



**RBC Capital Markets
2019 Chemicals Investor Day**

New York, NY
March 27, 2019



Forward-Looking Statements

This presentation includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements relate to analyses and other information that are based on management's beliefs, certain assumptions made by management, forecasts of future results, and current expectations, estimates and projections about the markets and economy in which we and our various segments operate. The statements contained in this presentation that are not statements of historical fact may include forward-looking statements that involve a number of risks and uncertainties.

We use the words "anticipate," "intend," "may," "expect," "believe," "should," "plan," "project," "estimate," "forecast," "optimistic," and variations of such words and similar expressions in this presentation to identify such forward-looking statements. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control. Therefore, actual outcomes and results may differ materially from those matters expressed or implied in such forward-looking statements. All references to expectations and other forward-looking statements are based on expectations at February 4, 2019. Olin undertakes no obligation to update publicly any forward-looking statements, whether as a result of future events, new information or otherwise.

Factors that could cause or contribute to such differences include, but are not limited to: our sensitivity to economic, business and market conditions in the U.S. and overseas; the cyclical nature of our operating results and the supply/demand balance for our products; our reliance on a limited number of suppliers for specified feedstock and services, including third-party transportation services; higher-than-expected raw material and energy, transportation, and/or logistics costs; failure to control costs or to achieve targeted cost reductions; new regulations or public policy changes regarding the transportation of hazardous chemicals and the security of chemical manufacturing facilities; the occurrence of unexpected manufacturing interruptions and outages; complications resulting from our multiple enterprise resource planning systems and the conversion to one system; the failure or an interruption of our information technology systems; changes in, or failure to comply with, legislation or government regulations or policies; economic and industry downturns; declines in global equity markets and interest rates impacting pension plan asset values and liabilities; unfavorable or unexpected changes to our international operations; unexpected litigation outcomes and environmental investigation and remediation costs; the failure to attract, retain and motivate key employees; our substantial amount of indebtedness and debt service obligations; asset impairment charges resulting from the failure to realize our long range plan assumptions; adverse conditions in the credit and capital markets; and the other risks detailed in Olin's Form 10-K for the fiscal year ended December 31, 2018. All of the Forward-Looking statements should be considered in light of these factors. In addition, other risks and uncertainties not presently known to Olin or that Olin considers immaterial could affect the accuracy of our forward-looking statements. The reader is cautioned not to rely unduly on these Forward-Looking statements.

Non-GAAP Financial Measures

In addition to U.S. GAAP financial measures, this presentation includes certain non-GAAP financial measures including EBITDA, and Adjusted EBITDA. These non-GAAP measures are in addition to, not a substitute for or superior to, measures for financial performance prepared in accordance with U.S. GAAP. Definitions of these measures and reconciliation of GAAP to non-GAAP measures are provided in the appendix to this presentation.



Successful 2018 driven by solid performance across chemical businesses

No. 1

The World's Chlor Alkali Leader

2018 Adjusted EBITDA*
(in millions)

\$1,265

2018 Free Cash Flow*
(in millions)

\$587

*Refer to GAAP to non-GAAP reconciliations



Structural changes in chlor alkali segment leading to value creation from long-term growth opportunities

Structural changes in chlor alkali sector provides growth opportunities on both sides of ECU (chlorine and caustic soda)



Minimal global capacity additions and announcements to meet growing demand



Large proportion of production by large, integrated producers after major industry consolidation



Energy and ethylene cost advantage for U.S. Gulf Coast producers over global competitors



Increased caustic soda and chlorine derivative exports from the U.S. Gulf Coast



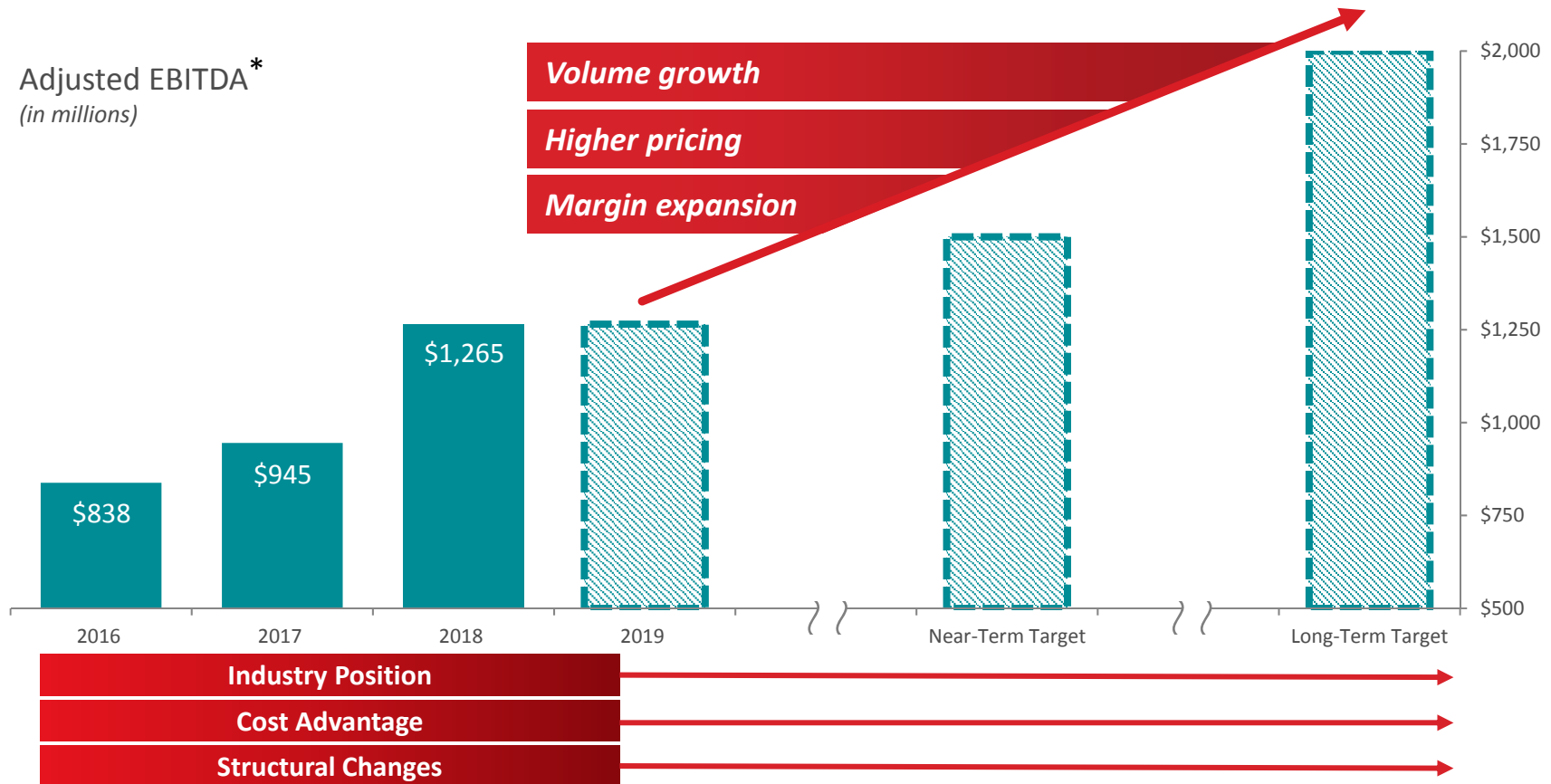
Current industry economics do not support significant near term world-scale chlor alkali capacity investments





Expect robust earnings expansion driven by industry leading position, advantaged cost structure and structural changes

Adjusted EBITDA*
(in millions)



*Refer to GAAP to non-GAAP reconciliations



Un-matched global chlor alkali portfolio to benefit from healthy demand growth forecasted on both sides of ECU

Largest, low cost global chlor alkali producer:

- #1 chlor alkali producer
- #1 merchant EDC supplier
- #1 chlorinated organics position
- #1 epoxy position
- #1 North American bleach producer
- #1 merchant chlorine supplier



Structural changes underway, driving growth opportunities on both sides of the ECU for Olin



Seven North American facilities and broadest portfolio of chlorine derivatives with 19 outlets

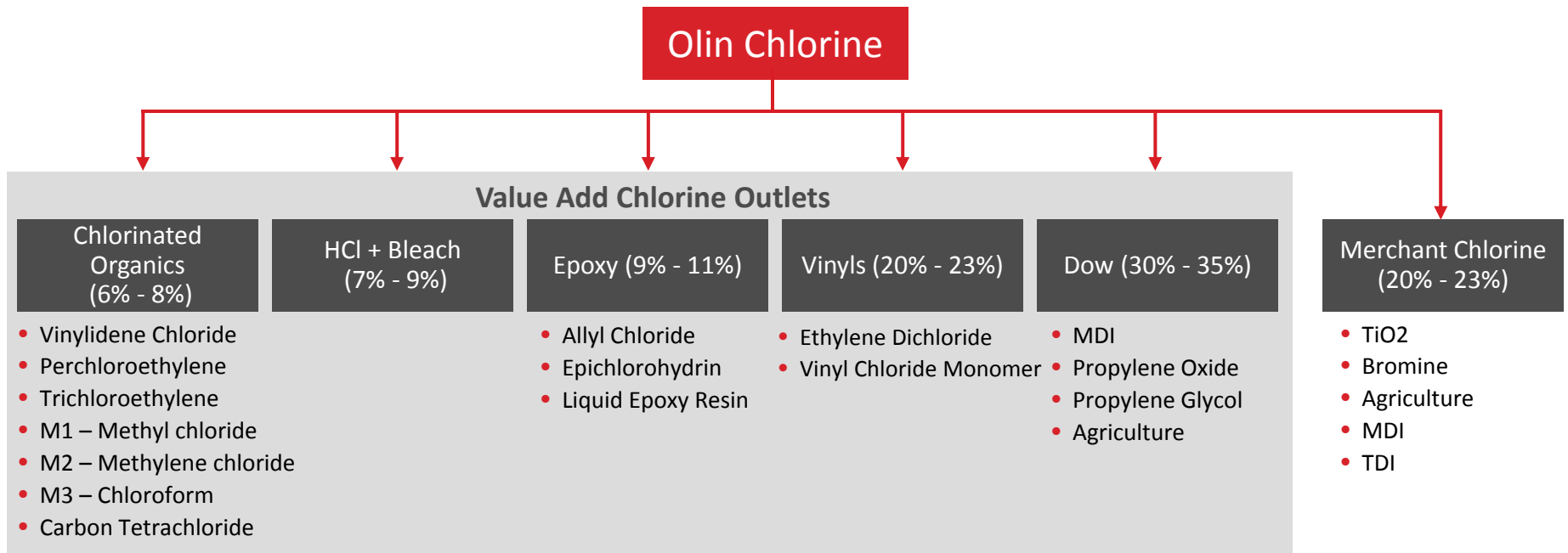


Well-positioned for chlorine derivative and caustic soda growth in the near, intermediate and long term





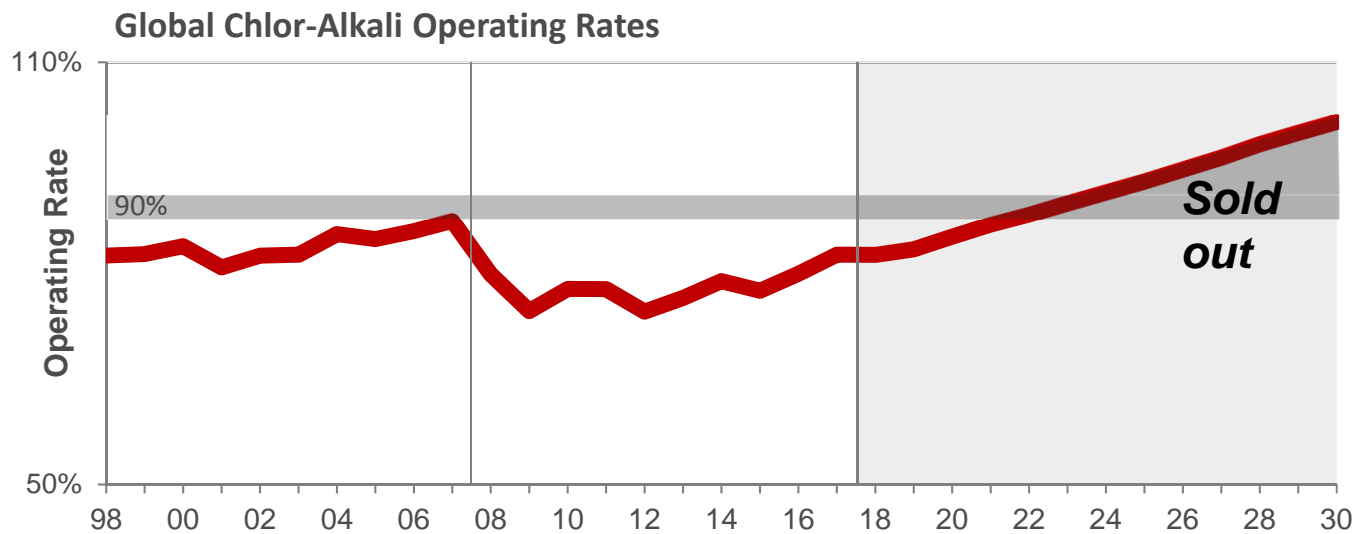
Strong platform with wide array of chlorine outlets well-positioned to capture future growth from chlorine envelope



- Highly focused on unlocking additional value of each derivative and higher return opportunities
- Unique combination of global and regional plants with leading world-scale footprint on the U.S. Gulf Coast



Global operating rates have improved and IHS Markit projects sold out conditions by 2023



