

First Quarter 2023

May 4, 2023 —11 a.m. ET

YOUR CATALYST FOR POSITIVE CHANGE™

Legal Discussion



Continuing Operations

Financial results are presented on a continuing operations basis, which excludes the Performance Materials business and Performance Chemicals business unless otherwise indicated.

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, our future results of operations, financial condition, liquidity, prospects, growth, strategies, capital allocation programs (including our share repurchase program), product and service offerings, expected end use demand trends and financial 2023 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, including tariffs and trade disputes, currency exchange rates, effects of inflation, and other factors, including those described in the sections titled “Risk Factors” and “Management’s 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, adjusted free cash flow, net debt leverage ratio and cash conversion, 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. In reliance upon the unreasonable efforts exemption provided under Item 10(e)(1)(i)(B) of Regulation S-K, 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. Because this information is uncertain, the Company is unable to address the probable significance of the unavailable information, which could be material to future results.

Legal Discussion Continued








Supply Share and Industry Information

Certain statistical information used in this presentation is based on independent industry publications, reports by research firms or other published independent sources. Some statistical information is also based on our good faith estimates which are derived from management's knowledge of our industry and such independent sources referred to above. Certain supply share statistics, ranking and industry information included in this presentation, including the size of certain markets and our estimated supply share position and the supply share positions of our competitors, are based on management estimates. These estimates have been derived from our management's knowledge and experience in the industry and end uses into which we sell our products, as well as information obtained from surveys, reports by research firms, our customers, distributors, suppliers trade and business organizations and other contacts in the industries into which we sell our products. We believe these data to be accurate as of the date of this presentation. However, this information may prove to be inaccurate because this information cannot always be verified with complete certainty due to the limitations on the availability and reliability of raw data, the voluntary nature of the data gathering process and other limitations and uncertainties. Unless otherwise noted, all of our supply share position and industry information presented in this presentation herein is an approximation based on management's knowledge and is based on our, or, in the case supply share position information excludes volume attributable to manufacturers who produce primarily for their own consumption. In addition, references to various end uses into which we sell our products are based on how we define the end uses for our products.

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.

Key Messages

-  1 Demand fundamentals remained positive across the majority of end uses we serve
-  2 As anticipated, first quarter 2023 financial results reflect the adverse impact of Winter Storm Elliott, costs associated with planned turnaround activity, and timing of hydrocracking catalyst sales
-  3 Benefitted from positive pricing in regeneration services and silica-based catalysts
-  4 Successful Secondary Offering of stock resulted in ownership exit by a private equity owner
-  5 Maintaining full-year guidance for Adjusted EBITDA and Adjusted Free Cash Flow

Key Highlights

Q1 2023 Key Highlights

\$183 Mln

Sales
Q1 2023¹

\$43 Mln

Adj. EBITDA
Q1 2023^{1,2}

75%

Cash
Conversion^{2,3,4}

3.2X

Net Debt Leverage
Ratio^{2,5}

#1 or #2

Supply Share Position

\$119 Mln

Liquidity⁶



1. Sales change percentage includes proportionate 50% share of sales from Zeolyst Joint Venture, although such sales are not consolidated with our results of operations. Adjusted EBITDA percentage change includes proportionate 50% share of sales from the Zeolyst Joint Venture

2. See Appendix for Reconciliations of non-GAAP measures.

3. For TTM period ended 3/31/2023. Cash Conversion = Adjusted EBITDA - Capex as a % of Adjusted EBITDA

4. Cash Conversion is calculated on a TTM basis

5. Net Debt Leverage Ratio = (Total debt – Cash and cash equivalents) / Adjusted EBITDA

6. Liquidity = \$62 million of Cash and Cash equivalents + Availability on revolving ABL facility of \$57 million

Demand Trends and Drivers

	End Use	Key Products	2022 Total Sales ¹	Demand Trend Q1'23 Vs Q4'23	Q2'23E vs Q1'23	Industry Growth Rate	2023 Anticipated Demand Drivers
Ecoservices	REGEN & TREATMENT SERVICES	Regeneration For Alkylation & Waste Treatment	~35%			~3%	YTD Gasoline demand surpasses 2022 levels, Q1 growth at 3% YoY; Refiners importing Alkylate to meet demand; Summer travel and return to work expected to boost demand; Utilization remains >90%; LatAm exports exceed 5-year average
	INDUSTRIAL	Virgin Sulfuric Acid for Industrial, Mining & Automotive	~35%			~5%	Auto industry remains resilient as inventory improves; Green copper demand spurs investment; Construction on road to recovery
	OTHER	Catalyst Activation / Alum & Bisulfide	~2%			> 10%	Strong renewable diesel capacity growth with new projects. Refineries ramp up after turnaround. Stability in Paper/Packaging and Water sectors
Catalyst Technologies	POLYMERS	Polyethylene & Niche Custom Catalysts	~15%			~4%	Domestic demand strong; exports rising and China recovering; NA cost advantage persists throughout the year. Solid demand from MMA, AIX, and Biomaterials
	CLEAN FUELS / EMISSION CONTROL	Catalyst for Hydrocracking				~6%	Europe-bound diesel exports; elevated refinery utilization; inventory gains expected post-maintenance; Robust demand with 3% YoY increase in Q2
		Emission Control Catalyst	~13%			~6%	Backlog/Build ratio stabilizing; production set to rise as economic growth moderates. Anticipated chip supply enhancements to boost production in 2023
		Catalyst for Renewable Fuels				> 25%	Anticipated 1.5X growth in NA HVO production capacity in 2023; hydro processing technology to dominate; Over 50 airlines commit to SAF offtake agreements



Flat/Low single digit increase
 Mid/High single digit increase

Sources: EIA, S&P, LMC, Global Data, CMA, Bloomberg, Management Estimates
 1. Includes sales attributable to 50% ownership in the Zeolyst J.V.

