

Albemarle Corporation

Investor Presentation

February 2019



Forward-Looking Statements

Some of the information presented in this presentation, the earnings conference call and discussions that follow, including, without limitation, information related to outlook and guidance, conversion capacity, acquisitions and joint ventures market trends, pricing, expected growth, earnings and demand for our products, tax rates, stock repurchases, dividends, cash flow generation, capital projects, economic trends and all other information relating to matters that are not historical facts may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results could differ materially from the views expressed.

Factors that could cause actual results to differ materially from the outlook expressed or implied in any forward-looking statement include, without limitation: changes in economic and business conditions; changes in financial and operating performance of our major customers and industries and markets served by us; the timing of orders received from customers; the gain or loss of significant customers; competition from other manufacturers; changes in the demand for our products or the end-user markets in which our products are sold; limitations or prohibitions on the manufacture and sale of our products; availability of raw materials; increases in the cost of raw materials and energy, and our ability to pass through such increases to our customers; changes in our markets in general; fluctuations in foreign currencies; changes in laws and government regulation impacting our operations or our products; the occurrence of regulatory actions, proceedings, claims or litigation; the occurrence of cyber-security breaches, terrorist attacks, industrial accidents, natural disasters or climate change; the inability to maintain current levels of product or premises liability insurance or the denial of such coverage; regulatory approvals and the satisfaction of other closing conditions with respect to pending acquisitions; political unrest affecting the global economy, including adverse effects from terrorism or hostilities; political instability affecting our manufacturing operations or joint ventures; changes in accounting standards; the inability to achieve results from our global manufacturing cost reduction initiatives as well as our ongoing continuous improvement and rationalization programs; changes in the jurisdictional mix of our earnings and changes in tax laws and rates; changes in monetary policies, inflation or interest rates that may impact our ability to raise capital or increase our cost of funds, impact the performance of our pension fund investments and increase our pension expense and funding obligations; volatility and uncertainties in the debt and equity markets; technology or intellectual property infringement, including cyber-security breaches, and other innovation risks; decisions we may make in the future; the ability to successfully execute, operate and integrate acquisitions and divestitures; and the other factors detailed from time to time in the reports we file with the SEC, including those described under “Risk Factors” in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q. These forward-looking statements speak only as of the date of this presentation. We assume no obligation to provide any revisions to any forward-looking statements should circumstances change, except as otherwise required by securities and other applicable laws.

Non-GAAP Financial Measures

It should be noted that Adjusted net income attributable to Albemarle Corporation ("Adjusted earnings"), Adjusted diluted earnings per share attributable to Albemarle Corporation, Adjusted effective income tax rates, segment operating profit, segment income, pro-forma net sales, net sales excluding the impact of foreign exchange translation ("ex FX"), EBITDA, Adj. EBITDA, Adj. EBITDA by operating segment, EBITDA margin, Adj. EBITDA margin, pro-forma Adj. EBITDA, pro-forma Adj. EBITDA margin, Adj. EBITDA excluding the impact of foreign exchange translation ("ex FX"), Adj. EBITDA margin excluding the impact of foreign exchange translation ("ex FX"), net debt to Adj. EBITDA, gross debt to Adj. EBITDA, free cash flow, and Adjusted free cash flow are financial measures that are not required by, or presented in accordance with, accounting principles generally accepted in the United States, or GAAP. These measures are presented here to provide additional useful measurements to review our operations, provide transparency to investors and enable period-to-period comparability of financial performance. The Company's chief operating decision maker uses these measures to assess the ongoing performance of the Company and its segments, as well as for business and enterprise planning purposes.

A description of these and other non-GAAP financial measures that we use to evaluate our operations and financial performance, and reconciliation of these non-GAAP financial measures to the most directly comparable financial measures calculated and reported in accordance with GAAP, can be found in the Appendix to this presentation. The Company does not provide a reconciliation of forward looking non-GAAP financial measures to the most directly comparable financial measures calculated and reported in accordance with GAAP, as the Company is unable to estimate significant non-recurring or unusual items without unreasonable effort. The amounts and timing of these items are uncertain and could be material to the Company's results calculated in accordance with GAAP.

Albemarle Snapshot

Founded	1887
Global Employees	~5,600
Countries ¹	~100
Dividend Yield ²	1.6%
Market Cap ³	\$9.4B

Providing innovative solutions to power the potential of energy efficiency

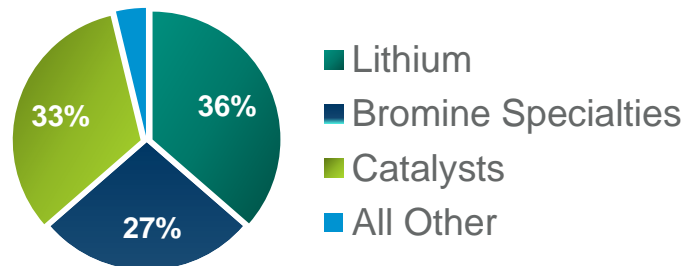
Financial Highlights⁴

Twelve Months Ended December 31, 2018

Net Sales	\$3.4B
Net Income ⁵	\$694M
Adj. EBITDA	\$1,007M
Adj. EBITDA Margin	30%

Net Sales by Segment⁴

Twelve Months Ended December 31, 2018



¹Based on destinations of FY2018 product sales.

²\$89.26 closing price as of February 21, 2019; annualized dividend of \$1.47 per share announced February 26, 2019.

³\$89.26 closing price as of February 21, 2019; 105,616 million diluted shares outstanding as of December 31, 2018.