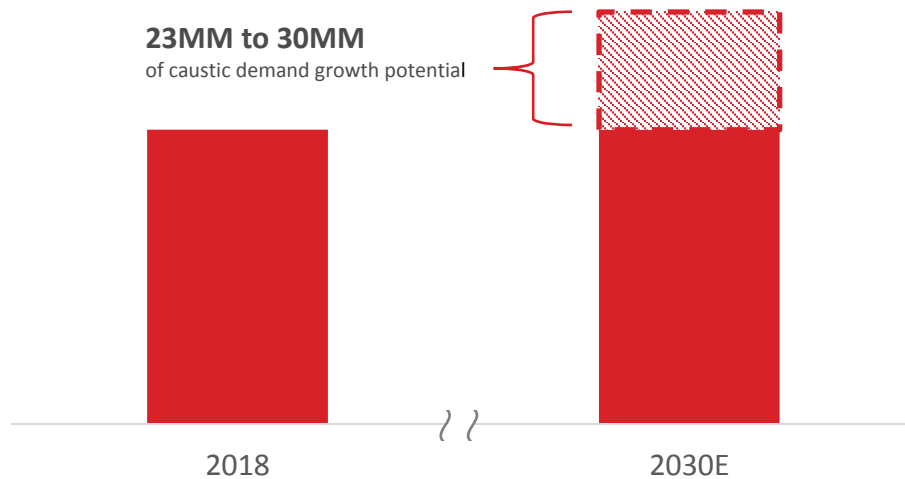
- Chlorine demand is forecast to increase by 21 million metric tons between 2018 and 2030
- Caustic soda demand is forecast to increase by 23 million metric tons over the same time period
- The outlook for chlorine and caustic soda is improving and will require investment
- Current pricing does not justify investment in world-scale facilities

Source: IHS Markit



Global supply and demand expected to tighten through 2030

Global Caustic Soda Demand (in dry metric tons)



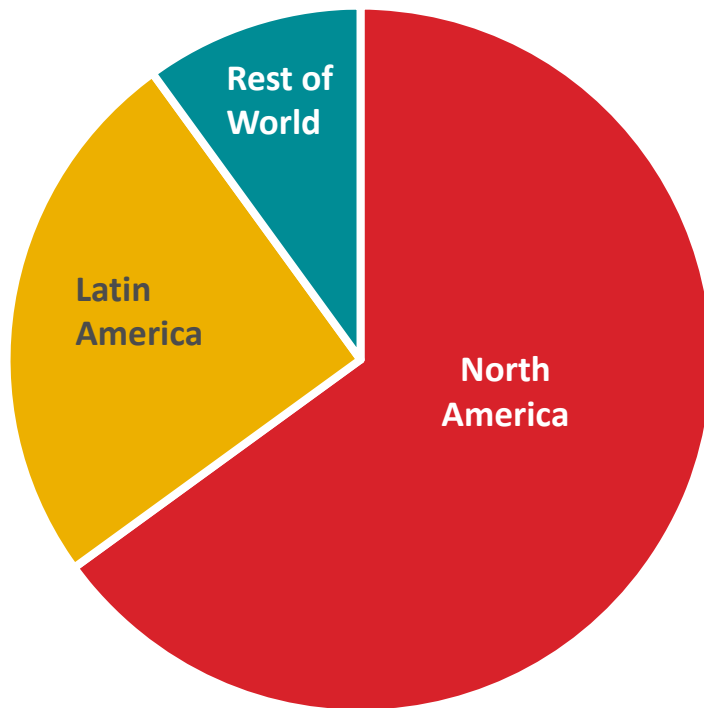
- Steady demand growth tied to consumables, population, and disposable income
 - e.g.: Transportation, food packaging, shipping boxes, soap, textiles, diapers
- Demand growth as high as 30MM dry metric tons using 20-year historical growth rate vs. 2%
- Higher caustic soda demand growth vs. chlorine will drive caustic soda prices to incentivize new supply

Security of supply will become a key priority as caustic soda demand exceeds current capacity



Leading supplier of caustic soda with opportunities to grow customer direct business

Olin Merchant Caustic Sales by Region
(as a percentage of sales)



- Largest global membrane grade producer
- Largest direct supply network in North America
- Strategic supplier to key North American regions and segments:
 - Pulp and paper across Southeast
 - Chemical and general manufacturing in Midwest and Mid-Atlantic
 - Eastern Canada
- U.S. Gulf Coast membrane and diaphragm export capabilities to the rest of the world
- Largest in-region supply network in Latin America



Leading Epoxy position enhancing the chlorine portfolio

Epoxy is a critical component of chlorine envelope, consuming 10% of total Olin chlorine produced



Poised to capitalize on improving global supply and demand fundamentals



Largest, most integrated low-cost producer with global reach



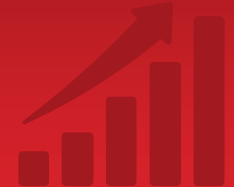
Significant caustic soda liberator



Increased emphasis on “selling up” to improve margin capture

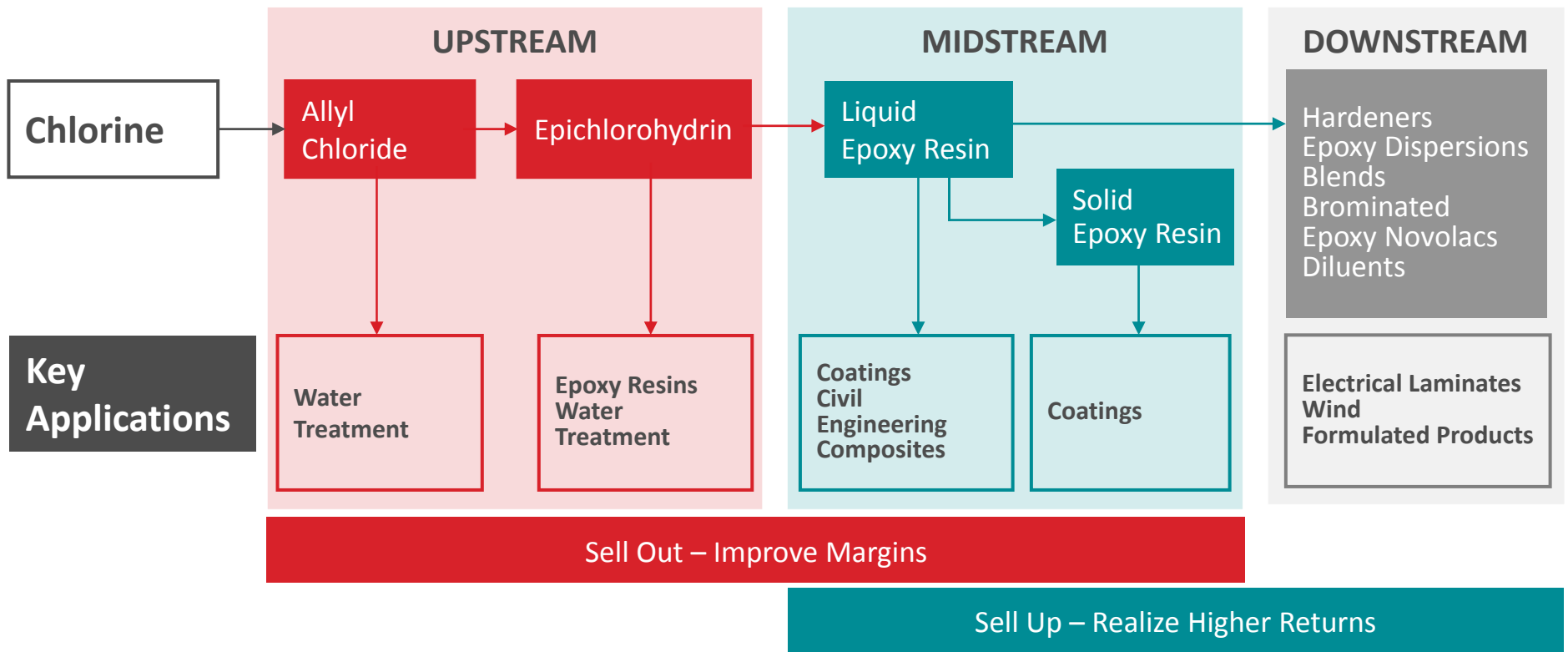


Well-positioned to add low-cost capacity across the epoxy value chain



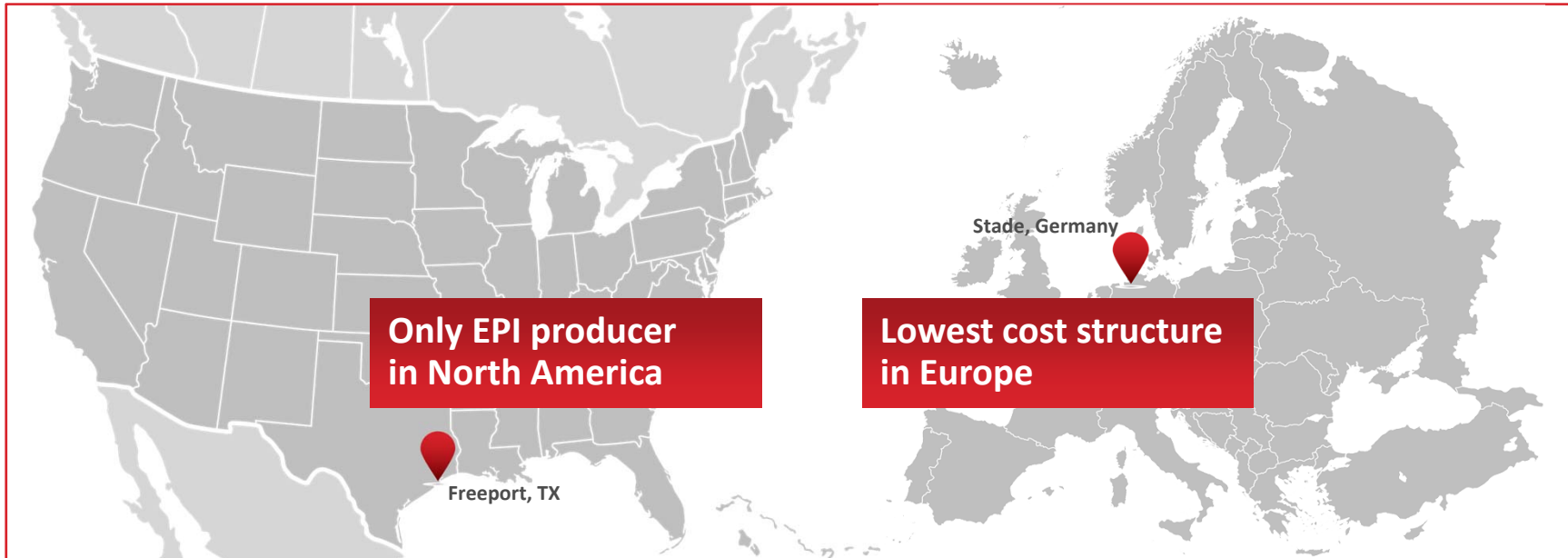


Chlorine plays a key role and provides opportunities to drive increasing returns as it moves further down the value chain





Epoxy portfolio is positioned at the low-end of the industry cost curve



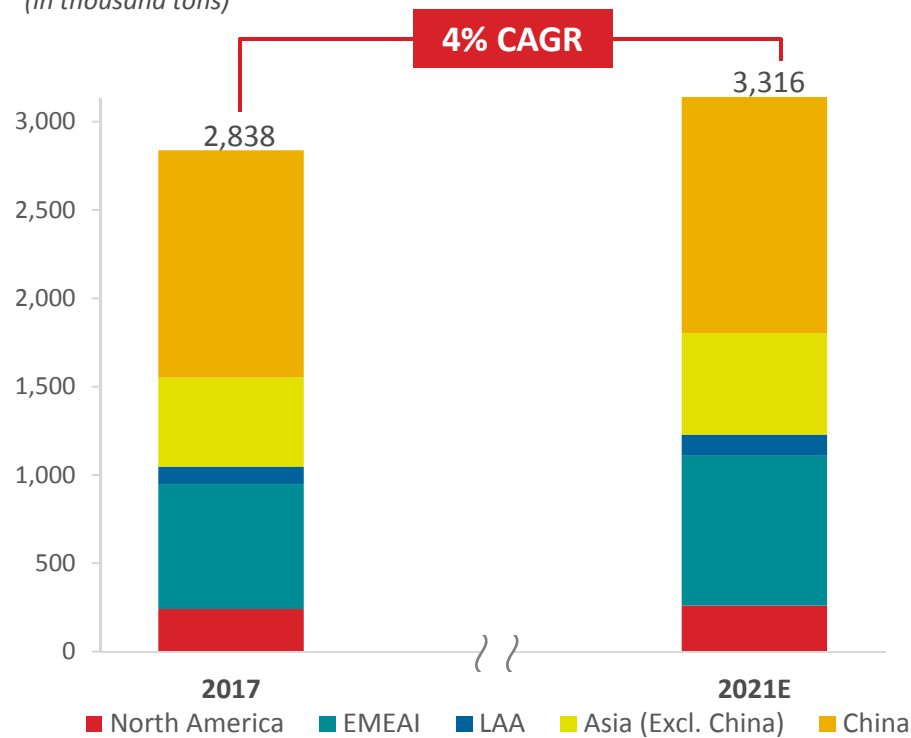
- Olin has low capital cost opportunities to expand
- Freeport, Texas site is the lowest cost producer of EPI and LER in North America and globally
- Stade, Germany site is the lowest cost producer of EPI and LER in Europe

Source: Roland Berger



Global capabilities provide opportunities for growth

Global Epoxy Resin Consumption
(in thousand tons)