Expanding our Focus on Sustainability

Sustainability Leadership Award Program – Launched program to drive sustainability improvements in product development, internal processes and social impact areas

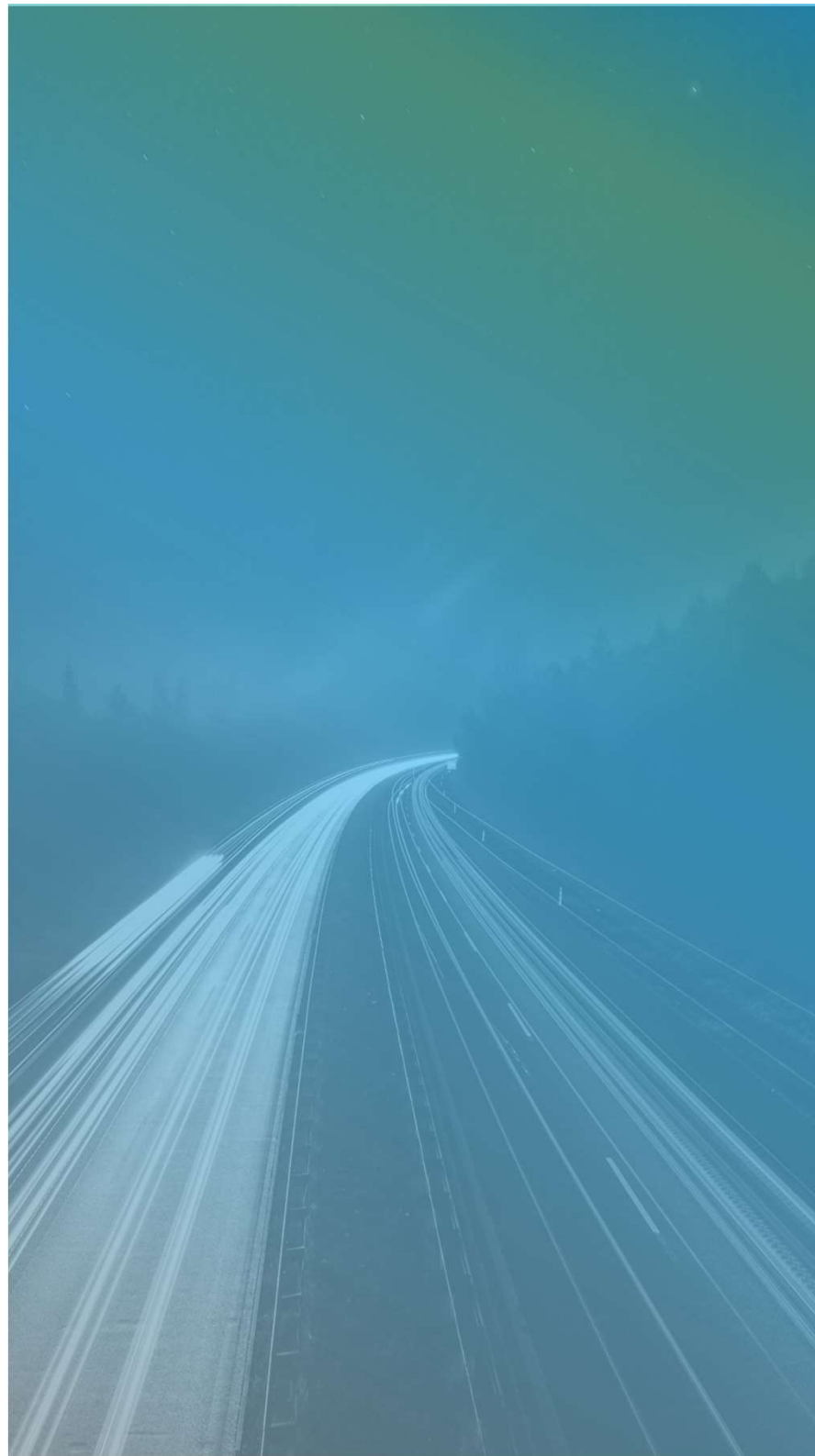
- **Climate Change** - Baton Rouge Furnace Optimization Project providing for significant reduction in energy consumption and related GHG emissions
- **Innovation** – Silica catalyst for bio-butadiene for use in green, synthetic rubber – replacement for petroleum-based butadiene
- **Community Impact** – Baytown site recognized for community partnerships as long-term partner supporting local school, support to mutual aid groups, food bank support and community cleanup efforts

Expanding Sustainability Team - Recent addition of Director of Sustainability

2022 Sustainability Report – Third quarter 2023



**First Quarter 2023
Financial Performance**



Financial Performance – Q1 2023

First Quarter Financial Results


(\$ in millions)	First Quarter 2023	First Quarter 2022	\$ Change	% Change
Ecovyst Sales	160.9	179.7	(18.8)	(10.5)
Zeolyst JV Sales	22.1	29.0	(6.9)	(23.8)
Adjusted EBITDA ¹	42.9	59.2	(16.3)	(27.5)
Adjusted EBITDA Margin ^{1,2} (%)	23.4	28.4		(500 bps)