⁴Includes financial contribution from Polyolefin Catalysts & components business divested April 3, 2018.

⁵Attributable to Albemarle Corporation.

2018 was another step towards strategy announced in 2017

Grow



Invest in Lithium to meet market demand

- Lithium grew adj. EBITDA 19%
- La Negra III / IV expansion on track for 2020 commissioning
- Started Xinyu II commissioning process
- Commenced site work at Kemerton
- Extended a number of critical long-term agreements at 2018 price levels

Maintain



Strengthen and make the most of Bromine, Catalysts and other mature businesses

- Bromine and Catalysts each contributed double digit adj. EBITDA growth¹
- SAYTEX® CP-2000 (tetrabrom) expansion at JBC

Build on manufacturing excellence and integration successes to drive efficiencies

- Implemented first of four deployments on new SAP system

2018 was another step towards strategy announced in 2017

Assess



Active and continuous assessment of our portfolio of businesses

- Completed sale of Polyolefin Catalyst & Components

Opportunities to accelerate and strengthen strategy

- Definitive agreement to form Lithium Hydroxide JV with Mineral Resources Limited
- Exercised option on Antofalla resource in Argentina and completed drilling program at Kings Mountain







Invest



Maintain a disciplined approach to capital allocation

- \$145 million in dividends; 24th consecutive year of increases
- Completed \$500 million in share buybacks
- \$700 million in CapEx for returns at least 2x cost of capital

Leadership Across Businesses Is Driven By Core Strengths

	Lithium	Bromine Specialties	Catalysts ²
Global Ranking	#1	#2	#2
Adj. EBITDA ¹	\$531M	\$288M	\$273M
Adj. EBITDA Margin ¹	43%	31%	25%
Key Competitors	 	 	 
Advantages	Globally Diversified, Low Cost Resources; Leading Processing and Application Expertise; Customer Relationships	Globally Diversified, Low Cost Resources; Integrated Product Portfolio	Leading Technology and Application Expertise; Product Stewardship; Customer Relationships

Bromine Specialties Snapshot

Annual Financials

Twelve Months Ended December 31, 2018

Net Sales	\$918M
Adj. EBITDA	\$288M
Adj. EBITDA Margin	31%

Characteristics

- Mineral extraction and processing
- Low-cost position on global cost curve
- Vertically integrated
- Stable and sustainable cash flow

Applications



- Flame retardants for electronics and construction materials
- Completion fluids for oilfield
- Industrial water treatment
- Plastic and synthetic rubber
- Ag and pharma synthesis

Business Environment

- Stable flame retardants demand across electronics, construction and automotive
- Current completion fluid weakness due to oil prices, with a favorable and long-term outlook
- Excess bromine capacity is limited to few suppliers

Advantaged Position. Stable End Markets. Strong Sustainable Cash Flow.

Catalysts Snapshot

Annual Financials¹

Twelve Months Ended December 31, 2018

Net Sales	\$1,074M
Adj. EBITDA	\$273M
Adj. EBITDA Margin	25%

Characteristics

- Leading positions in FCC and HPC catalysts
- Technology and applications knowledge
- Focused on value creation for refiners
- Long-term, collaborative customer relationships
- High barriers-to-entry
- Strong free cash flow¹ generation with growth
- Safety, scale and technical service

Fluid Cracking Catalysts (FCC)

FCC Catalyst

- Cracks oil feedstock
- Makes gasoline
- Makes propylene

Clean Fuels Technology (CFT)

HPC Catalyst

- Removes sulfur and contaminants
- Makes clean diesel
- Makes clean oil-feedstock

Alkylation & Isomerization Catalyst

- Makes clean high-octane gasoline

Polymer Catalyst Solutions (PCS)

PCS

- Polymers
- Rubbers
- Pharma Synthesis
- Coatings

Leadership in FCC and HPC catalysts with High Margin Business with High Barriers-to-Entry

Lithium Snapshot

Annual Financials

Twelve Months Ended December 31, 2018

Net Sales	\$1,228M
Adj. EBITDA	\$531M
Adj. EBITDA Margin	43%

Characteristics

- Mining and specialty chemicals capability
- Vertically integrated from natural resource to specialty performance products
- Low cost position globally

Applications

- Energy storage (Batteries)
- Glasses and Ceramics
- Greases and Lubricants
- Pharmaceutical Synthesis
- Polyolefins and Elastomers



Business Environment

- Volume growth driven by energy storage
- Public policy accelerating e-mobility / renewables
- Battery cost declining / performance improving
- Long-term supply agreements becoming industry standard

Best-In-Class Resources Coupled with Derivatives Expertise Are Differentiators

Energy Storage Continues to Drive Lithium Demand

Demand by Application (kT LCE)		2018 Estimate	'18 – '25 CAGR	2025 Forecast
Electric Vehicles BEV & PHEV	Energy Storage	70	36%	610
Other Mobility e-buses, e-trucks & other		25	22%	100
Consumer Electronics		45	10%	90
Grid Storage (ESS)		10	29%	60
All Other/Industrial		120	2%	140
Total Lithium Demand		270	21%	1,000