Source: IHS Markit

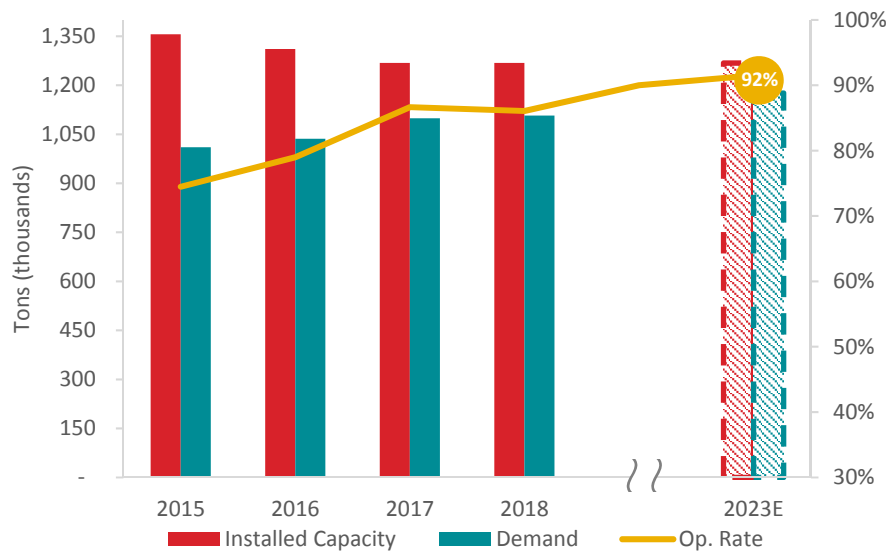
Olin Participation:

- North American assets are leveraged for growth
- European asset has advantaged cost position along with flexibility and scale to sell globally
- Europe growth focused on midstream and downstream businesses
- Asia key for downstream growth, particularly wind and laminates

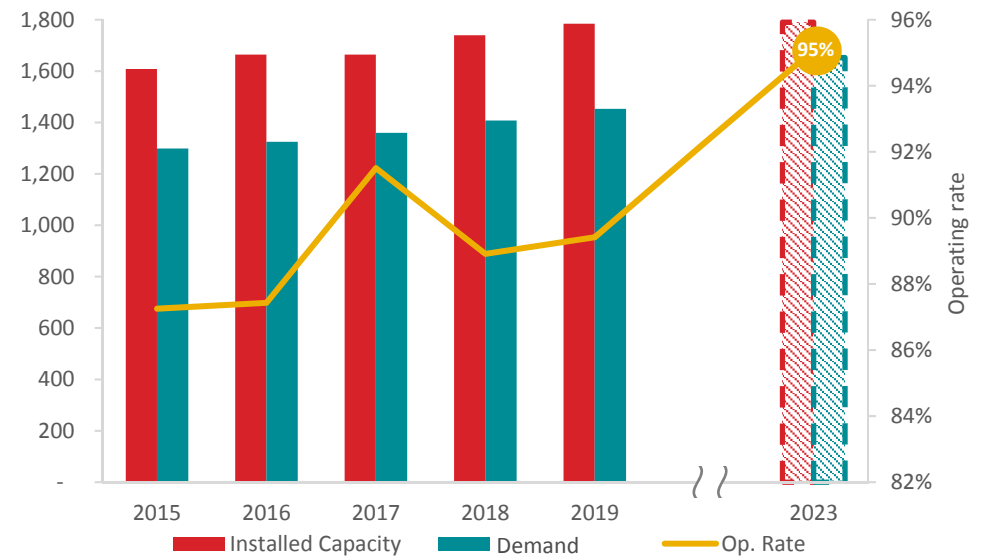


EPI and LER supply and demand projected to be tight by 2021 (excluding China)

Global EPI Supply and Demand (excluding China)



Global LER Supply and Demand (excluding China)



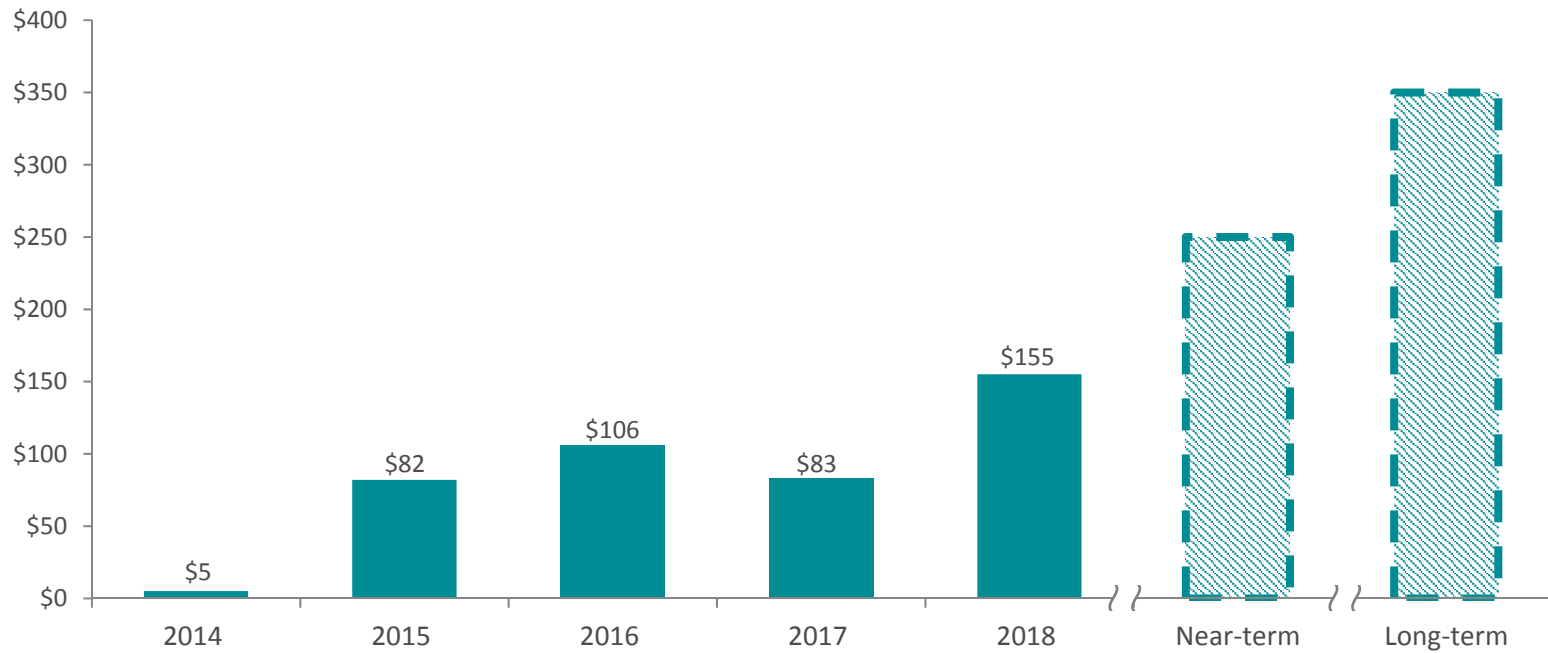
- Current operating rates (excluding China) leave limited room for supply growth
- High-cost EPI and BPA act as deterrent to capacity additions for non-integrated producers
- Near term, Olin has ability to grow EPI and LER capacity through low cost debottlenecking
- Longer-term, Olin has optionality for brownfield investment in EPI and LER capacity

Source: Roland Berger



Expect continued improvement in Epoxy segment earnings over the longer term as industry fundamentals continue to strengthen

Adjusted EBITDA*
(in millions)

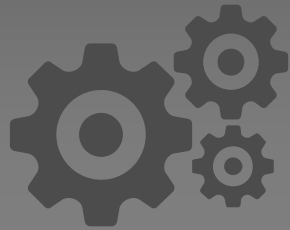


*Refer to GAAP to non-GAAP reconciliations



Winchester Ammunition is the leading supplier of high-quality, small-caliber ammunition

Competitive product position supported by the leading Winchester brand



Advantaged cost structure with a continued focus on improving our cost position

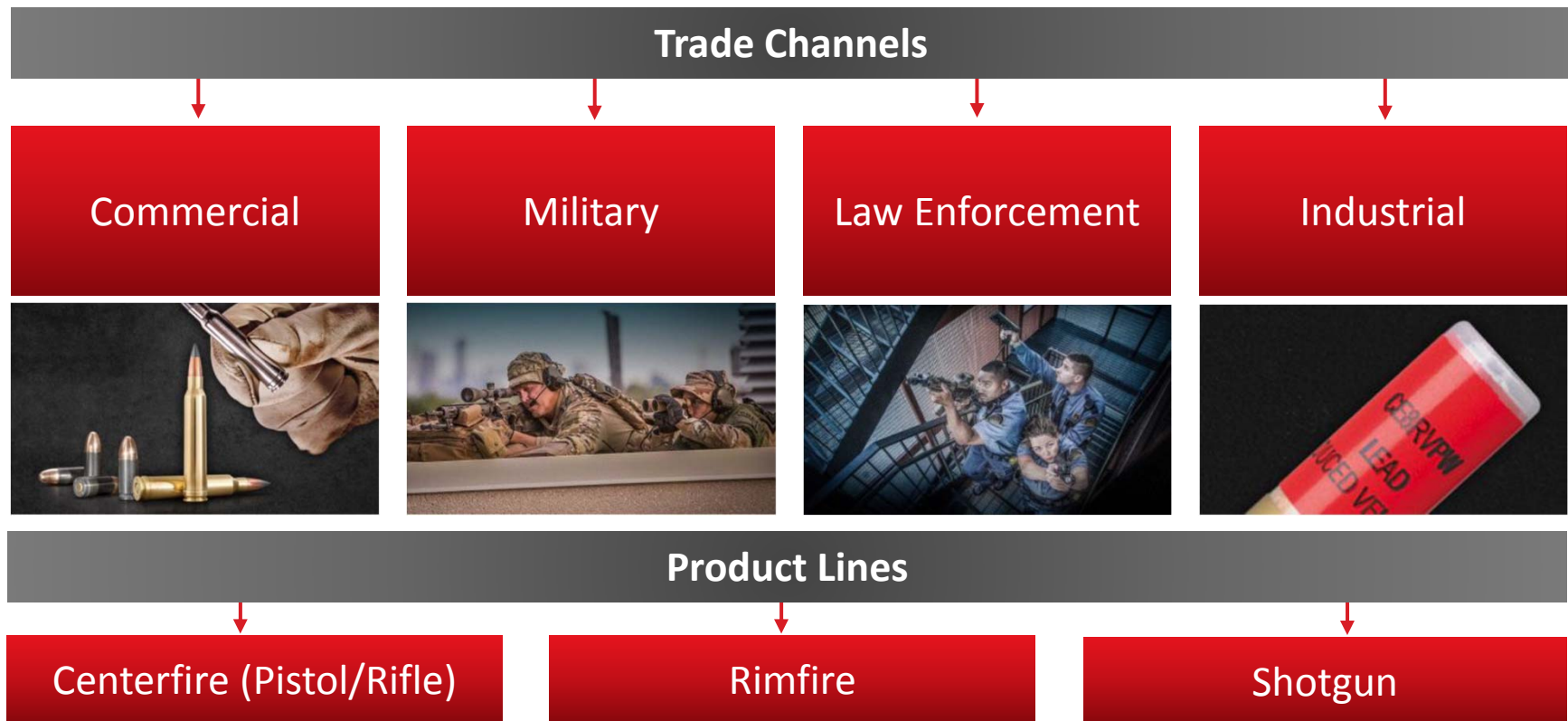


Modest capex requirement with a strong cash conversion rate





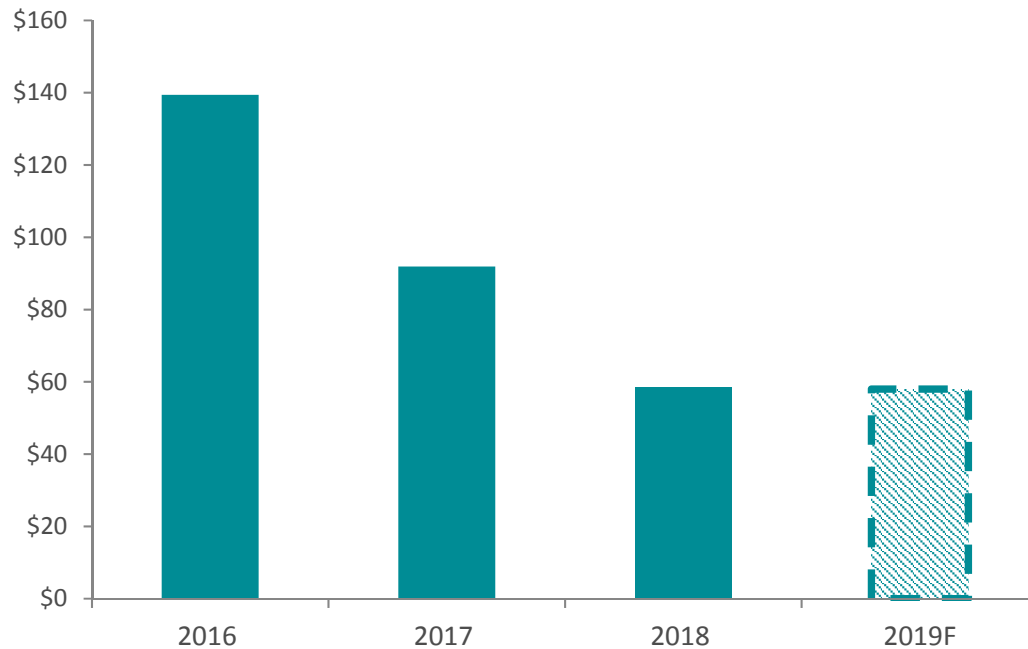
Winchester has a diversified customer base and product composition





Expect full year 2019 Winchester results to be similar to full year 2018 levels

Adjusted EBITDA*
(in millions)



- Believe ammunition usage at the consumer level has remained steady as consumers continue to work down high inventory stockpiles built over the last several years
- Large portion of Winchester's 2019 expected military and other government sales are already under contract