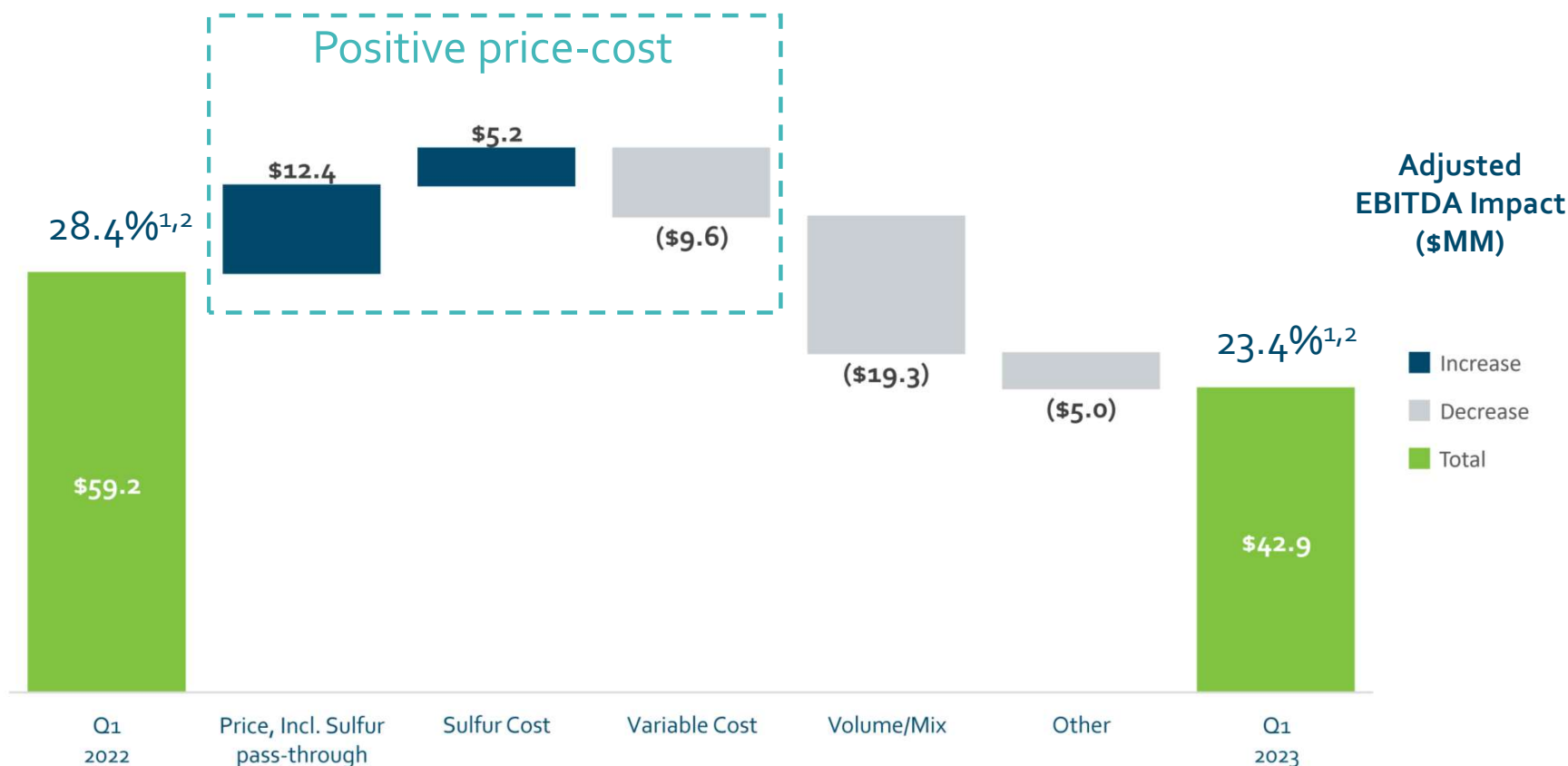
(\$ in millions)	\$ Change	% Change
Sales Change Factors ³		
Volume	(30.0)	(16.7)
Price (ex sulfur pass-through)	17.3	9.6
Price impact of sulfur pass-through	(5.2)	(2.9)
Currency	(0.9)	(0.5)



1. See Appendix for Reconciliations of non-GAAP measures.
2. Adjusted EBITDA margin calculation includes proportionate 50% share of sales from the Zeolyst Joint Venture
3. Sales Change Factors exclude the Zeolyst Joint Venture

Adjusted EBITDA Bridge – Q1 2023


 Ecoservices volume impacted by Winter Storm Elliott and extended maintenance turnaround activity. Catalyst Technologies volume impacted by order timing
 Both businesses have continued strong pricing



1. See Appendix for Reconciliations of non-GAAP measures.
 2. Adjusted EBITDA margin calculation includes proportionate 50% share of sales from the Zeolyst Joint Venture

Ecoservices – Q1 2023 Financial Performance

(\$ in millions)	First Quarter 2023	First Quarter 2022	\$ Change	% Change
Ecoservices Sales	137.8	154.0	(16.2)	(10.5)
Adjusted EBITDA ¹	36.8	49.3	(12.5)	(25.4)
Adjusted EBITDA Margin ¹ (%)	26.7	32.0		

