October 30, 2020

ANNUAL SEGMENT SALES, ADJUSTED EBITDA AND MARGINS

(\$ in millions except %, unaudited)	Year Ended December 31,		
	2019	2018	2017
Sales:			
Refining Services	447.1	455.6	398.4
Silica Catalysts	85.7	72.1	75.3
Performance Materials	363.0	378.3	324.2
Performance Chemicals	685.1	717.3	687.6
Eliminations	(13.8)	(15.1)	(13.4)
Total sales	1,567.1	1,608.2	1,472.1
Zeolyst joint venture sales	170.3	156.7	143.8
Adjusted EBITDA:			
Refining Services	175.6	176.5	154.2
Catalysts	107.8	81.1	89.4
Performance Materials	76.7	72.5	69.7
Performance Chemicals	154.3	170.9	170.5
Total Segment Adjusted EBITDA	514.4	501.0	483.8
Corporate	(40.1)	(37.0)	(30.5)
Total Adjusted EBITDA	474.3	464.0	453.3
Adjusted EBITDA Margin:			
Refining Services	39.3%	38.7%	38.7%
Catalysts ¹	42.1%	35.4%	40.8%
Performance Materials	21.1%	19.2%	21.5%
Performance Chemicals	22.5%	23.8%	24.8%
Total Adjusted EBITDA Margin¹	27.3%	26.3%	28.1%

RECONCILIATION FOR ADJUSTED FREE CASH FLOW

(\$ in millions)	Full Year 2019	Full Year 2018	Full Year 2017
Cash Flow from Operations before interest and tax	401.9	377.5	364.5
Less:			
Cash paid for taxes	17.4	23.8	29.2
Cash paid for interest ¹	116.8	105.1	170.1
Cash Flow from Operations	267.7	248.6	165.2
Less: Purchases of property, plant and equipment ²	127.6	131.7	140.5
Free Cash Flow	140.1	116.9	24.7
Plus: Proceeds from sale of assets	17.6	12.4	-
Plus: Net interest proceeds on currency swaps	8.5	4.9	-
Adjusted Free Cash Flow	166.2	134.2	24.7

RECONCILIATION FOR NET INCOME TO SEGMENT ADJUSTED EBITDA

(\$ in millions)	Year Ended December 31, 2019	Year Ended December 31, 2018	Year Ended December 31, 2017
Reconciliation of net income attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA			
Net income attributable to PQ Group Holdings Inc.	79.5	58.3	57.6
Provision for (benefit from) income taxes	40.7	29.0	(119.2)
Interest expense	111.5	113.7	179.0
Depreciation and amortization	182.1	185.2	177.1
EBITDA	413.8	386.2	294.5
Joint venture depreciation, amortization and interest ^a	14.7	12.6	11.1
Amortization of investment in affiliate step-up ^b	7.5	6.6	8.6
Amortization of inventory step-up ^c	—	1.6	0.9
Impairment of intangible assets	1.6	—	—
Debt extinguishment costs	3.4	7.8	61.9
Net loss (gain) on asset disposals ^d	(13.1)	6.6	5.8
Foreign currency exchange (gain) loss ^e	2.8	13.8	25.8
LIFO expense ^f	11.1	8.4	3.7
Management advisory fees ^g	—	—	3.8
Transaction and other related costs ^h	3.6	0.9	7.4
Equity-based compensation	18.2	19.5	8.8
Restructuring, integration and business optimization expenses ⁱ	4.1	14.0	13.2
Defined benefit plan pension cost (benefit) ^j	3.1	(0.8)	2.9
Gain on contract termination ^k	—	(20.6)	—
Other ^l	3.5	7.4	4.9
Adjusted EBITDA	474.3	464.0	453.3
Unallocated corporate costs	40.1	37.0	30.5
Total Segment Adjusted EBITDA¹	514.4	501.0	483.8
EBITDA Adjustments by Line Item			
EBITDA	413.8	386.2	294.5
Cost of goods sold	13.0	16.3	7.9
Selling, general and administrative expenses	21.6	23.0	13.2
Other operating expense (income), net	—	(0.9)	31.5
Equity in net (income) from affiliated companies	7.7	6.6	8.6
Other expense (income), net ²	3.5	20.2	86.5
Joint venture depreciation, amortization and interest ^a	14.7	12.6	11.1
Adjusted EBITDA	474.3	464.0	453.3

DESCRIPTIONS TO NON-GAAP RECONCILIATION

- a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalysts segment includes our 50% interest in the Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of the Zeolyst Joint Venture.
- b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in the Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016 (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 the 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 statements of income.
- d) 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. During the year ended December 31, 2019, the net gain on asset disposals includes the gains related to the sale of a non-core product line and sale of property.
- e) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income primarily related to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars and, during 2018 and 2017, the Euro-denominated term loan (which was settled as part of the February 2018 term loan refinancing).
- f) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.
- g) Reflects consulting fees paid to CCMP and affiliates of INEOS for consulting services that include certain financial advisory and management services. These consulting agreements were terminated upon completion of our initial public offering ("IPO") on October 3, 2017.
- h) Represents the costs related to several transactions that are completed, pending or abandoned and that we believe are not representative of our ongoing business operations.
- i) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.
- j) Represents adjustments for defined benefit pension plan costs in our statements of income. 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.
- k) Represents a non-cash gain on the write-off of the remaining liability under a contractual supply arrangement. As part of the acquisition by Eco Services Operations LLC of substantially all of the assets of Solvay USA Inc.'s sulfuric acid refining business unit on December 1, 2014, we recognized a liability as part of business combination accounting related to our obligation to serve a customer under a pre-existing unfavorable supply agreement. In December 2018, the customer who was party to the agreement closed its facility, and as a result, we were relieved from our obligation to continue to supply the customer on the below market contract. Because the fair value of the unfavorable contract liability was recognized as part of the application of business combination accounting, and since the write-off of the remaining liability was non-cash in nature, we believe this gain is a special item that is not representative of our ongoing business operations.
- l) 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).



Shaping
our path for a
sustainable
future