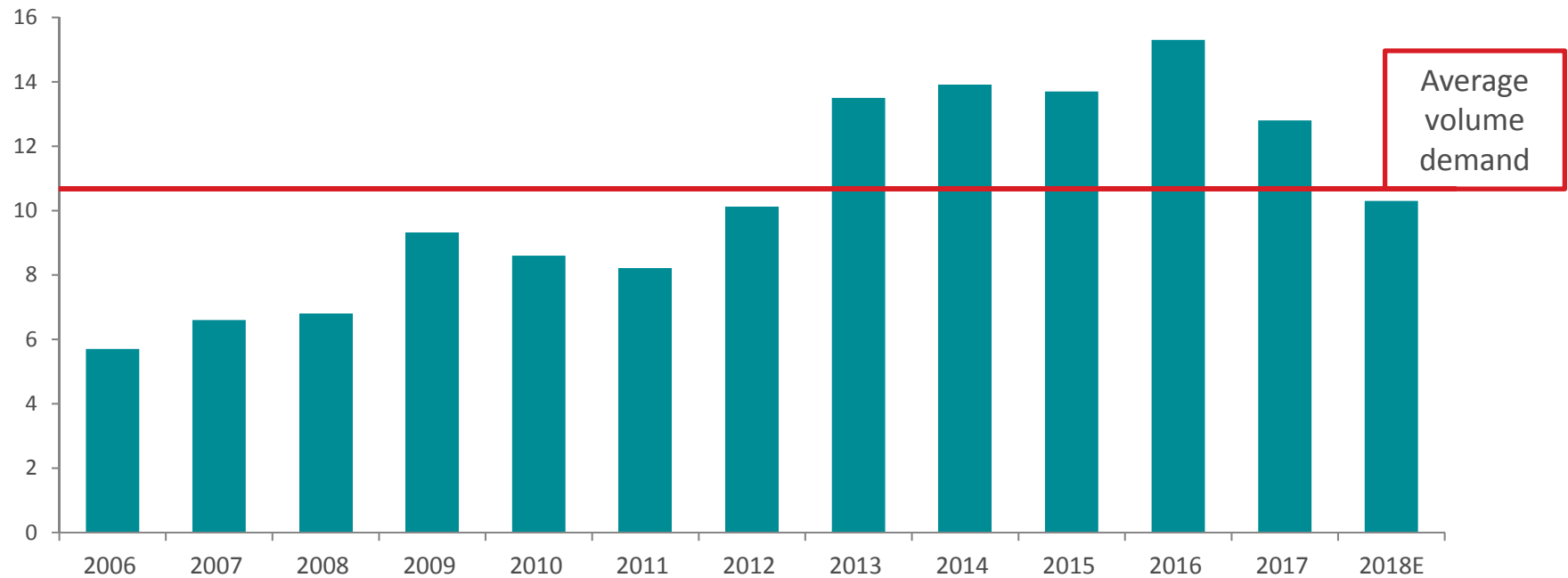
*Refer to GAAP to non-GAAP reconciliations
Note: 2019 forecast as of 2/4/2019



Consumers continue to work through high inventory levels built over the last several years

U.S. Ammunition Demand

(total domestic commercial unit volume*, in billion units)



* Volume estimated on the NSSF Trade Statistics Program's Manufacturer Surveys,

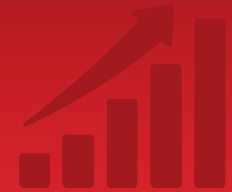


Solid foundation and improving financial outlook

Significant financial improvement
over the past three years



Strong outlook for long-term
earnings expansion



Expected increase in levels of
cash flow going forward



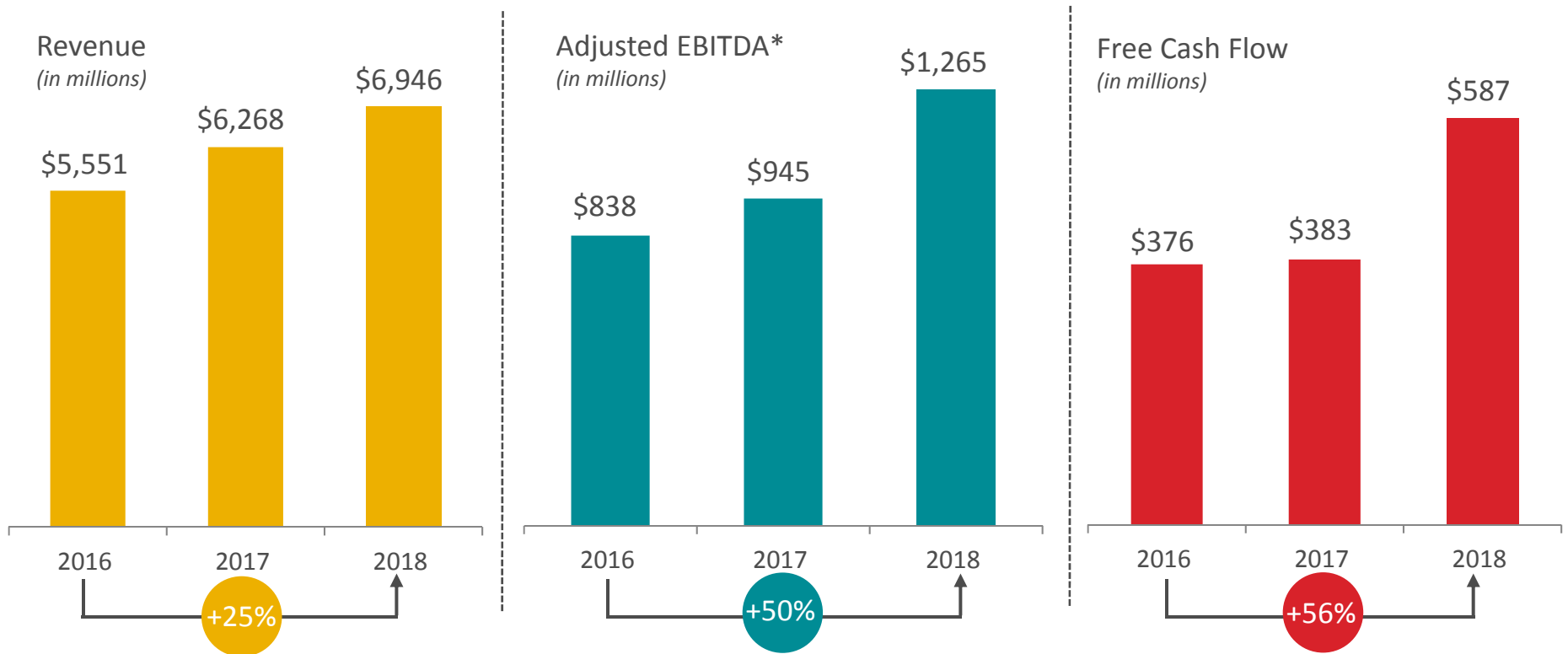
Balanced and disciplined
approach to capital allocation

- Strategically invest in our businesses
- Deleverage the balance sheet
- Return cash to shareholders





Financial results have improved significantly over last three years

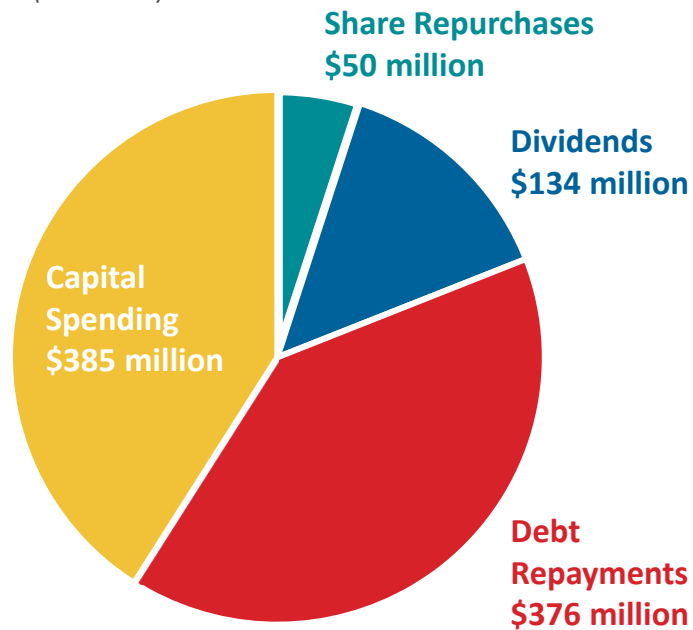


*Refer to GAAP to non-GAAP reconciliations



Prudent and consistent approach to capital allocation

Capital Allocation 2018
(in millions)

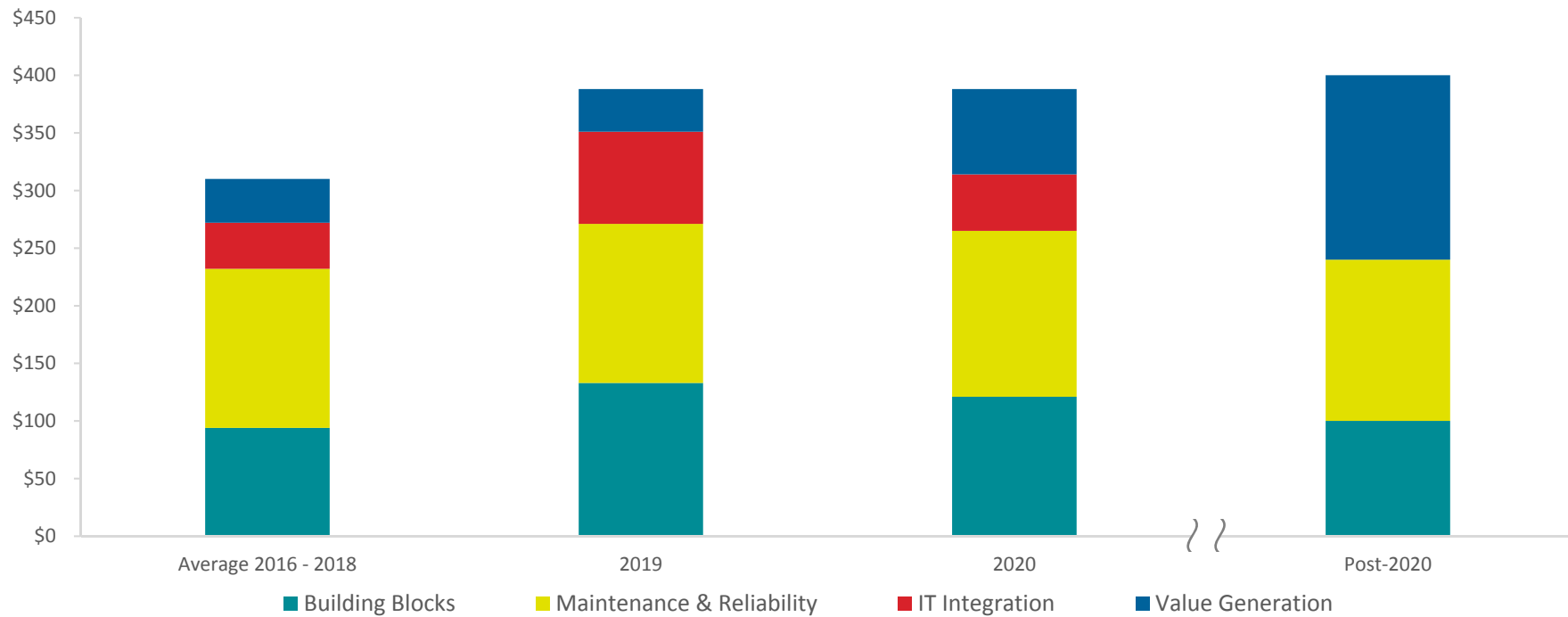


- Capital investment
 - Sustain and enhance businesses
 - Long-term cost-based ethylene supply contracts
 - Organic growth projects
- Optimizing balance sheet
 - Commitment to conservative financial policies
 - Manageable towers of debt with staggered maturities
 - Focus on operating with investment grade metrics
 - Major refinancing opportunity in 2020
- Return cash to shareholders
 - Over 92 years of uninterrupted quarterly dividends
 - Opportunistic share repurchase program



Long-term capital spending plan increasingly focused on growth opportunities within existing asset base, while maintaining high levels of asset reliability

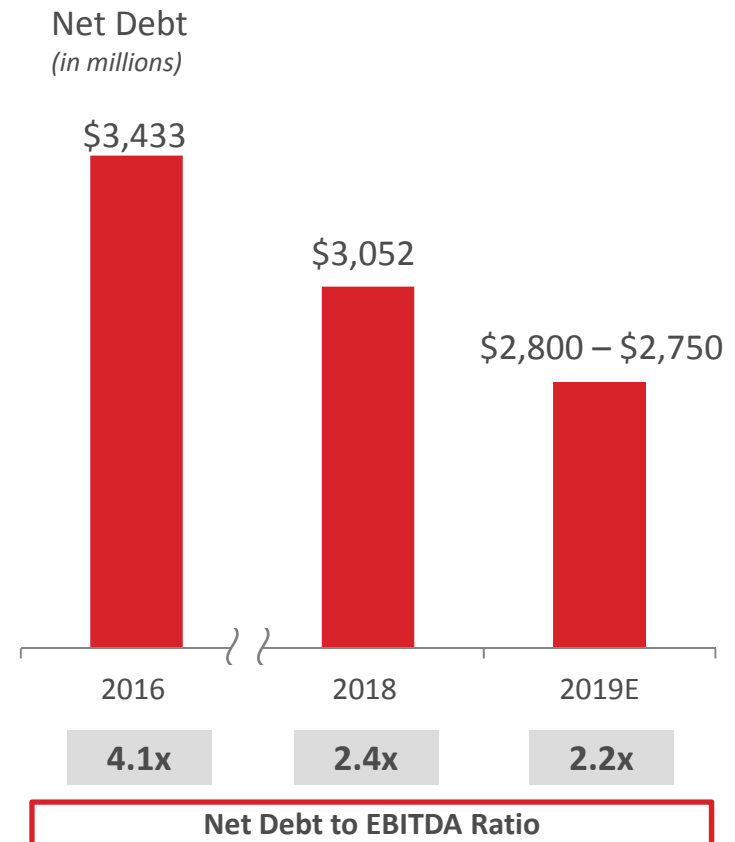
Chemical Spending Plan
(in millions)