Ecoservices Highlights

- First quarter sales reflect lower sales of virgin sulfuric acid associated with Winter Storm Elliott, extended maintenance turnaround activity at one of our facilities, and lower pass-through of sulfur costs, partially offset by higher pricing in regeneration services
- Adjusted EBITDA down \$12.5 million reflecting lower sales volume, higher unplanned repair and maintenance costs, as well as costs associated with planned turnaround activity, partially offset by higher pricing in regeneration services
- Adjusted EBITDA margin of 26.7% reflects the impact of lower sales volume, higher turnaround costs and unplanned repair and maintenance costs

Catalyst Technologies – Q1 2023 Financial Performance



(\$ in millions)	First Quarter 2023	First Quarter 2022	\$ Change	% Change
Silica Catalysts Sales	23.1	25.7	(2.6)	(10.1)
Zeolyst JV Sales	22.1	29.0	(6.9)	(23.8)
Adjusted EBITDA ¹	13.0	17.0	(4.0)	(23.5)
Adjusted EBITDA Margin ^{1,2} (%)	28.8	31.1		

Catalyst Technologies Highlights

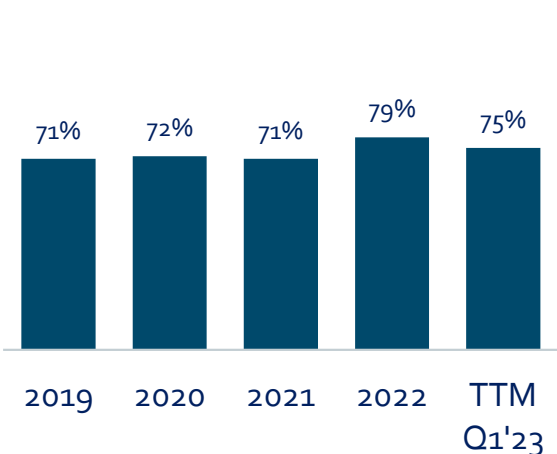
- Sales decrease reflects lower hydrocracking and specialty catalyst sales associated with order timing, and lower sales of polyethylene catalysts, partially offset by higher pricing
- The decrease in Adjusted EBITDA and associated margin reflects lower sales volume, partially offset by continued strong pricing and favorable product mix

Cash, Leverage & Liquidity

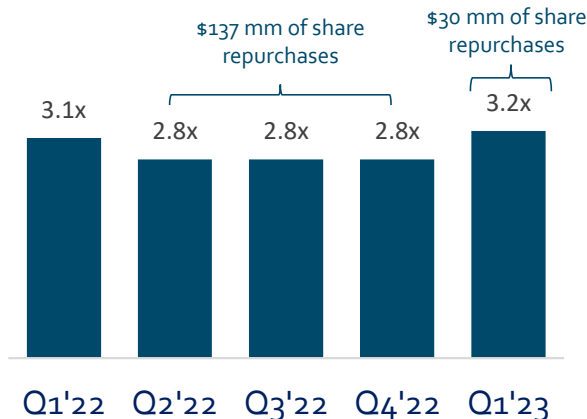
Strong Cash Conversion Provides for Capital Allocation Flexibility and Improving Leverage Profile



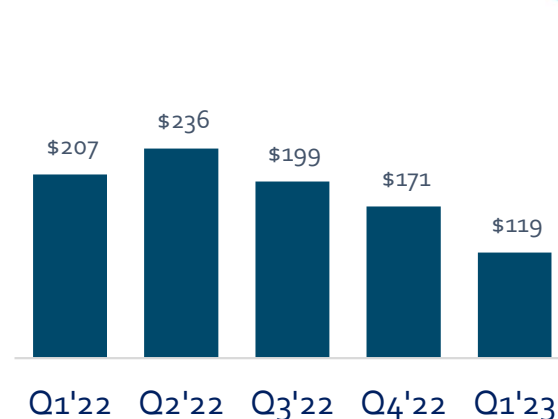
Cash Conversion¹



Net Leverage Ratio²



Liquidity³



Cash Generation

- Historically modest capital spending
- Continued improvement in conversion ratio with growth in Adjusted EBITDA

Share repurchase authorization

- Originally \$450 million / 4 years
- Returned capital to shareholders via \$137 million of share repurchases in 2022 and \$30 million of share repurchases in Q1'23
- \$283 million remaining under authorization

Leverage Ratio and Debt Profile

- Robust cash generation capability has provided for historic reduction in leverage
- No significant debt maturities until 2028
- No maintenance covenants on leverage
- Interest caps limit rate exposure

Liquidity

- At 3/31/2023, Liquidity of \$119 million was comprised of cash and cash equivalents of \$62 million and availability under the Revolving ABL facility of \$57 million