Electric Vehicle Demand Buildup		2018 Estimate	2025 Forecast
EV Penetration % of New Car Sales	PHEV	0.5%	6.0%
	BEV	1.5%	8.5%
	All EVs	2.0%	15%
Battery Size kWh per EV	PHEV	12	14
	BEV	44	60
	Average	32	41
Lithium Demand kT LCE	PHEV	9	85
	BEV	61	525
	Total	70	610

kT LCE

1,400

1,200

1,000

800

600

400

200

0

2015

2017

2019

2021

2023

2025

175

198

220

270

**Total Lithium Market Demand
Albemarle Estimates**

2019
Estimate
and Range

2018 Estimate

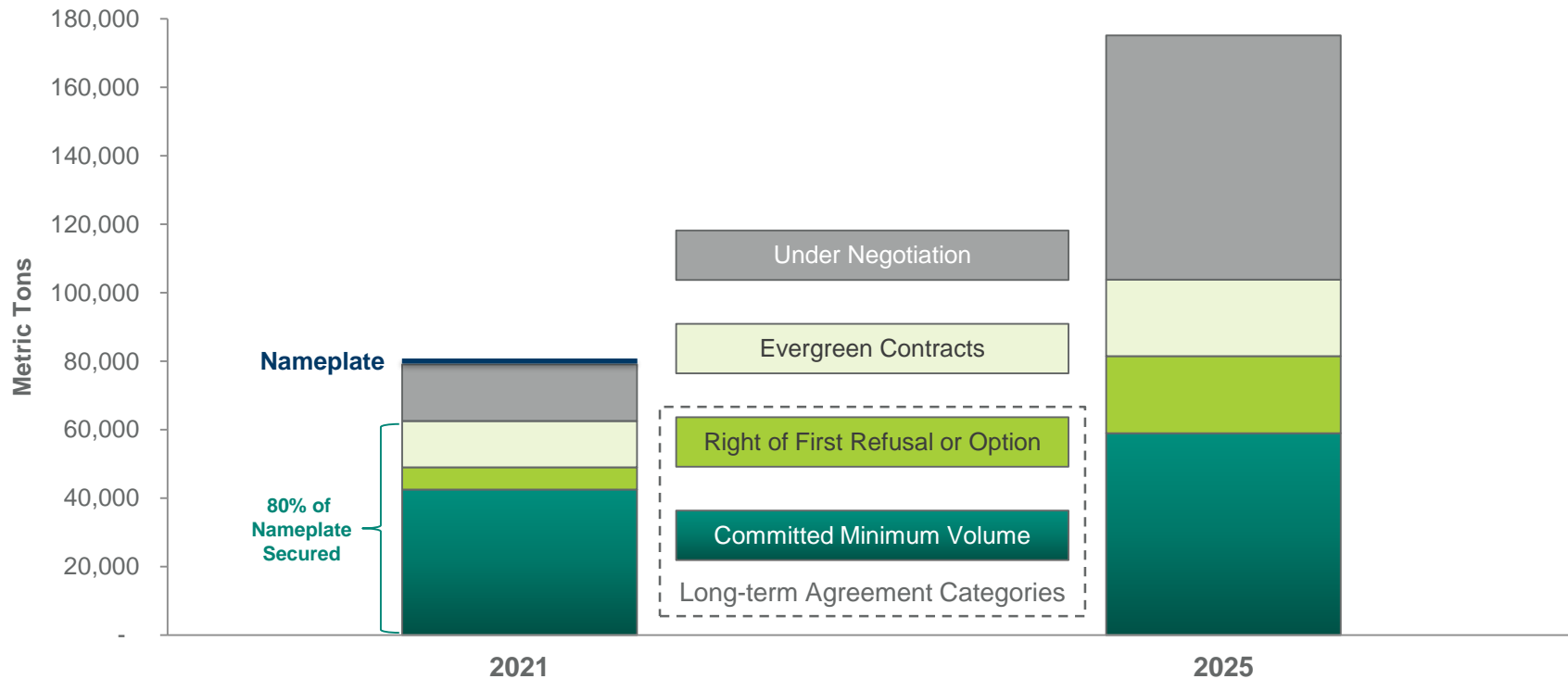
2017 Estimate

2015 Estimate

Lithium Intensity: 0.95 and 0.93 kg LCE/kWh in 2018 and 2025, respectively; New Car Sales: 95 and 109 million in 2018 and 2025, respectively