Balance sheet optimization underway

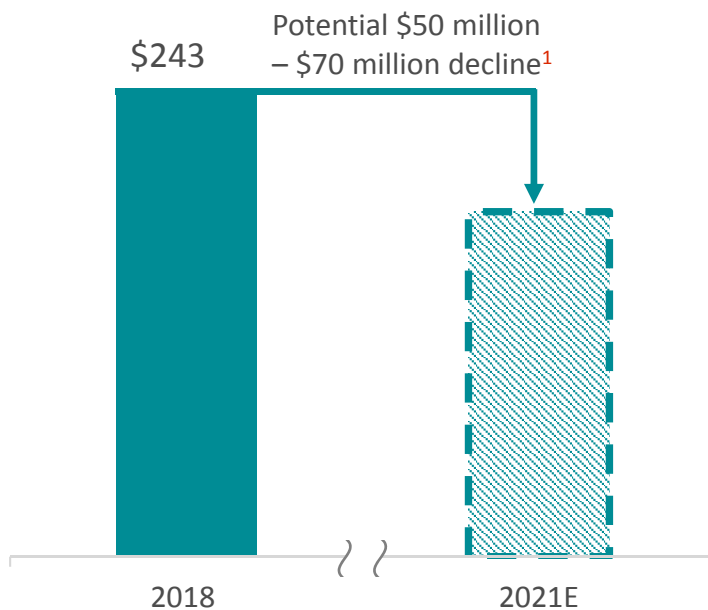
- Refinancing in 2017 and 2018 lowered debt towers and extended maturities to 2030
- Repaid \$440 million of debt since the acquisition
- Expecting to prepay \$250 million to \$300 million of debt in 2019
- Focus on operating with investment grade metrics





Significant interest expense savings expected through refinancing acquisition-related bonds

Total Annual Interest Expense
(in millions)



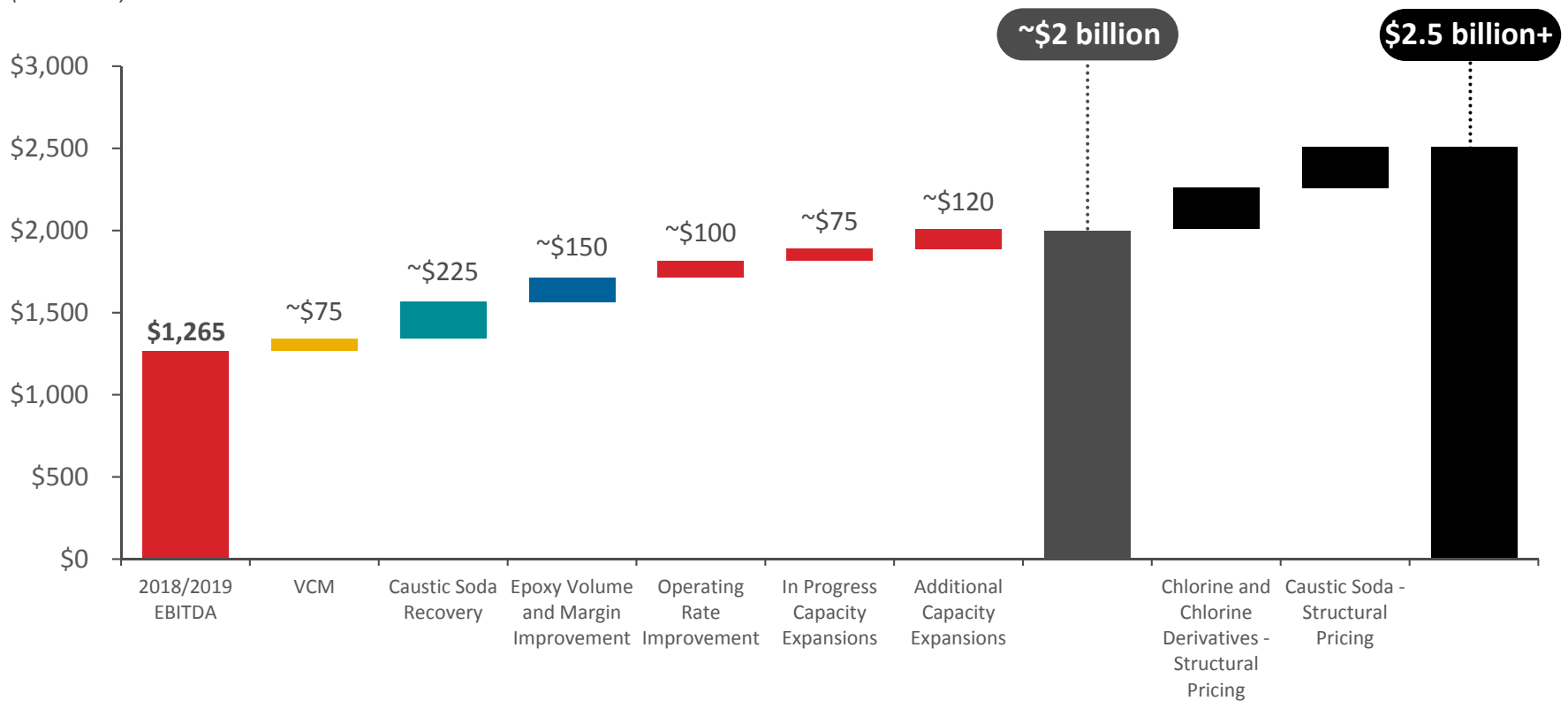
¹Based on current interest rates

- Expect to call \$1.2 billion of 10.00% and 9.75% bonds issued for Dow debt exchange in October 2020
- Interest expense should decline by \$50 million – \$70 million¹ annually beginning in 2021
- With lower targeted aggregate debt levels and improving debt metrics, reduction could be greater still



Path to \$2 billion and beyond

Adjusted EBITDA*
(in millions)



*Refer to GAAP to non-GAAP reconciliations



Appendix



Non-GAAP Financial Measures – Adjusted EBITDA ^(a)

Olin's definition of Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net income (loss) plus an add-back for depreciation and amortization, interest expense (income), income tax expense (benefit), other expense (income), restructuring charges, acquisition-related costs and certain other non-recurring items. Adjusted EBITDA is a non-GAAP financial measure. Management believes that this measure is meaningful to investors as a supplemental financial measure to assess the financial performance without regard to financing methods, capital structures, taxes or historical cost basis. The use of non-GAAP financial measures is not intended to replace any measures of performance determined in accordance with GAAP and Adjusted EBITDA presented may not be comparable to similarly titled measures of other companies. Reconciliation of forward-looking non-GAAP financial measures to the most directly comparable GAAP financial measures are omitted from this release because Olin is unable to provide such reconciliations without the use of unreasonable efforts. This inability results from the inherent difficulty in forecasting generally and quantifying certain projected amounts that are necessary for such reconciliations. In particular, sufficient information is not available to calculate certain adjustments required for such reconciliations, including interest expense (income), income tax expense (benefit), other expense (income), restructuring charges and acquisition-related costs. Because of our inability to calculate such adjustments, forward-looking net income guidance is also omitted from this release. We expect these adjustments to have a potentially significant impact on our future GAAP financial results.

(In millions)	Years Ended		
	December 31,		
	2018	2017	2016
Reconciliation of Net Income to Adjusted EBITDA:			
Net Income	\$ 327.9	\$ 549.5	\$ (3.9)
Add Back:			
Interest Expense	243.2	217.4	191.9
Interest Income	(1.6)	(1.8)	(3.4)
Income Tax Provision (Benefit) (b)	109.4	(432.3)	(30.3)
Depreciation and Amortization	601.4	558.9	533.5
EBITDA	1,280.3	891.7	687.8
Add Back:			
Restructuring Charges (c)	21.9	37.6	112.9
Acquisition-related Costs (d)	1.0	12.8	48.8
Environmental Recoveries, Net (e)	(89.5)	-	-
Information Technology Integration Project (f)	36.5	5.3	-
Certain Non-recurring Items (g)	15.2	(3.3)	(11.0)
Adjusted EBITDA	\$ 1,265.4	\$ 944.1	\$ 838.5

(a) Unaudited.

(b) Income tax provision (benefit) for the year ended December 31, 2017 reflects the tax benefit of \$437.9 million from the Tax Cuts & Jobs Act.

(c) Restructuring charges for the years ended December 31, 2018, 2017 and 2016 were primarily associated with the 2016 closure of 433,000 tons of chlor alkali capacity across three separate Olin locations. Restructuring charges for the year ended December 31, 2018 also included costs associated with permanently closing the ammunition assembly operations at the Geelong, Australia facility.

(d) Acquisition-related costs for the years ended December 31, 2018, 2017 and 2016 were associated with our integration of the Acquired Business.

(e) Environmental recoveries, net for the year ended December 31, 2018 included insurance recoveries for environmental costs incurred and expensed in prior periods of \$111.0 million. The recoveries are reduced by \$21.5 million of legal costs incurred during the year ended December 31, 2018 associated with the environmental recovery actions.

(f) Information technology integration project charges for the years ended December 31, 2018 and 2017 were associated with the implementation of new enterprise resource planning, manufacturing, and engineering systems, and related infrastructure costs.

(g) Certain non-recurring items for the year ended December 31, 2018 included a \$1.7 million loss on the sale of land, a \$21.5 million non-cash impairment charge associated with our investment in non-consolidated affiliates and an \$8.0 million insurance recovery associated with a second quarter 2017 business interruption at our Freeport, Texas vinyl chloride monomer facility. Certain non-recurring items for the year ended December 31, 2017 included a gain of \$3.3 million on the sale of a former manufacturing facility. Certain non-recurring items for the year ended December 31, 2016 included an \$11.0 million insurance recovery for property damage and business interruption related to a 2008 chlor alkali facility incident.



Non-GAAP Financial Measures by Segment ^(a)

(In millions)

Year Ended December 31, 2018

Year Ended December 31, 2017

	Income (loss) before Taxes	Non-Recurring Item	Depreciation and Amortization	Adjusted EBITDA	Income (loss) before Taxes	Non-Recurring Item	Depreciation and Amortization	Adjusted EBITDA
Chlor Alkali Products and Vinyls	\$ 637.1	\$21.5	\$ 473.1	\$ 1,131.7	\$ 405.8	\$ -	\$ 432.2	\$ 838.0
Epoxy	52.8	-	102.4	155.2	(11.8)	-	94.3	82.5
Winchester	38.4	-	20.0	58.4	72.4	-	19.5	91.9
	728.3	21.5	595.5	1,345.3	466.4	-	546.0	1,012.4
Environmental Income (Expense) (b)	103.7	(111.0)	-	(7.3)	(8.5)	-	-	(8.5)
Other Corporate and Unallocated Costs (c)	(158.3)	58.0	5.9	(94.4)	(112.4)	5.3	12.9	(94.2)
Other Operating Income (Expense) (d)	6.4	(6.3)	-	0.1	3.3	(3.3)	-	-
Non-operating Pension Income (e)	21.7	-	-	21.7	34.4	-	-	34.4
Total Corporate / Unallocated	(26.5)	(59.3)	5.9	(79.9)	(83.2)	2.0	12.9	(68.3)
Adjusted EBITDA	\$ 701.8	\$ (37.8)	\$ 601.4	\$ 1,265.4	\$ 383.2	\$ 2.0	\$ 558.9	\$ 944.1

(In millions)

Year Ended December 31, 2016

	Income (loss) before Taxes	Non-Recurring Item	Depreciation and Amortization	Adjusted EBITDA
Chlor Alkali Products and Vinyls	\$ 224.9	\$ -	\$ 418.1	\$ 643.0
Epoxy	15.4	-	90.0	105.4
Winchester	120.9	-	18.5	139.4
	361.2	-	526.6	887.8
Environmental Income (Expense) (b)	(9.2)	-	-	(9.2)
Other Corporate and Unallocated Costs (c)	(91.4)	-	6.9	(84.5)
Other Operating Income (Expense) (d)	10.6	(11.0)	-	(0.4)
Non-operating Pension Income (e)	44.8	-	-	44.8
Total Corporate / Unallocated	(45.2)	(11.0)	6.9	(49.3)
Adjusted EBITDA	\$ 316.0	\$ (11.0)	\$ 533.5	\$ 838.5

(a) Unaudited.

(b) Environmental income (expense) for the year ended December 31, 2018 included insurance recoveries for environmental costs incurred and expensed in prior periods of \$111.0 million.

(c) Other corporate and unallocated costs for the year ended December 31, 2018 and 2017 included costs associated with the implementation of new enterprise resource planning, manufacturing, and engineering systems, and related infrastructure costs of \$36.5 million and \$5.3 million, respectively. The year ended December 31, 2018 is also adjusted for the \$21.5 million of legal fees incurred for the environmental recovery actions.

(d) Other operating income (expense) for the year ended December 31, 2018 included a \$1.7 million loss on the sale of land and an \$8.0 million insurance recovery associated with a second quarter 2017 business interruption at our Freeport, Texas vinyl chloride monomer facility. Other operating income (expense) for the year ended December 31, 2017 included a gain of \$3.3 million on the sale of a former manufacturing facility. Other operating income (expense) for the year ended December 31, 2016 included an \$11.0 million insurance recovery for property damage and business interruption related to a 2008 chlor alkali facility incident.

(e) The service cost components of pension expense related to the employees of the operating segments are allocated to the operating segments based on their respective estimated census data. All other components of pension costs are included in non-operating pension income reflecting the adoption of Accounting Standards Update 2017-07.