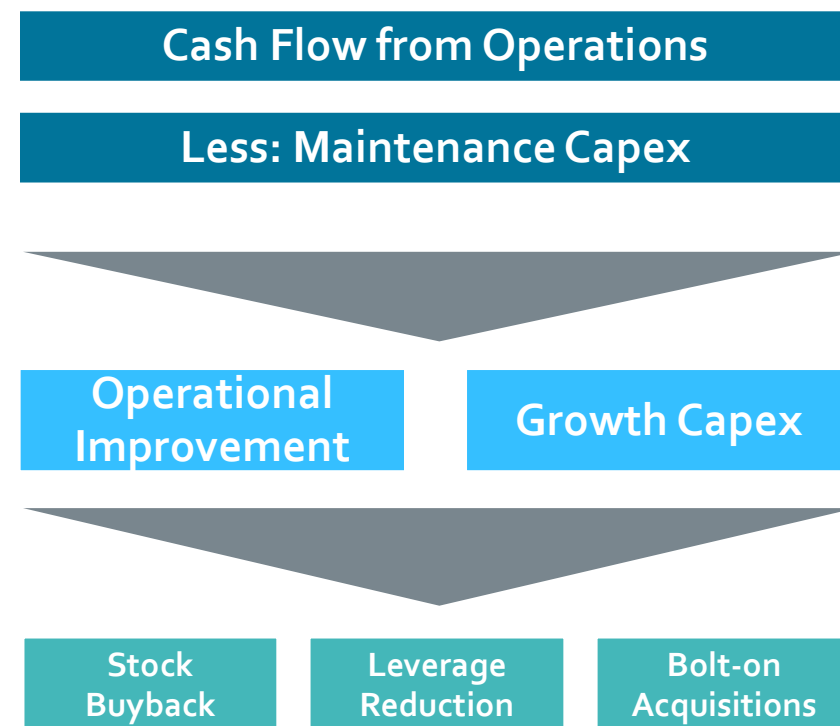


1. Cash Conversion = (Adjusted EBITDA-Capex)/(Adjusted EBITDA). See appendix for reconciliation of non-GAAP measures
 2. Net Debt Leverage Ratio = (Total debt – cash and cash equivalents) / Adjusted EBITDA. See appendix for reconciliation of non-GAAP measures
 3. Liquidity = cash and cash equivalents + Availability on revolving ABL facility

Balanced Capital Allocation Strategy to Support Growth Initiatives and Drive Shareholder Return

Strong free cash flow generation provides financial flexibility and supports a balanced capital allocation strategy focused on:

- Operational improvements & organic growth initiatives
- Reduction in leverage
- Accretive bolt-on opportunities
- Share repurchase program
 - In Q1 2023, repurchased 3,000,000 shares in conjunction with a secondary offering at an average price of \$9.95
 - For full-year 2022, repurchased 1,970,763 shares via open market purchases at an average price of \$9.82 per share, and repurchased 14,500,000 shares in conjunction with secondary offerings at an average price of \$8.09 per share



Ecovyst 2023 Outlook

Ecovyst			
(\$ in millions, except per share)	2022 Actual	Q4 2022 Prior Guidance	Q1 2023 Updated Outlook
Sales ¹	\$820	\$760 - \$790	\$730 - \$760
Zeolyst JV Sales	\$133	\$145 - \$155	\$145 - \$155
Adjusted EBITDA ²	\$277	\$285 - \$300	\$285 - \$300
Adjusted Free Cash Flow ²	\$146	\$115 - \$130	\$115 - \$130
Capital Expenditures	\$56	\$60 - \$70	\$60 - \$70
Interest Expense	\$37	\$45 - \$50	\$45 - \$50
Depreciation & Amortization			
Ecovyst	\$79	\$80 - \$90	\$80 - \$90
Zeolyst JV	\$16	\$14 - \$16	\$14 - \$16

Adjusted EBITDA Growth of 6%
In 2023 from 2022
Assuming midpoint of guidance

- Projected Sales for 2023 reduced from \$760 - \$790 million to \$730 - \$760 million to reflect lower projected pass-through of energy costs and lower expected virgin sulfuric acid volume resulting from Winter Storm Elliott and the extended maintenance turnaround activity
- Relative to 2022, the Sales decrease reflects the pass-through of lower average sulfur prices of approximately \$90 million



1. GAAP sales only; Excludes proportionate 50% share of the Zeolyst Joint Venture sales
2. See Appendix for Reconciliations of non-GAAP measures

Summary



- 1** Demand outlook remains positive
- 2** Believe portfolio remains well-positioned to serve growing needs for sustainable products and low carbon technologies
- 3** Maintaining 2023 guidance for Adjusted EBITDA and Adjusted Free Cash Flow
- 4** Expect strong cash generation to support capital allocation priorities

APPENDIX

Annual Segment Sales, Adjusted EBITDA and Margins

(\$ in millions, except %)	Trailing Twelve Months Ended		Year Ended December 31,		
	3/31/2023	2022	2021	2020	2019
Sales:					
Ecoservices	686.3	702.5	500.5	401.9	447.1
Silica Catalysts	115.4	117.7	110.7	94.0	85.7
Total sales	801.7	820.2	611.2	495.9	532.8
Zeolyst Joint Venture sales	125.7	132.6	131.3	128.6	170.3
Adjusted EBITDA¹:					
Ecoservices	215.3	227.8	177.7	157.2	175.6
Catalyst Technologies	74.0	78.0	88.0	74.5	107.8
Unallocated corporate expenses	(28.8)	(29.0)	(38.1)	(39.1)	(43.3)
Total Adjusted EBITDA	260.5	276.8	227.6	192.6	240.1
Adjusted EBITDA Margin¹:					
Ecoservices	31.4%	32.4%	35.5%	39.1%	39.3%
Catalyst Technologies	30.7%	31.2%	36.4%	33.5%	42.1%
Total Adjusted EBITDA Margin^{1,2}	28.1%	29.0%	30.7%	30.8%	34.1%