Lithium Hydroxide Under Contract

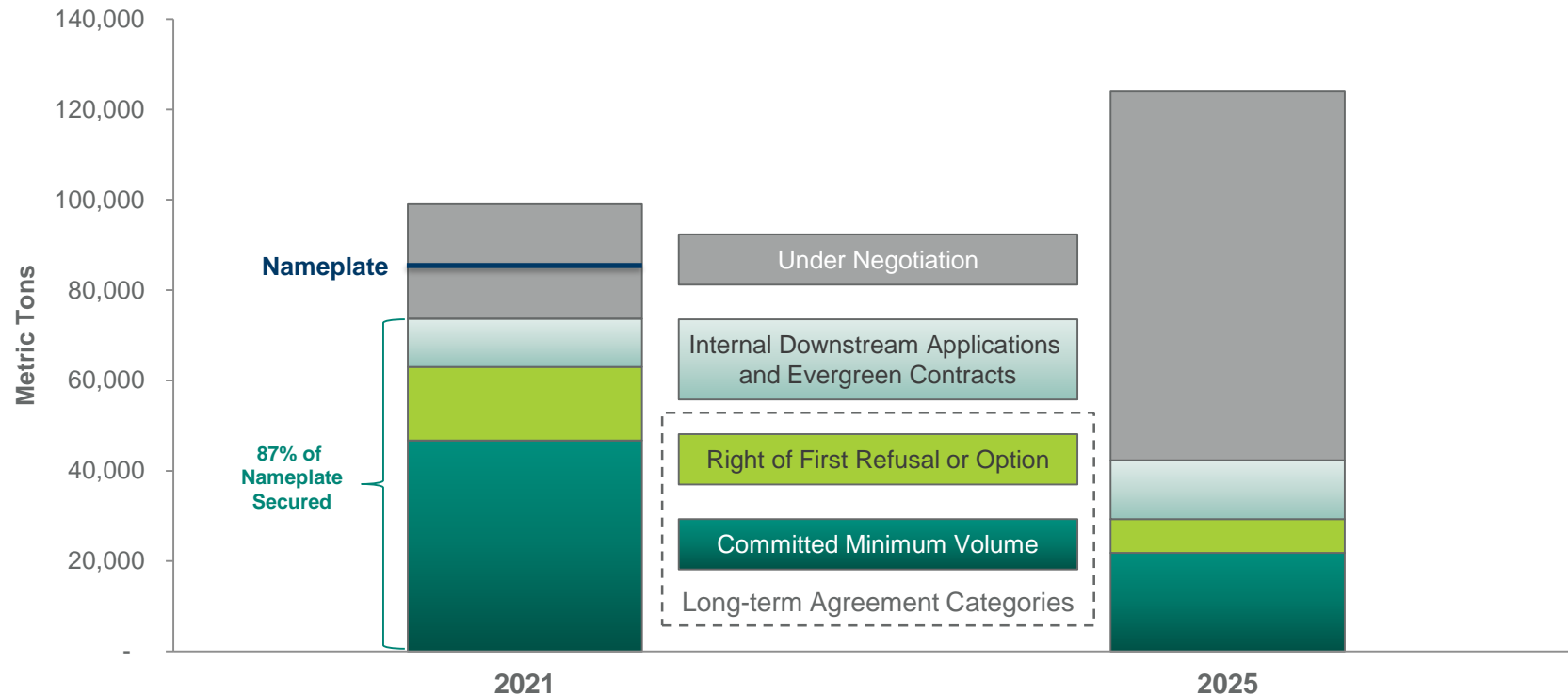
As of November 7th, 2018



2021 and 2025 sales price for Committed Minimum Volume is equal to or greater than the 2018 average selling price

Lithium Carbonate Under Contract

As of November 7th, 2018



2021 and 2025 sales price for Committed Minimum Volume is equal to or greater than the 2018 average selling price

Lithium Contract Definitions

Committed Minimum Volume: The minimum volume that customer has committed to purchase under long-term agreement.

Right of First Refusal (ROFR): If customer has demand above the **Committed Minimum Volume**, it must offer that volume to Albemarle. Albemarle has the option, but is not required, to supply this volume.

Option: Customer demand above the **Committed Minimum Volume** and **ROFR** categories. Albemarle has the option, but is not required, to supply this volume.

Evergreen Contracts: One to two-year contracts with customers (the majority for use in greases, ceramics and lubricants) with evergreen provisions, many of which have already extended beyond their initial term. Contracts with evergreen provisions are automatically renewed (rolled over) after the then expiring term until cancelled by either party.

Internal Downstream Applications: Lithium volume that is converted by Albemarle to downstream derivatives such as lithium hydroxide, butyl lithium, lithium metal and lithium halides.