Non-GAAP Financial Measures by Segment ^(a)

(In millions)	Three Months Ended December 31, 2018				Three Months Ended September 30, 2018			
	Income (loss) before Taxes	Non-Recurring Items	Depreciation and Amortization	Adjusted EBITDA	Income (loss) before Taxes	Non-Recurring Items	Depreciation and Amortization	Adjusted EBITDA
Chlor Alkali Products and Vinyls (b)	\$ 146.4	\$ -	\$ 117.7	\$ 264.1	\$ 210.8	\$ -	\$ 122.3	\$ 333.1
Epoxy	19.0	-	25.4	44.4	31.1	-	25.2	56.3
Winchester	4.3	-	5.1	9.4	10.3	-	4.9	15.2
	<u>169.7</u>	<u>-</u>	<u>148.2</u>	<u>317.9</u>	<u>252.2</u>	<u>-</u>	<u>152.4</u>	<u>404.6</u>
Environmental (Expense) Income (c)	(0.4)	(1.0)	-	(1.4)	110.8	(110.0)	-	0.8
Other Corporate and Unallocated Costs (d)	(33.8)	11.0	2.2	(20.6)	(42.7)	29.0	1.2	(12.5)
Other Operating (Income) Expense (e)	-	-	-	-	(1.7)	1.7	-	-
Non-operating Pension Income (f)	5.5	-	-	5.5	5.4	-	-	5.4
Total Corporate / Unallocated	<u>(28.7)</u>	<u>10.0</u>	<u>2.2</u>	<u>(16.5)</u>	<u>71.8</u>	<u>(79.3)</u>	<u>1.2</u>	<u>(6.3)</u>
Adjusted EBITDA	\$ 141.0	\$ 10.0	\$ 150.4	\$ 301.4	\$ 324.0	\$ (79.3)	\$ 153.6	\$ 398.3

(In millions)	Three Months Ended June 30, 2018				Three Months Ended March 31, 2018			
	Income (loss) before Taxes	Non-Recurring Items	Depreciation and Amortization	Adjusted EBITDA	Income (loss) before Taxes	Non-Recurring Items	Depreciation and Amortization	Adjusted EBITDA
Chlor Alkali Products and Vinyls (b)	\$ 149.4	\$ 21.5	\$ 119.4	\$ 290.3	\$ 130.5	\$ -	\$ 113.7	\$ 244.2
Epoxy	24.8	-	25.1	49.9	(22.1)	-	26.7	4.6
Winchester	11.8	-	4.9	16.7	12.0	-	5.1	17.1
	<u>186.0</u>	<u>21.5</u>	<u>149.4</u>	<u>356.9</u>	<u>120.4</u>	<u>-</u>	<u>145.5</u>	<u>265.9</u>
Environmental (Expense) Income (c)	(4.4)	-	-	(4.4)	(2.3)	-	-	(2.3)
Other Corporate and Unallocated Costs (d)	(45.3)	11.5	1.3	(32.5)	(36.5)	6.5	1.2	(28.8)
Other Operating (Income) Expense (e)	-	-	-	-	8.1	(8.0)	-	0.1
Non-operating Pension Income (f)	5.4	-	-	5.4	5.4	-	-	5.4
Total Corporate / Unallocated	<u>(44.3)</u>	<u>11.5</u>	<u>1.3</u>	<u>(31.5)</u>	<u>(25.3)</u>	<u>(1.5)</u>	<u>1.2</u>	<u>(25.6)</u>
Adjusted EBITDA	\$ 141.7	\$ 33.0	\$ 150.7	\$ 325.4	\$ 95.1	\$ (1.5)	\$ 146.7	\$ 240.3

(a) Unaudited.

(b) Non-recurring items in Chlor Alkali Products and Vinyls for the three months ended June 30, 2018 included a \$21.5 million non-cash impairment charge associated with their investments in non-consolidated affiliates.

(c) Environmental (expense) income for the three months ended December 31 and September 30, 2018 included recoveries from third parties for costs incurred and expensed in prior periods of \$1.0 million and \$110.0 million, respectively.

(d) Other corporate and unallocated costs for the three months ended December 31, September 30, June 30, and March 31, 2018 included costs associated with the implementation of new enterprise resource planning, manufacturing, and engineering systems, and related infrastructure costs of \$11.0 million, \$7.5 million, \$11.5 million and \$6.5 million, respectively. The three months ended September 30, 2018 is also adjusted for the \$21.5 million of legal fees incurred for the environmental recovery actions.

(e) Other operating (income) expense for the three months ended September 30, 2018 included a \$1.7 million loss on the sale of land. Other operating (income) expense for the three months ended March 31, 2018 included an \$8.0 million insurance recovery associated with a second quarter 2017 business interruption at our Freeport, Texas vinyl chloride monomer facility.

(f) The service cost components of pension expense related to the employees of the operating segments are allocated to the operating segments based on their respective estimated census data. All other components of pension costs are included in non-operating pension income reflecting the adoption of Accounting Standards Update 2017-07.



Non-GAAP Financial Measures – Free Cash Flow ^(a)

Olin's definition of Free Cash Flow is the total of net cash provided or required by operating activities less capital expenditures and adjusted for other non-cash items, operating activities which are not direct financing activities, or other cash timing adjustments. Free Cash Flow does not represent the residual cash flow available for discretionary expenditures. Free Cash Flow is a non-GAAP financial measure. Management believes that this measure is meaningful to investors as a supplemental liquidity measure and that it is useful to investors and management as a measure of the ability of our business to generate cash. Once business needs and obligations are met, this cash can be used to reinvest in the company for future growth or to return to our shareowners through debt repayments, dividend payments or share repurchases. The use of non-GAAP financial measures is not intended to replace any measures of performance or liquidity determined in accordance with GAAP and Free Cash Flow presented may not be comparable to similarly titled measures of other companies. Free Cash Flow is typically derived directly from the Company's consolidated statements of cash flows; however, it may be adjusted for items that affect comparability between periods.

(In millions)	Years Ended			
	2018	2017	2016	
Reconciliation of Net Operating Activities to Free Cash Flows:				
Net Operating Activities	\$ 907.8	\$ 648.8	\$ 603.2	
Capital Expenditures	(385.2)	(294.3)	(278.0)	
Restructuring (b)	4.2	(6.8)	6.0	(a) Unaudited
Interest (b)	34.4	16.5	(8.9)	(b) Restructuring and interest reconciling items represent the difference between cash paid and the amount incurred and expensed for each of the respective periods presented.
Losses (Earnings) of Non-consolidated Affiliates (c)	19.7	(1.8)	7.1	(c) Losses (earnings) of non-consolidated affiliates for the year ended December 31, 2017 included a \$21.5 million pretax non-cash impairment charge associated with our investments in non-consolidated affiliates. Losses (earnings) of non-consolidated affiliates for the year ended December 31, 2016 included \$8.8 million from the October 2013 sale of a bleach joint venture.
Stock-based Compensation	(12.0)	(9.1)	(7.5)	
Qualified Pension Plan Income and Contributions	17.6	28.6	44.8	
Other Adjustments	1.0	(0.4)	8.4	
Free Cash Flows	\$ 587.5	\$ 381.5	\$ 375.1	(d) Certain Non-recurring Item include cash restructuring expenditures, information technology integration project charges, acquisition-related costs, environmental recoveries, net, non-environmental insurance recoveries and loss (gain) on the sale of property, plant and equipment.
Adjusted EBITDA	\$ 1,265.4	\$ 944.1	\$ 838.5	
Capital Expenditures	(385.2)	(294.3)	(278.0)	
Working Capital Change	(71.6)	9.8	80.9	
Taxes Paid	(52.9)	(18.0)	2.6	
Interest Paid	(208.8)	(200.9)	(200.8)	
Certain Non-recurring Items (d)	40.6	(59.2)	(68.1)	
Free Cash Flows	\$ 587.5	\$ 381.5	\$ 375.1	



Non-GAAP Financial Measures – Net Debt to Adjusted EBITDA ^(a)

Olin's definition of Net Debt to Adjusted EBITDA is Net Debt divided by Adjusted EBITDA. Net Debt at the end of any reporting period is defined as our current installments of long-term debt plus long-term debt less our cash and cash equivalents. Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net income (loss) plus an add-back for depreciation and amortization, interest expense (income), income tax expense (benefit), other expense (income), restructuring charges, acquisition-related costs and certain other non-recurring items. Net Debt to Adjusted EBITDA is a non-GAAP financial measure. Management believes that this measure is meaningful to investors as a measure of our ability to manage our indebtedness. The use of non-GAAP financial measures is not intended to replace any measures of indebtedness or liquidity determined in accordance with GAAP and Net Debt or Net Debt to Adjusted EBITDA presented may not be comparable to similarly titled measures of other companies.

(In millions)	Years Ended		
	December 31,		
	2018	2017	2016
Current installments of long-term debt	\$ 125.9	\$ 0.7	\$ 80.5
Long-term debt	3,104.4	3,611.3	3,537.1
Less: Cash and cash equivalents	(178.8)	(218.4)	(184.5)
Net debt	\$ 3,051.5	\$ 3,393.6	\$ 3,433.1
Adjusted EBITDA	\$ 1,265.4	\$ 944.1	\$ 838.5
Net debt to Adjusted EBITDA	2.4	3.6	4.1

(a) unaudited



2018 Segment Performance

Sales	1Q18	2Q18	3Q18	4Q18	FY2018
Chlor Alkali Products and Vinyls	\$936	\$1,019	\$1,051	\$981	\$3,987
Epoxy	603	544	647	509	2,303
Winchester	<u>171</u>	<u>166</u>	<u>174</u>	<u>145</u>	<u>656</u>
Total	\$1,710	\$1,729	\$1,872	\$1,635	\$6,946

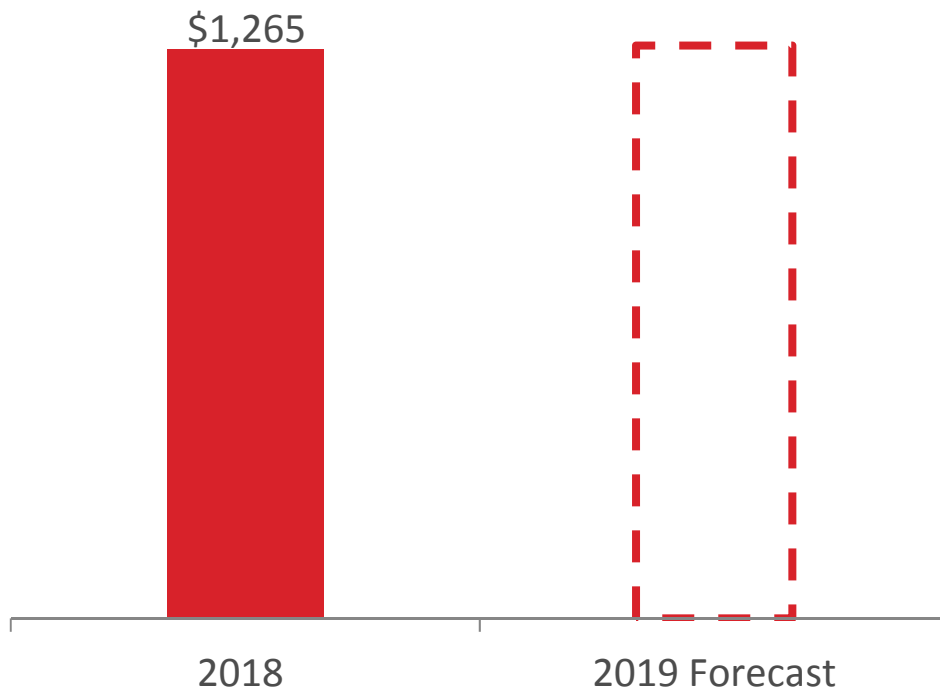
Adjusted EBITDA*	1Q18	2Q18	3Q18	4Q18	FY2018
Chlor Alkali Products and Vinyls	\$244	\$291	\$333	\$264	\$1,132
Epoxy	5	50	56	44	155
Winchester	17	17	15	9	58
Corporate/Unallocated	<u>(26)</u>	<u>(32)</u>	<u>(6)</u>	<u>(16)</u>	<u>(80)</u>
Total	\$240	\$326	\$398	\$301	\$1,265

*Refer to GAAP to non-GAAP reconciliations



Full year 2019 Adjusted EBITDA expected to be comparable to record full year 2018

Adjusted EBITDA*
(in millions)



2019 Forecast Assumptions:

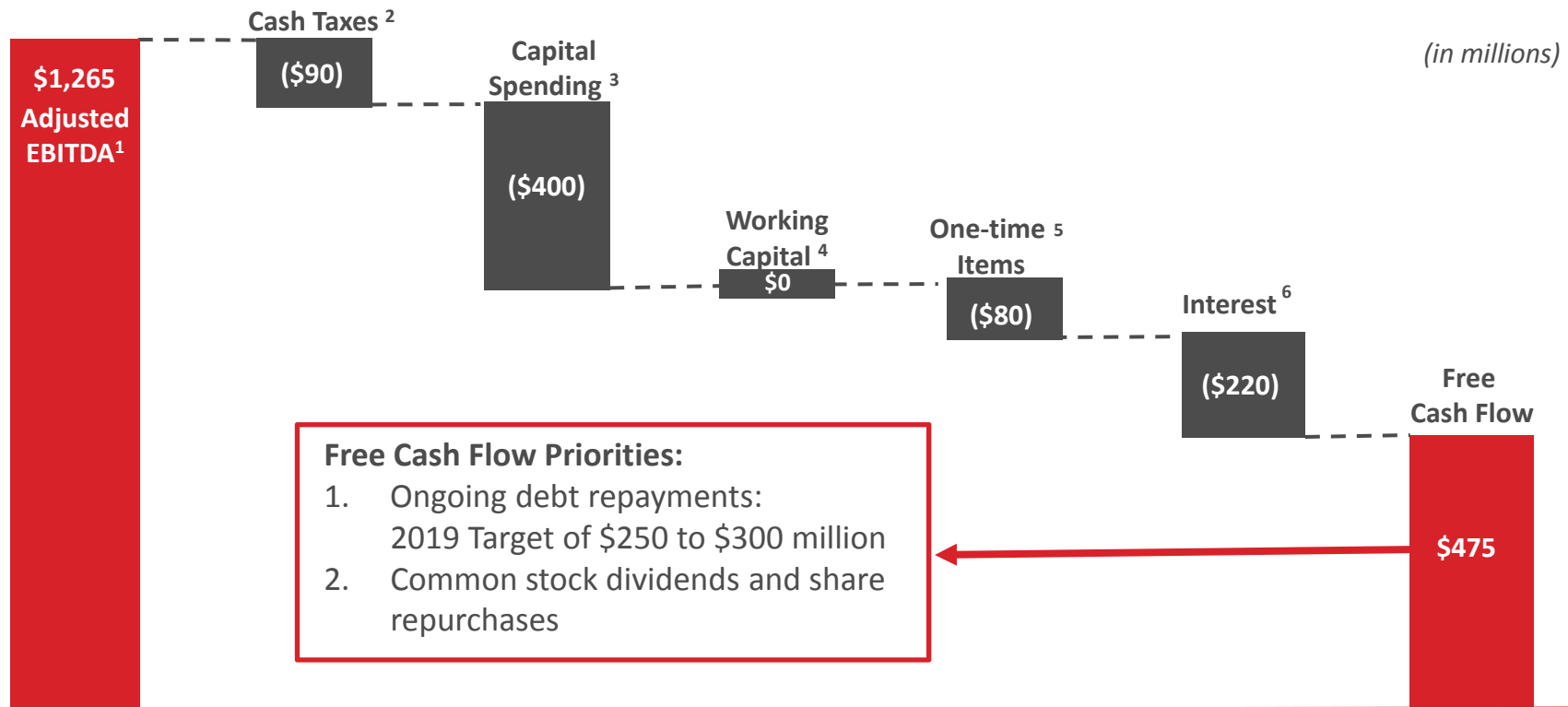
- + Higher chlorine, EDC and chlorine derivative pricing
- + Lower turnaround costs of ~ \$35 million
- + Higher Epoxy volumes and lower raw material costs
- Lower average domestic and export caustic soda pricing
- Increased freight costs