1. See Appendix for Reconciliations of non-GAAP measures.

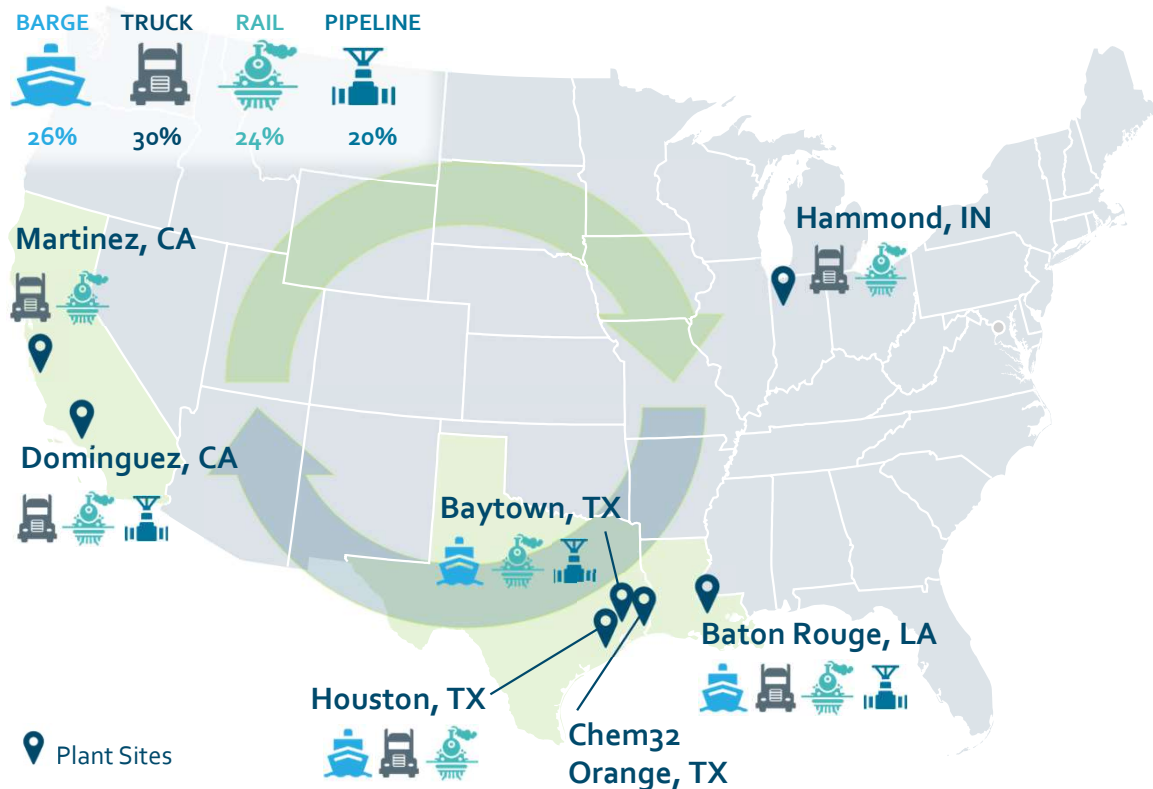
2. Totals include corporate costs

* Rounding discrepancies may arise when rounding results from dollars (in thousands) to dollars (in millions)

Ecoservices: North American Leader in Sulfuric Acid Recycling and Related Services with Key Competitive Position in Gulf Coast and California

ANTICIPATED NEAR-TERM GROWTH FACTORS

- Existing customer re-contracting, and favorable alkylate fundamentals expected to drive growth for regeneration services
- Rising virgin acid consumption for electrification and green infrastructure enabling materials mining
- Increasing demand for sustainable waste solutions from industrials benefitting Treatment Services
- Accelerating off site Catalyst Activation demand from renewable fuels producers and traditional refineries



UNRIVALED SUPPLY INFRASTRUCTURE

- Managing end to end supply chain & customer inventories
- Production redundancy in key refining locations enables the highest degree of reliability

FAVORABLE CUSTOMER POSITIONS

- Long-term contracts with cost pass-through
- Typically, 100% of supply for customer sites
- Take-or-pay and capacity reservation fees

Catalyst Technologies: Global Leader in Tailored Catalyst Solutions

ANTICIPATED NEAR-TERM GROWTH FACTORS

- Preferred technology and increasing product offerings for strengthening & light weighting of materials projected to drive growth in polyethylene catalysts
- Growing demand for renewable fuels
- Increasing regulation driving reduction in vehicle emissions
- New product launches supporting the ongoing product development and collaboration with customers



FLEXIBLE MANUFACTURING NETWORK

- Improved manufacturing network efficiencies
- Continued debottlenecking production capacity for sold out product lines

FAVORABLE CUSTOMER POSITIONS

- Believe growing faster than market with existing polyethylene customers
- Strong growth in custom catalysts; diversified across multiple chemical processes
- Collaborating on multiple product development projects for new offerings in renewable fuels and materials and recycling of polymers

Quarterly Segment Sales, Adjusted EBITDA and Margins



	Three Months Ended	Three Months Ended
(\$ in millions, except %)	March 31, 2023	March 31, 2022
Sales:		
Ecoservices	137.8	154.0
Silica Catalysts	23.1	25.7
Total sales	160.9	179.7
Zeolyst Joint Venture sales	22.1	29.0
Adjusted EBITDA:		
Ecoservices	36.8	49.3
Catalyst Technologies	13.0	17.0
Unallocated corporate expenses	(6.9)	(7.1)
Total Adjusted EBITDA	42.9	59.2
Adjusted EBITDA Margin¹:		
Ecoservices	26.7%	32.0%
Catalyst Technologies	28.8%	31.1%
Total Adjusted EBITDA Margin^{1,2}	23.4%	28.4%

1. See Appendix for Reconciliations of non-GAAP measures.

2. Totals include corporate costs

* Rounding discrepancies may arise when rounding results from dollars (in thousands) to dollars (in millions)