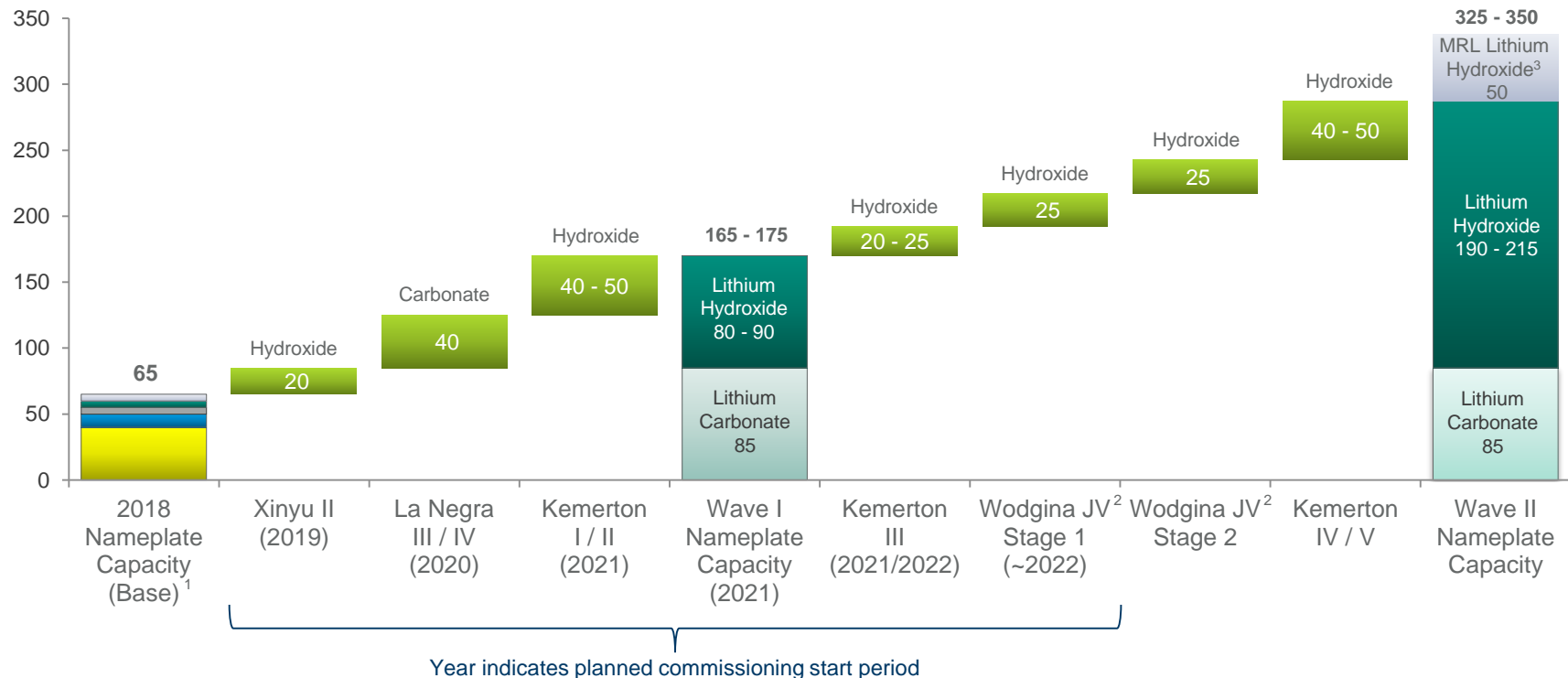
Chile Regulatory Environment and Status

	Chile Environmental Superintendent (SMA)	Chile's Economic Development Agency (CORFO)	The Chilean Nuclear Energy Commission (CCHEN)
Regulatory Authority	Enforces operating permit that defines brine pump rate at the Salar de Atacama	Authorizes production of lithium	Authorizes sales of lithium
Permits and Agreements	January 2016 Permit: Allows Albemarle to pump brine at an annual average rate of 442 liters per second by the end of 2018. This permit expires in 2044.	Original Agreement: 0.6 million LCE remaining as of January 2017 January 2017 Amendment: Provides Albemarle with authorization to produce an incremental 1.4 million MTs LCE March 2018 Amendment: If Albemarle elects to build Chile V / VI, allows Albemarle to produce an incremental 1.4 million MTs LCE	January 2017 Authorization: Authorizes sale of lithium production quota granted by CORFO in January 2017 Amendment. March 2018: Simultaneous with March 2018 CORFO Amendment, Albemarle submitted request to increase the lithium sales authorization September 2018: CCHEN rejected March 2018 submission November 2018: Albemarle working with CCHEN to address concerns prior to re-submission
Estimated Annual Volume through 2043 (MTs LCE per year)	80,000 at current lithium yield; SMA enforces brine pump rate, not lithium production quota	80,000 ¹ ; increases up to 145,000 ¹ if Albemarle builds Chile V / VI	80,000 ¹ with current authorization; would increase up to 145,000 ¹ when new submission is approved

Albemarle has the permits, agreements and authorizations in place to produce and sell at least 80,000 MTs annually through 2043

Wave I & II Conversion Capacity Plan

All figures in kt LCE and represent estimates of lithium nameplate conversion capacity



¹Conversion capacity does not include approximately 10 kt LCE of technical grade spodumene to non-battery applications.

²Represents ALB 50% share of Wodgina JV capacity, subject to transaction closing.

³Represents MRL 50% share of Wodgina JV that ALB would have 100% marketing responsibility for upon transaction closing.

Cash Flow and Net Debt

Twelve Months Ended December 31

(\$ in millions)

	<u>2018</u>	<u>2017</u>
Net Cash from Operations	\$546	\$304
Less: Capital Expenditures	(700)	(318)
Add Back: Pension Contributions ¹	15	21
Free Cash Flow	(\$139)	\$7

Selected Financial Metrics

(\$ in millions)

(as of 12/31/2018)

Dividends Paid:	\$145
Dividend Growth (Y/Y)²:	5%
Cash Balance:	\$555
Gross Debt³:	\$1,705

Net Debt to Adj. EBITDA⁴



Completed two accelerated share repurchase programs in 2018 totaling \$500 million

Disciplined Capital Allocation Strategy – Our Priorities

Invest for Growth, Maintain Flexibility and Deliver Shareholder Value

Invest for Growth in High Return Projects

- Strategically grow Lithium

Disciplined M&A Strategy

- Must support or accelerate our strategy

Maintain Investment Grade Rating

- Long-term Net Debt to Adjusted EBITDA¹ Target: 2.0x – 2.5x

Fund Dividend Growth

- Increase dividend annually: 24 consecutive years since going public in 1994

Repurchase Shares

- When excess balance sheet capability available

Albemarle Is Well Positioned to Maximize Long-Term Shareholder Value Creation

- 1 Multi-year journey has resulted in a more focused and growth-oriented portfolio underpinned by energy efficiency macro drivers
- 2 Clear strategy with the people, cash generation and resources necessary to execute the strategy
- 3 Experienced and focused management team with clear deliverables
- 4 Actively managing our portfolio in a disciplined and focused manner to drive shareholder value
- 5 Strong balance sheet and disciplined approach to capital allocation with focus on highest returns (reinvestment, strategic acquisitions and returns to shareholders)




Appendix A

Guidance as per Q4 2018 Earnings Released
February 20, 2019



Full Year 2019 Business Guidance vs 2018

As of February 20, 2019

Business Unit	Outlook	Business Environment
Lithium		<ul style="list-style-type: none"> Adj. EBITDA expected to increase slightly more than 20% vs prior year Favorable outlook driven by volume growth and flat to inflationary price increases Increased costs related to plant startups and higher tolled volumes; expect adj. EBITDA margins to remain above 40%
Bromine Specialties		<ul style="list-style-type: none"> Adj. EBITDA expected to be flat vs prior year Outlook driven by stable demand across portfolio Historically, Bromine segment impacted earliest and most negatively by economic slowdown
Catalysts ¹		<ul style="list-style-type: none"> Adj. EBITDA expected to be flat vs prior year on a pro-forma¹ basis PCS headwind of \$11 million adj. EBITDA in 2019 from loss of customer contract Refining Catalysts adj. EBITDA expected to be up mid single digit, excluding 2018 one-time settlements of ~\$9 million