*Refer to GAAP to non-GAAP reconciliations



2019 Cash flow forecast

Debt reduction remains top priority for free cash flow



1: Olin's estimated 2019 Adjusted EBITDA forecast of \$1.265 billion

2: Estimated using the cash tax rate of 25%

3: Represents the mid-point of management's annual capital spending estimate range of \$375 million to \$425 million, which includes \$80 million associated with the information technology project

4: Estimated working capital is expected to be flat

5: One-time items include the information technology integration project costs and cash restructuring charges

6: Cash interest expense is calculated based on Olin's capital structure and assuming current interest rates



2019 forecast assumptions

(in millions)

Line Item	Forecast	Key Elements
Capital Spending	375 to 425	Annual spending for maintenance capital of \$225M to \$275M, IT project spending of approximately \$80M and other projects
Depreciation & Amortization	590 to 610	Forecast levels are comparable to 2018 expense
Non-operating Pension Income	15 to 20	Lower than 2018 income levels by approximately \$5 million
Environmental Expense	15 to 20	A more historic expense level, about \$10 million higher than 2018
Other Corporate	100 to 110	Forecast is an increase from 2018 levels primarily reflecting higher stock-based compensation costs
Restructuring & IT Project Costs	80	Information technology integration project and restructuring costs
Book Effective Tax Rate	25%	Comparable with 2018 book effective tax rate
Cash Tax Rate	25%	Higher than 2018 as Olin exhausted the tax credit carryforwards that were created with the 2015 acquisition and began paying U. S. federal taxes late 2018



Chlor alkali annual EBITDA sensitivity

Price Driver	Price Change	Annual EBITDA Impact (in millions)
Chlorine	\$10/ton	\$10
Caustic	\$10/ton	\$30
EDC	\$.01/pound	\$20
Cost Driver	Price Change	Annual EBITDA Impact (in millions)
Natural Gas	\$1/mmbtu	\$45 to \$55
Ethane	\$.01/gallon	\$3



Olin caustic soda price realization

Fundamental Principle

- A \$10 per ton change in Olin's caustic soda selling price changes annual Adjusted EBITDA by approximately \$30 million

Export Sales

- Typically range between 20% and 25% of caustic sales
- Sold on a combination of negotiated sales and export index price
- Realization of index price changes are typically 90% to 100%
- Changes in export index prices are typically realized on a 30 to 60 day lag

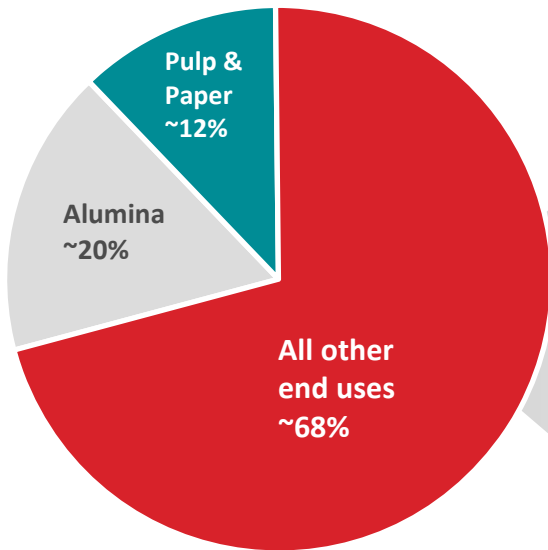
Domestic Sales

- Contracts are made up of a combination of negotiated and index-based pricing terms
- Index price changes typically occur 30 to 60 days post our price nomination
- Realization of index price changes are typically 70% to 100%
- Overall price realization lags index price changes by 0 to 90 days



Caustic soda has diverse base and healthy outlook

2018 World Caustic Soda Demand
(as a percentage of total 80MM tons)



Raw Materials

- Sodium lauryl sulfate (soap)
- Sodium cyanide (mining, nylon)
- Super absorbent polymers (diapers)
- Sodium hydrosulfide (pulp, mining)
- Sodium benzoate (food)
- Monosodium glutamate (food)
- Epoxy resins (adhesives)

Processing Aid

- Alumina (infrastructure, construction, consumables)
- Pulp and paper (packaging, paper, print)
- Polycarbonate (electronics)
- Textiles (clothing)

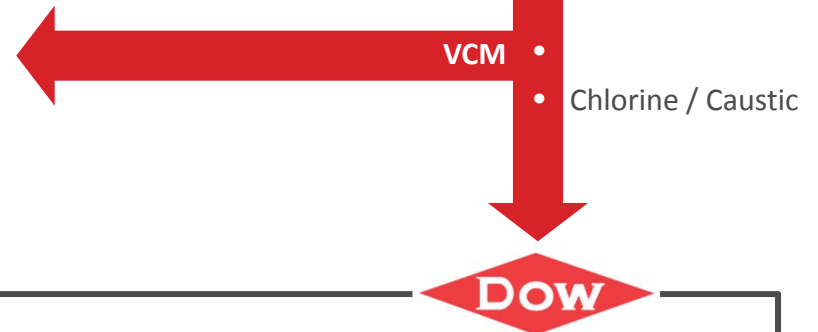
Caustic soda is consumed to make a wide variety of end-uses but is not the primary input



Long-term contracts with largest customer Dow continue to deliver value to Olin

Vinyl Chloride Monomer (VCM)

- Olin produces VCM for Dow pipeline customer
- Current Ethylene toll agreement through 2020
- Olin will have a direct, long-term contract with pipeline customer starting in 2021
- Expected incremental annual EBITDA of \$50 million – \$75 million



Long-term contracts through 2025

Approximately 1.5 MMT/year of both chlorine and caustic soda

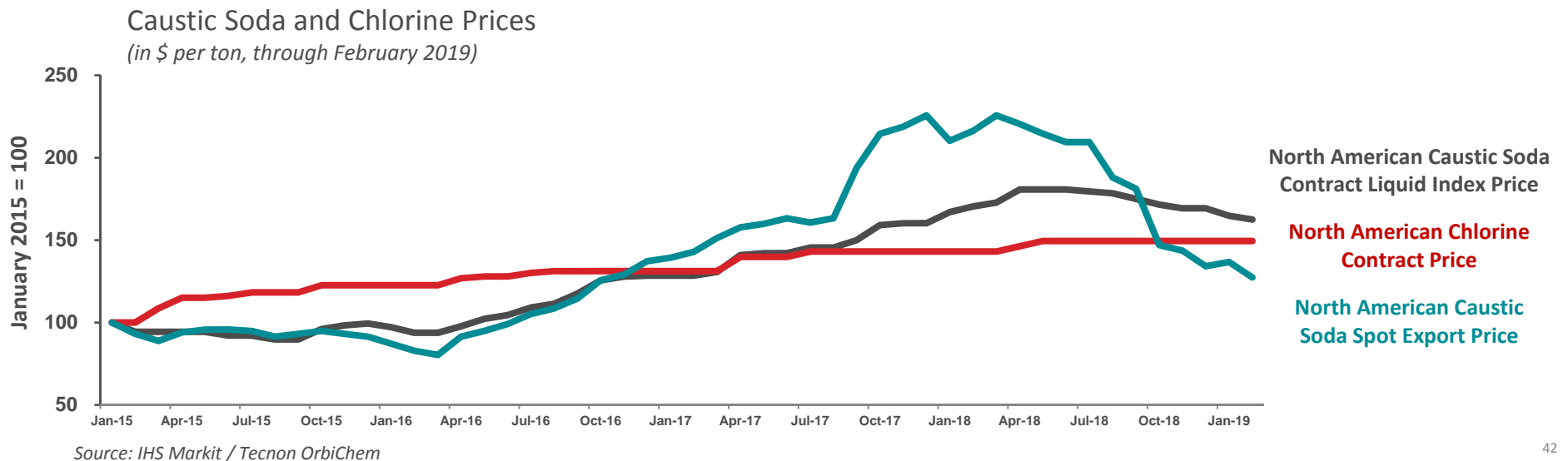
Cost-plus based

Maintains baseload and integration value for Olin



Near-term fundamentals for the Chlor alkali products and vinyls segment are constructive

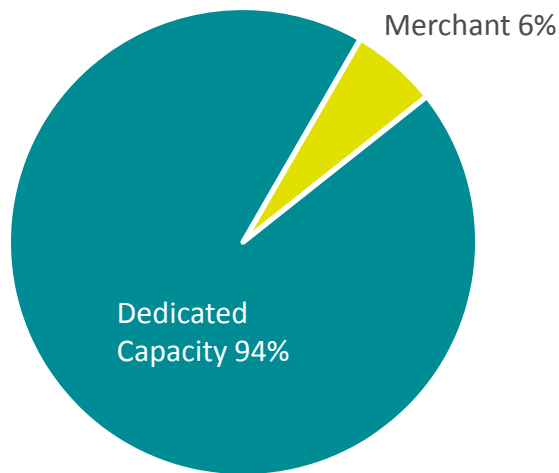
- See signs of stabilization in export caustic soda pricing
- Expect domestic and export caustic soda prices to improve from current levels in 2019
- Expect improvement in chlorine pricing in 2019
- Structural supply and demand fundamentals in the chlor alkali industry remain positive





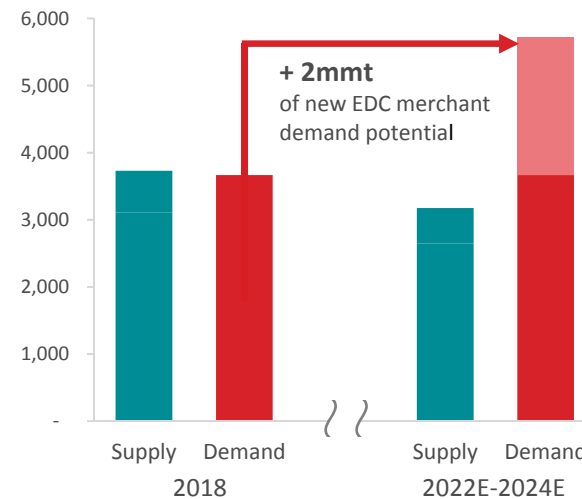
Uniquely positioned to capture EDC demand growth

Global EDC Industry Production
(in thousand tons)



- Vast majority of EDC volume is dedicated, used by integrated producers to make PVC

Merchant EDC Supply and Demand
(in thousand tons)



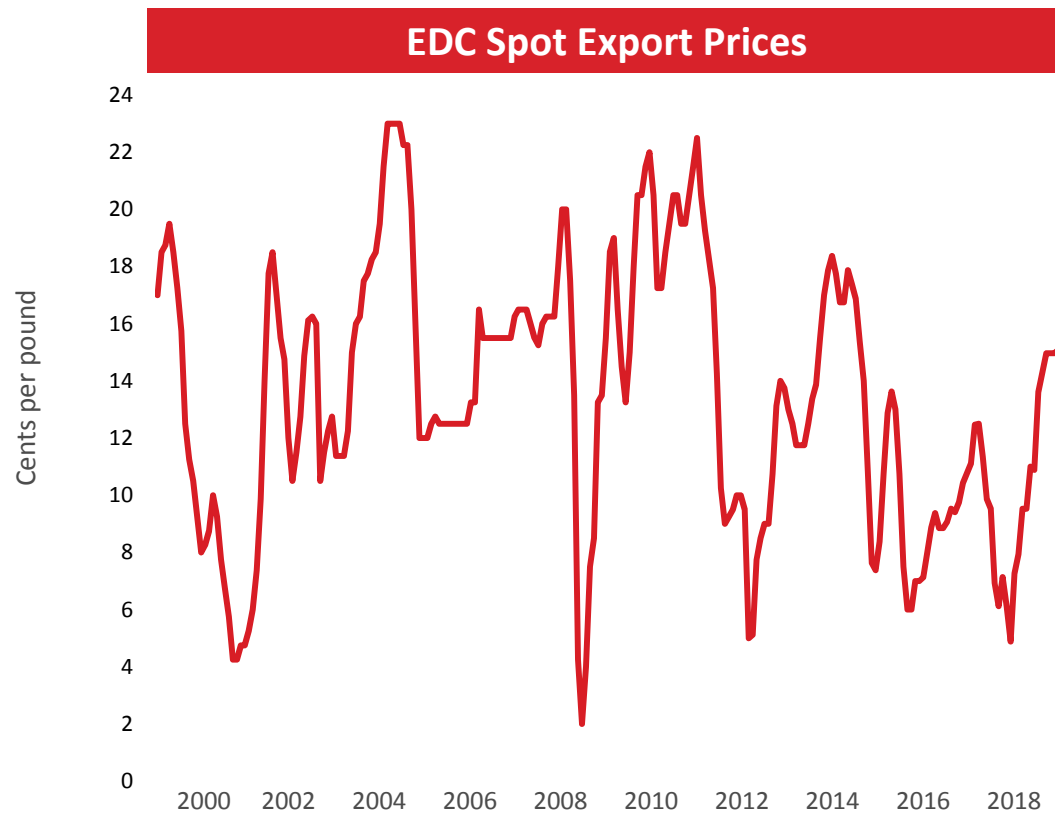
- Global supply is projected to decline by ~500KT as swing suppliers expand their own PVC capacity
- Extensive demand growth from non-integrated PVC producers