Sales and Adjusted EBITDA Major Change Factors

Sales

Sales (in \$ millions and %)	Three Months Ended March 31, 2023					
	Ecovyst		Ecoservices		Silica Catalysts	
Sales:	\$	%	\$	%	\$	%
Volume	(30.0)	(16.7)	(26.4)	(17.1)	(3.6)	(14.0)
Price/Mix	12.1	6.7	10.2	6.6	1.9	7.4
Currency	(0.9)	(0.5)	—	—	(0.9)	(3.5)
Sales Change	(18.8)	(10.5)	(16.2)	(10.5)	(2.6)	(10.1)

Adjusted EBITDA

Adj. EBITDA (in \$ millions and %)	Three Months Ended March 31, 2023					
	Ecovyst		Ecoservices		Catalyst Technologies	
Adj EBITDA:	\$	%	\$	%	\$	%
Volume/Mix	(19.3)	(32.6)	(12.1)	(24.5)	(7.2)	(42.4)
Price	12.3	20.8	10.2	20.7	2.1	12.4
Variable Cost	(4.4)	(7.4)	(3.6)	(7.3)	(0.8)	(4.7)
Currency	(0.2)	(0.3)	0.0	—	(0.2)	(1.2)
Other	(4.8)	(8.1)	(7.0)	(14.2)	2.1	12.4
Adj EBITDA Change	(16.4)	(27.5)	(12.5)	(25.4)	(4.0)	(23.5)

Reconciliation of Net (Loss) Income to Adjusted EBITDA



(\$ in millions, except %)	Three Months Ended	LTM	Year Ended			
	March 31, 2023	March 31, 2023	December 31, 2022	December 31, 2021	December 31, 2020	December 31, 2019
Reconciliation of net (loss) income to Adjusted EBITDA						
Net (loss) income	(1.5)	60.4	69.8	1.8	54.3	31.1
Provision for income taxes	0.9	20.1	24.9	12.1	(52.1)	12.3
Interest expense, net	9.9	38.6	37.2	37.0	50.4	66.9
Depreciation and amortization	20.2	79.9	79.2	79.7	76.9	74.8
EBITDA	29.5	199.0	211.1	130.6	129.5	185.1
Joint venture depreciation, amortization and interest(a)	3.6	15.5	16.0	15.6	14.7	14.7
Amortization of investment in affiliate step-up(b)	1.6	6.4	6.4	6.5	6.6	7.5
Debt extinguishment costs	—	—	—	26.9	25.0	3.4
Net loss on asset disposals(c)	1.2	4.7	3.6	5.7	4.7	4.6
Foreign currency exchange (gain) loss(d)	(0.7)	0.1	1.4	4.7	(5.3)	1.2
LIFO expense (benefit)(e)	1.4	1.0	(0.2)	(1.9)	(5.3)	6.5
Transaction and other related costs(f)	1.4	4.1	7.0	2.0	1.1	0.2
Equity-based compensation	4.1	17.4	20.6	31.8	17.2	13.3
Restructuring, integration and business optimization expenses(g)	1.0	12.2	11.6	3.0	2.0	2.6
Other(h)	(0.2)	0.1	(0.7)	2.7	2.4	1.0
Adjusted EBITDA¹	42.9	260.5	276.8	227.6	192.6	240.1



1. For additional information with respect to each adjustment, see Description of "Reconciliation of Non-GAAP Financial Measures"

* Rounding discrepancies may arise when rounding results from dollars (in thousands) to dollars (in millions)

Reconciliation of Net (Loss) Income to Adjusted EBITDA

	Three Months Ended	LTM	Three Months Ended				Twelve Months Ended
(\$ in millions, except %)	March 31, 2023	March 31, 2023	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022	December 31, 2022
Reconciliation of net (loss) income to Adjusted EBITDA							
Net (loss) income	(1.5)	60.4	7.9	19.2	21.3	21.5	69.8
Provision for income taxes	0.9	20.1	5.7	7.3	9.0	2.9	24.9
Interest expense, net	9.9	38.6	8.5	8.9	9.5	10.3	37.2
Depreciation and amortization	20.2	79.9	19.5	19.7	19.6	20.4	79.2
EBITDA	29.5	199.0	41.6	55.1	59.4	55.1	211.1
Joint venture depreciation, amortization and interest(a)	3.6	15.5	4.1	4.0	3.9	4.0	16.0
Amortization of investment in affiliate step-up(b)	1.6	6.4	1.6	1.6	1.6	1.6	6.4
Net loss on asset disposals(c)	1.2	4.7	0.1	0.6	0.5	2.4	3.6
Foreign currency exchange (gain) loss(d)	(0.7)	0.1	0.6	0.5	1.0	(0.8)	1.4
LIFO expense (benefit)(e)	1.4	1.0	0.2	0.2	(0.4)	(0.2)	(0.2)
Transaction and other related costs(f)	1.4	4.1	4.3	0.8	1.8	0.1	7.0
Equity-based compensation	4.1	17.4	7.3	5.4	4.7	3.2	20.6
Restructuring, integration and business optimization expenses(g)	1.0	12.2	0.4	4.7	1.3	5.2	11.6
Other(h)	(0.2)	0.1	(1.0)	—	1.6	(1.4)	(0.7)
Adjusted EBITDA¹	42.9	260.5	59.2	72.9	75.4	69.2	276.8
EBITDA Adjustments by Line Item							
EBITDA	29.5	199.0	41.6	55.1	59.4	55.1	211.1
Cost of goods sold	0.6	(2.1)	(0.6)	(0.6)	(1.2)	(0.9)	(3.3)
Selling, general and administrative expenses	4.1	17.4	7.5	5.4	4.7	3.2	20.8
Other operating expense, net	4.1	23.3	4.9	7.0	5.0	7.2	24.1
Equity in net (income) from affiliated companies	1.6	6.4	1.6	1.6	1.6	1.6	6.4
Other expense, net ²	(0.6)	1.0	0.1	0.4	2.0	(1.0)	1.7
Joint venture depreciation, amortization and interest(a)	3.6	15.5	4.1	4.0	3.9	4.0	16.0
Adjusted EBITDA	42.9	260.5	59.2	72.9	75.4	69.2	276.8