 Better than 2018  Flat vs 2018

Full Year 2019 Guidance vs 2018

As of February 20, 2019

	FY 2018	FY 2018 Pro-forma ¹	FY 2019 Guidance	2019 Guidance vs FY 2018 Pro-Forma ¹
Net Sales	\$3.37B	\$3.35B	\$3.65B – \$3.85B	9% – 15%
Adjusted EBITDA	\$1,007M	\$996M	\$1,070M – \$1,140M	7% – 14%
Adjusted EBITDA Margin	30%	30%	29% – 31%	
Adjusted Diluted EPS	\$5.48	\$5.43	\$6.10 – \$6.50	12% – 20%
Net Cash from Operations	\$546M	\$535M	\$700M – \$800M	40% – 50%
Capital Expenditures	\$700M	\$700M	\$800M – \$900M	

**Expect earnings to ramp throughout 2019 with second half stronger than first half
Q1 2019 expected to be flat YoY on pro-forma¹ basis**

Additional Inputs for 2019 Plan

(\$ in millions)

	FY 2018	FY 2019 Estimate	Comments
Depreciation and amortization	\$201	\$210 – \$215	
Adjusted effective income tax rate	21.6%	22% – 24%	Geographic mix results in higher tax rate YoY
Corporate Costs	\$112	\$115 – \$120	YoY increase due to low bonus payout in 2018
Interest and financing expenses	\$52	\$40 – \$50	
Weighted-average common shares outstanding – diluted	109M	~107M	YoY decrease due to \$500 million in share buybacks in 2018

Appendix B

Non-GAAP Reconciliations and
Supplemental Information

Definitions of Non-GAAP Measures

Non-GAAP Measure	Description
Adjusted net income	Net income attributable to Albemarle Corporation before non-recurring, other unusual and non-operating pension and OPEB.
Pro-forma adjusted net income	Net income attributable to Albemarle Corporation before non-recurring, other unusual and non-operating pension and OPEB items, and the net impact of the divested business.
Adjusted diluted EPS	Diluted EPS before non-recurring, other unusual and non-operating pension and OPEB.
Pro-form adjusted diluted EPS	Diluted EPS before non-recurring, other unusual and non-operating pension and OPEB items, and the net impact of the divested business.
EBITDA	Net income attributable to Albemarle Corporation before interest and financing expenses, income taxes, and depreciation and amortization.
Adjusted EBITDA	EBITDA before non-recurring, other unusual and non-operating pension and OPEB.
Adjusted EBITDA margin	Net Sales divided by adjusted EBITDA.
Pro-forma adjusted EBITDA	Adjusted EBITDA before the net impact of EBITDA of the divested business.
Pro-forma Net Sales	Net Sales before the impact of Net Sales from the divested business.
Pro-forma Adjusted EBITDA margin	Pro-forma Net Sales divided by pro-forma adjusted EBITDA
Adjusted Effective Income Tax Rate	Reported effective income tax rate before the tax impact of non-recurring, other unusual and non-operating pension and OPEB items.

Net Income (loss)

	Three Months Ended December 31,		Year Ended December 31,	
	2018	2017	2018	2017
<i>(\$ in thousands)</i>				
Net income (loss) attributable to Albemarle Corporation	\$ 129,596	\$ (218,366)	\$ 693,562	\$ 54,850
Add back:				
Non-operating pension and OPEB items (net of tax)	8,829	(8,455)	3,234	(10,548)
Non-recurring and other unusual items (net of tax)	25,291	376,641	(96,440)	471,559
Adjusted net income attributable to Albemarle Corporation	163,716	149,820	600,356	515,861
Pro-forma: Net impact of (income) from non-cash FX gain (net of tax)	—	—	—	—
Pro-forma: Net impact of income from divested businesses (net of tax)	—	(8,448)	(6,242)	(21,615)
Pro-forma adjusted net income	163,716	141,372	594,114	494,246
Adjusted diluted earnings per share	\$ 1.53	\$ 1.34	\$ 5.48	\$ 4.59
Pro-forma adjusted diluted earnings per share	\$ 1.53	\$ 1.26	\$ 5.43	\$ 4.40
Weighted-average common shares outstanding – diluted	107,005	112,152	109,458	112,380

See above for a reconciliation of adjusted net income (loss), and pro-forma adjusted net income, the non-GAAP financial measures, to Net income (loss) attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with GAAP. Adjusted earnings is defined as Net income attributable to Albemarle Corporation before discontinued operations and the non-recurring, other unusual and non-operating pension and OPEB items as listed above. Pro-forma adjusted net income is defined as Net income attributable to Albemarle Corporation before discontinued operations and the non-recurring, other unusual and non-operating pension and OPEB items, and the net impact of divested businesses.