- Olin is the largest global supplier of EDC
- New PVC plants contemplated in Asia are non-integrated
- Estimated new merchant requirements are roughly 2 million tons
- Olin has low cost U.S. Gulf Coast assets integrated to chlorine and ethylene
- Debottlenecking growth opportunities available

Source: Olin estimates



EDC pricing history 2000 – February 2019



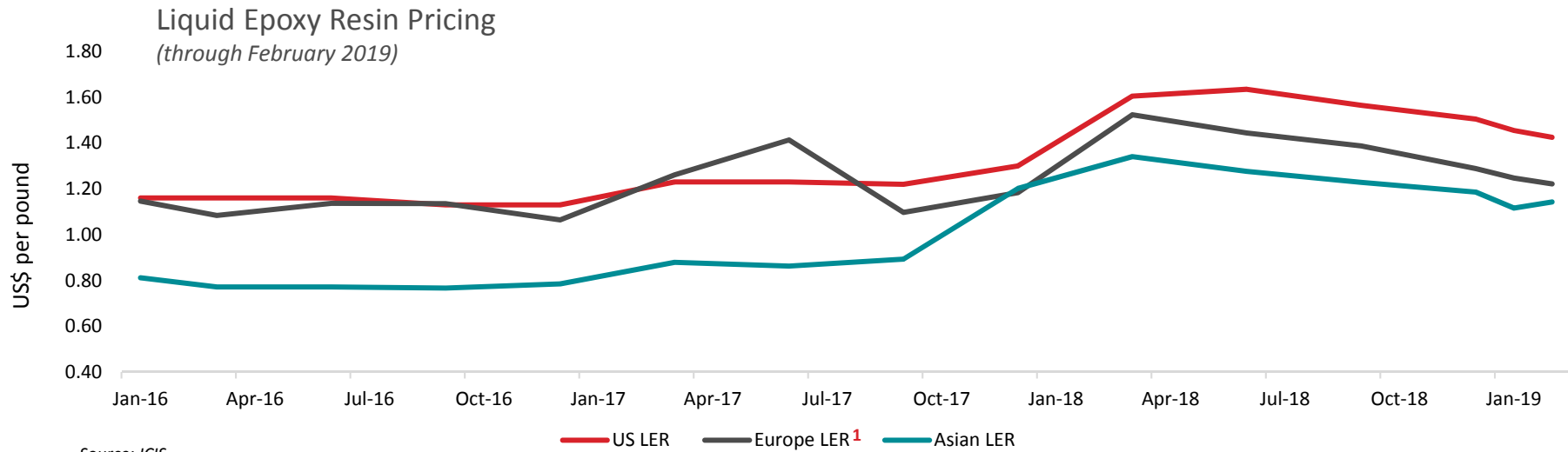
- Pricing has recovered from the 5 year lows experienced in December 2017
- Full year 2018 USGC pricing has improved approximately 3 cents, or 30% over full-year 2017 pricing
- A 1 cent change in Olin's EDC price changes annual Adjusted EBITDA by \$20 million

Source: IHS Markit



Liquid Epoxy Resin Pricing

- Global liquid epoxy resin pricing declined in 4Q18 as raw material costs, particularly benzene and propylene, declined
- Full year 2018 liquid epoxy resin prices were up year-over-year
 - North America up approximately 30%
 - Europe up nearly 15%
 - Asia up approximately 35%

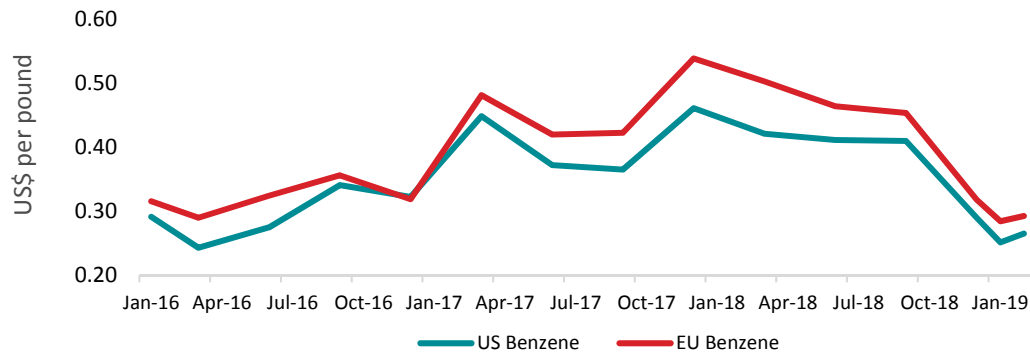


¹: European liquid epoxy resin (LER) prices reflect a non-market adjustment made in the third quarter of 2017.

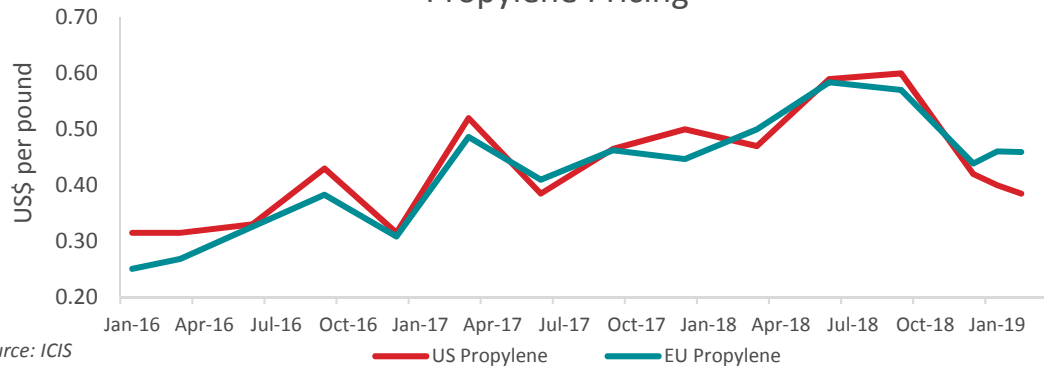


Raw Material Costs - Benzene & Propylene Pricing

January 2016 to February 2019



January 2016 to February 2019
Propylene Pricing



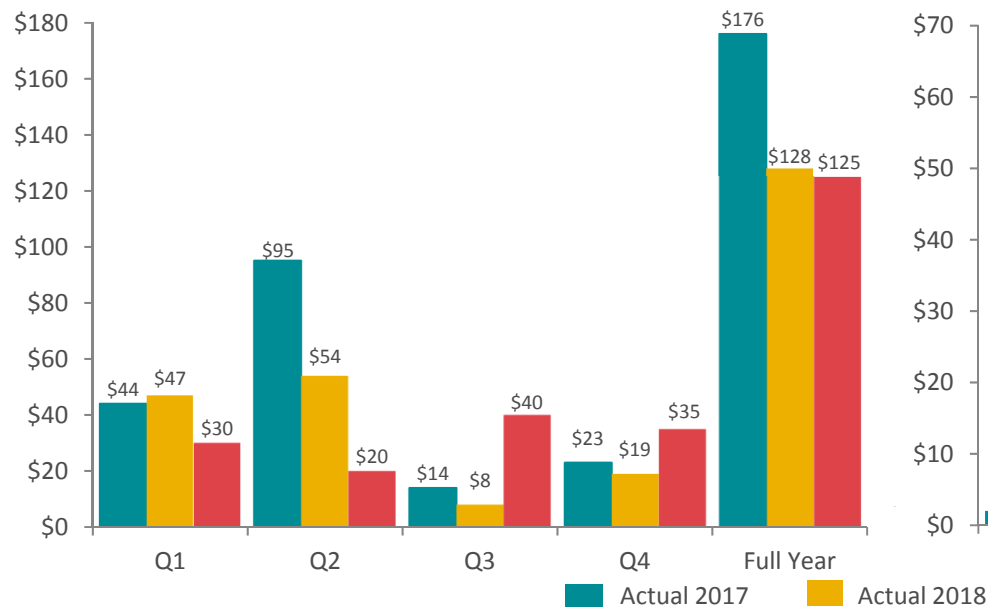
Source: ICIS

- Sequentially, U.S. and European benzene and propylene prices declined
- 4Q18 U.S. and European benzene prices have moved lower year-over-year
- U.S and European propylene 4Q18 prices were marginally higher than 4Q17

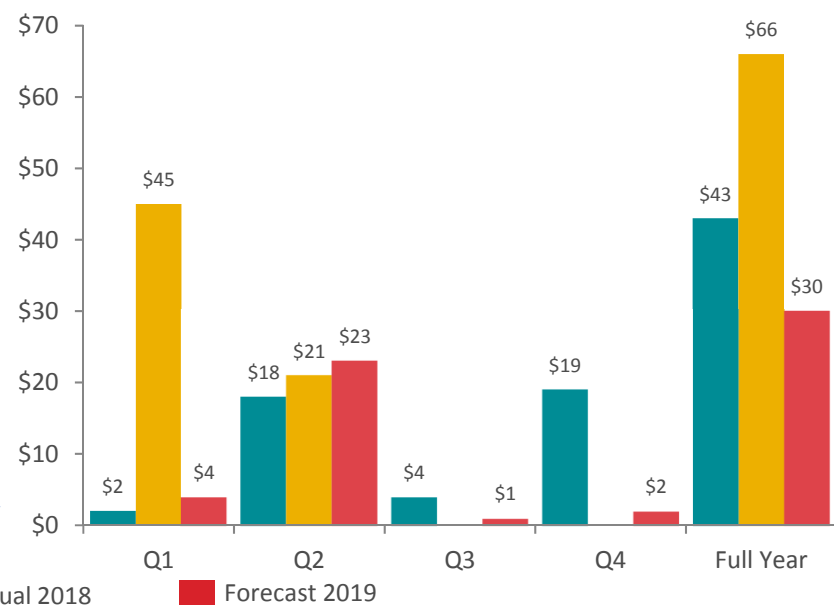


Maintenance Turnaround Costs¹

Chlor Alkali Products & Vinyls
(in millions)



Epoxy
(in millions)

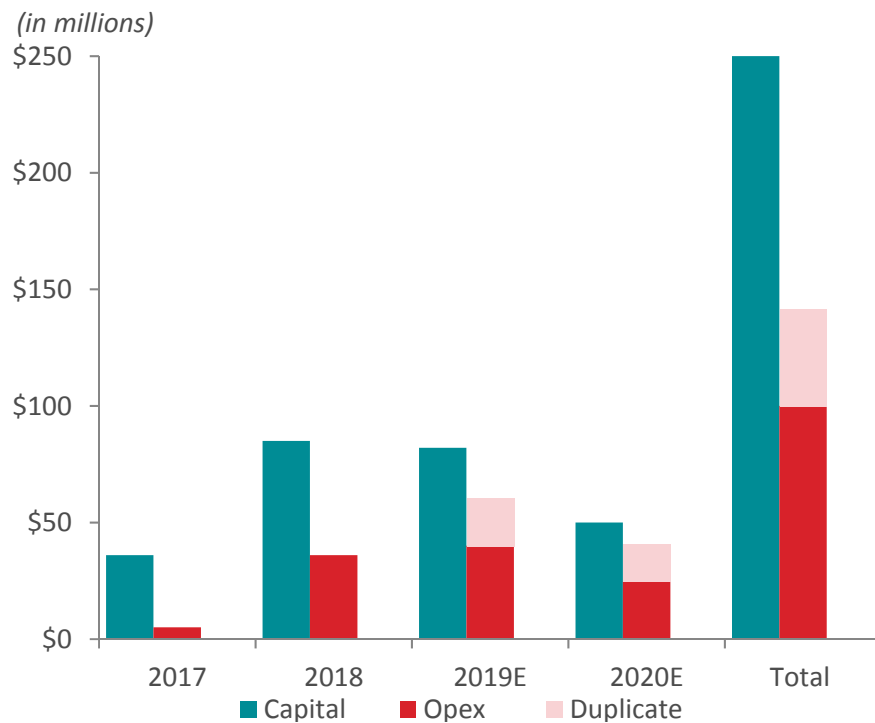


- Full year 2019 turnaround schedule will vary from the historic quarterly cadence
- Expect a heavier turnaround schedule in 2H19 due to aligning with planned customer outages
- Full year 2019 turnaround costs expected to be approximately \$30 to \$40 million lower than 2018 – primarily in the Epoxy segment

¹: Maintenance turnaround costs include maintenance costs and lost volume penalties associated with unabsorbed fixed manufacturing costs from lost sales associated with the turnarounds and outages.



Information technology integration update



- During 2017 began implementing new enterprise resource planning, manufacturing and engineering systems, and related IT infrastructure
- Objective to standardize business processes, while maximizing costs effectiveness, efficiency and control across the global chemical operations
- Expected completion by end of 2020
- Project required due to expiration of IT transition service agreement with Dow
- Expect annual cost savings of ~\$50 million beginning in 2021
- Adjusted EBITDA excludes project related operational charges and duplicative costs