1. For additional information with respect to each adjustment, see Description of "Reconciliation of Non-GAAP Financial Measures"

2. Other expense (income), net includes debt extinguishment costs

* Rounding discrepancies may arise when rounding results from dollars (in thousands) to dollars (in millions)

Descriptions for reconciliation of Non-GAAP financial measures



- a. We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalyst Technologies 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. 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 fixed assets and intangible assets, including customer relationships and technical know-how.
- c. 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.
- d. Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income related to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.
- e. 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.
- f. Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.
- g. Includes the impact of restructuring, integration and business optimization expenses, which are incremental costs that are not representative of our ongoing business operations.
- h. Other consists of adjustments for items that are not core to our ongoing business operations. These adjustments include environmental remediation and other legal costs, expenses for capital and franchise taxes, and defined benefit pension and postretirement plan (benefits) costs, for which our obligations are under plans that are frozen. Also included in this amount are adjustments to eliminate the benefit realized in cost of goods sold of the allocation of a portion of the contract manufacturing payments under the five-year agreement with the buyer of the Performance Chemicals business to the financing obligation under the failed sale-leaseback. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Adjusted Free Cash Flow



(\$ in millions)	Full Year 2022 ¹	Three months ended March 31, 2023
Cash flow from Operations before interest and tax	247.5	19.4
Less: Cash paid for taxes	25.6	0.1
Less: Cash paid for interest ²	35.4	15.2
Cash Flow from Operations	186.6	4.1
Less: Purchases of property, plant and equipment ³	58.9	18.7
Free Cash Flow	127.7	(14.6)
Plus: Cash paid for costs related to segment disposals	18.1	—
Adjusted Free Cash Flow	145.8	(14.6)

1. Includes proportionate shares of cash generation from discontinued operations for the period presented.
2. Excludes net interest proceeds on swaps designated as net investment hedges
3. Excludes the Company's proportionate 50% share of capital expenditures from the Zeolyst Joint Venture
- * Rounding discrepancies may arise when rounding results from dollars (in thousands) to dollars (in millions)

Cash Conversion, Liquidity, Leverage

Cash Conversion

(\$ in millions, except %)	2019	2020	2021	2022	TTM Q1 2023
Adjusted EBITDA	240.1	192.6	227.6	276.8	260.5
Less: Capex ¹	70.3	54.5	66.4	59.5	64.7
Cash Conversion	169.9	138.1	161.2	217.5	195.8
Cash Conversion %²	71%	72%	71%	79%	75%

Liquidity

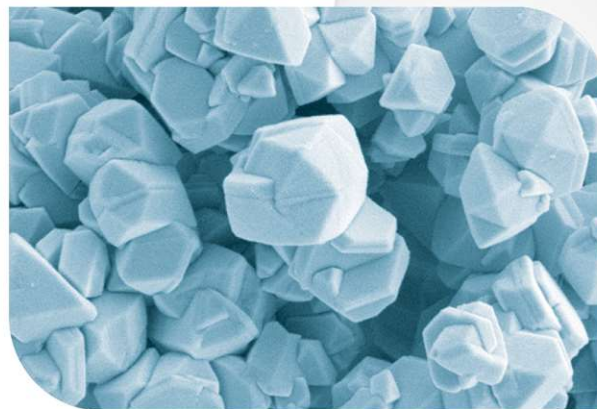
(\$ in millions)	Q1 2022	Q2 2022	Q3 2022	Q4 2022	TTM Q1 2023
Cash and cash equivalents	129.7	151.2	121.4	110.9	61.6
Availability on revolving ABL facility	76.8	84.8	77.6	59.7	57.3
Liquidity³	206.5	236.0	199.0	170.6	118.9

Leverage Ratio

(\$ in millions, except ratio)	Q1 2022	Q2 2022	Q3 2022	Q4 2022	TTM Q1 2023
Total debt	893.3	891.0	888.8	886.4	884.3
Less: Cash and cash equivalents	129.7	151.2	121.4	110.9	61.6
Net debt	763.6	739.8	767.4	775.5	822.7
Net income	12.4	39.5	56.2	69.8	59.9
Adjusted EBITDA	244.5	264.7	270.7	276.8	260.5
Net Debt to Net Income Ratio	61.6x	18.7x	13.7x	11.1x	13.7x
Net Debt Leverage Ratio	3.1x	2.8x	2.8x	2.8x	3.2x



1. Capex for cash conversion includes 50% of spend for the Zeolyst joint venture
2. Cash Conversion % = (Adjusted EBITDA-Capex)/(Adjusted EBITDA)
3. Liquidity = Cash and cash equivalents + Availability on revolving ABL facility



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