EBITDA

	Three Months Ended December 31,		Year Ended December 31,	
	2018	2017	2018	2017
(\$ in thousands)				
Net income (loss) attributable to Albemarle Corporation	\$ 129,596	\$ (218,366)	\$ 693,562	\$ 54,850
Add back:				
Interest and financing expenses	12,571	16,455	52,405	115,350
Income tax expense	11,196	378,221	144,826	431,817
Depreciation and amortization	50,187	52,841	200,698	196,928
EBITDA	203,550	229,151	1,091,491	798,945
Non-operating pension and OPEB items	11,881	(12,981)	5,285	(16,125)
Non-recurring and other unusual items (excluding items associated with interest expense)	48,871	29,610	(90,112)	102,660
Adjusted EBITDA	\$ 264,302	\$ 245,780	\$ 1,006,664	\$ 885,480
Pro-forma: Net impact of adjusted EBITDA from divested businesses	—	(10,156)	(10,872)	(37,123)
Pro-forma adjusted EBITDA	\$ 264,302	\$ 235,624	\$ 995,792	\$ 848,357
Net sales	\$ 921,699	\$ 857,789	\$ 3,374,950	\$ 3,071,976
Pro-forma: Net impact of net sales from divested businesses	—	(26,224)	(27,082)	(99,491)
Pro-forma net sales	\$ 921,699	\$ 831,565	\$ 3,347,868	\$ 2,972,485
EBITDA margin	22.1%	26.7%	32.3%	26.0%
Adjusted EBITDA margin	28.7%	28.7%	29.8%	28.8%
Pro-forma adjusted EBITDA margin	28.7%	28.3%	29.7%	28.5%
Year-over-year difference in Pro-forma adjusted EBITDA margin	34 bps		120 bps	

See above for a reconciliation of EBITDA, adjusted EBITDA, and pro-forma adjusted EBITDA, the non-GAAP financial measures, to Net income (loss) attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with GAAP. EBITDA is defined as Net income attributable to Albemarle Corporation before interest and financing expenses, income taxes, depreciation and amortization. Adjusted EBITDA is defined as EBITDA before discontinued operations and the non-recurring, other unusual and non-operating pension and OPEB items as listed below. Pro-forma adjusted EBITDA is defined as adjusted EBITDA before the net impact of EBITDA from divested businesses.

EBITDA - by Segment (twelve-months ended Dec 31)

(\$ in thousands)

	Lithium	Bromine Specialties	Catalysts	Reportable Segments Total	All Other	Corporate	Consolidated Total
Year ended December 31, 2018:							
Net income (loss) attributable to Albemarle Corporation	\$ 428,212	\$ 246,509	\$ 445,604	\$ 1,120,325	\$ 6,018	\$ (432,781)	\$ 693,562
Depreciation and amortization	95,193	41,607	49,131	185,931	8,073	6,694	200,698
Non-recurring and other unusual items	7,368	—	(210,428)	(203,060)	—	112,948	(90,112)
Interest and financing expenses	—	—	—	—	—	52,405	52,405
Income tax expense	—	—	—	—	—	144,826	144,826
Non-operating pension and OPEB items	—	—	—	—	—	5,285	5,285
Adjusted EBITDA	\$ 530,773	\$ 288,116	\$ 284,307	\$ 1,103,196	\$ 14,091	\$ (110,623)	\$ 1,006,664
Pro-forma: Net impact of adjusted EBITDA from divested business	—	—	(10,872)	(10,872)	—	—	(10,872)
Pro-forma adjusted EBITDA	\$ 530,773	\$ 288,116	\$ 273,435	\$ 1,092,324	\$ 14,091	\$ (110,623)	\$ 995,792
Year ended December 31, 2017:							
Net income (loss) attributable to Albemarle Corporation	\$ 342,992	\$ 218,839	\$ 230,665	\$ 792,496	\$ 5,521	\$ (743,167)	\$ 54,850
Depreciation and amortization	87,879	40,062	54,468	182,409	8,357	6,162	196,928
Non-recurring and other unusual items (excluding items associated with interest expense)	15,781	—	(1,250)	14,531	—	88,129	102,660
Interest and financing expenses	—	—	—	—	—	115,350	115,350
Income tax expense	—	—	—	—	—	431,817	431,817
Non-operating pension and OPEB items	—	—	—	—	—	(16,125)	(16,125)
Adjusted EBITDA	\$ 446,652	\$ 258,901	\$ 283,883	\$ 989,436	\$ 13,878	\$ (117,834)	\$ 885,480
Pro-forma: Net impact of adjusted EBITDA from divested business	—	—	(37,123)	(37,123)	—	—	(37,123)
Pro-forma adjusted EBITDA	\$ 446,652	\$ 258,901	\$ 246,760	\$ 952,313	\$ 13,878	\$ (117,834)	\$ 848,357

See above for a reconciliation of adjusted EBITDA on a segment basis, the non-GAAP financial measure, to net income attributable to Albemarle Corporation ("earnings"), the most directly comparable financial measure calculated and reporting in accordance with GAAP. Adjusted earnings on a segment basis is defined as earnings before discontinued operations and the special and non-operating pension and OPEB items as listed above. EBITDA is defined as earnings before interest and financing expenses, income taxes, and depreciation and amortization. Adjusted EBITDA is defined as EBITDA before discontinued operations and the non-recurring, other unusual and non-operating pension and OPEB items as listed above.

EBITDA - Margin by Segment (twelve-months ended Dec 31)

(\$ in thousands)

	Lithium	Bromine Specialties	Catalysts	Reportable Segments Total	All Other	Consolidated Total
Year ended December 31, 2018:						
Net sales	\$ 1,228,171	\$ 917,880	\$ 1,101,554	\$ 3,247,605	\$ 127,186	\$ 3,374,950
Net income (loss) attributable to Albemarle Corporation	34.9%	26.9%	40.5%	34.5%	4.7%	20.6%
Depreciation and amortization	7.8%	4.5%	4.5%	5.7%	6.3%	5.9%
Non-recurring and other unusual items	0.6%	—%	(19.1)%	(6.3)%	—%	(2.7)%
Interest and financing expenses	—%	—%	—%	—%	—%	1.5%
Income tax expense	—%	—%	—%	—%	—%	4.3%
Non-operating pension and OPEB items	—%	—%	—%	—%	—%	0.2%
Adjusted EBITDA Margin	43.2%	31.4%	25.8%	34.0%	11.1%	29.8%
Year ended December 31, 2017:						
Net sales	\$ 1,018,885	\$ 855,143	\$ 1,067,572	\$ 2,941,600	\$ 128,914	\$ 3,071,976
Net income (loss) attributable to Albemarle Corporation	33.7%	25.6%	21.6%	26.9%	4.3%	1.8%
Depreciation and amortization	8.6%	4.7%	5.1%	6.2%	6.5%	6.4%
Non-recurring and other unusual items (excluding items associated with interest expense)	1.5%	—%	(0.1)%	0.5%	—%	3.3%
Interest and financing expenses	—%	—%	—%	—%	—%	3.7%
Income tax expense	—%	—%	—%	—%	—%	14.1%
Non-operating pension and OPEB items	—%	—%	—%	—%	—%	(0.5)%
Adjusted EBITDA Margin	43.8%	30.3%	26.6%	33.6%	10.8%	28.8%

See above for adjusted EBITDA margin, a non-GAAP financial measure defined as adjusted EBITDA divided by net sales. See slide 28 for the related reconciliation of adjusted EBITDA on a segment basis, the non-GAAP financial measure, to net income attributable to Albemarle Corporation ("earnings"), the most directly comparable financial measure calculated and reporting in accordance with GAAP.

Consolidated Total includes net sales from Corporate (not shown) of \$159 and \$1,462 in the twelve months ended December 31, 2018 and 2017, respectively.

EBITDA supplemental¹

(\$ in thousands)

	Twelve Months Ended	Three Months Ended			
	Dec 31, 2018	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
Adjusted EBITDA	\$ 1,006,664	\$ 264,302	\$ 235,082	\$ 258,562	\$ 248,718
Net income attributable to noncontrolling interests	45,577	16,453	13,734	8,225	7,165
Equity in net income of unconsolidated investments (net of tax)	(89,264)	(27,537)	(22,081)	(18,969)	(20,677)
Dividends received from unconsolidated investments	57,415	24,621	2,749	4,583	25,462
Consolidated EBITDA	\$ 1,020,392	\$ 277,839	\$ 229,484	\$ 252,401	\$ 260,668
Total Long Term Debt (as reported)	\$ 1,705,210				
Off balance sheet obligations and other	71,800				
Consolidated Funded Debt	\$ 1,777,010				
Less Cash	555,320				
Consolidated Funded Net Debt	\$ 1,221,690				
Consolidated Funded Debt to Consolidated EBITDA Ratio	1.7				
Consolidated Funded Net Debt to Consolidated EBITDA Ratio	1.2				

¹ This supplemental is for net-debt-to-adjusted EBITDA ratio based on the bank covenant definition.

Diluted EPS

	Three Months Ended		Year Ended	
	December 31,		December 31,	
	2018	2017	2018	2017
Diluted earnings (loss) per share	\$ 1.21	\$ (1.95)	\$ 6.34	\$ 0.49
Add back:				
Non-operating pension and OPEB items ^(a)	0.08	(0.08)	0.03	(0.09)
Non-recurring and other unusual items (net of tax)				
Utilization of inventory markup	—	—	—	0.15
Restructuring and other	—	(0.01)	0.03	0.11
Acquisition and integration related costs	0.05	0.06	0.14	0.24
Albemarle Foundation contribution	—	—	0.11	—
Gain on sale of business	0.06	—	(1.55)	—
Gain on acquisition	—	0.01	—	(0.04)
Legal accrual	—	—	0.21	—
Environmental accrual	—	—	0.11	—
Loss on extinguishment of debt	—	(0.04)	—	0.30
Indemnification adjustments	0.23	—	0.23	—
Note receivable reserve	—	0.18	—	0.18
Other	0.07	(0.02)	0.11	0.06
Discrete tax items	(0.17)	3.18	(0.27)	3.20
Total non-recurring and other unusual items	0.24	3.36	(0.88)	4.20
Adjusted diluted earnings per share ¹	\$ 1.53	\$ 1.34	\$ 5.48	\$ 4.59

¹Totals may not add due to rounding

Effective Tax Rate

(\$ in thousands)	Income before income taxes and equity in net income of unconsolidated investments	Income tax expense	Effective income tax rate
Three months ended December 31, 2018:			
As reported	\$ 129,708	\$ 11,196	8.6%
Non-recurring, other unusual and non-operating pension and OPEB items	60,752	26,632	
As adjusted	<u>\$ 190,460</u>	<u>\$ 37,828</u>	19.9%
Three months ended December 31, 2017:			
As reported	\$ 141,926	\$ 378,221	266.5%
Non-recurring, other unusual and non-operating pension and OPEB items	16,629	(351,557)	
As adjusted	<u>\$ 158,555</u>	<u>\$ 26,664</u>	16.8%
Year ended December 31, 2018:			
As reported	\$ 794,701	\$ 144,826	18.2%
Non-recurring, other unusual and non-operating pension and OPEB items	(84,827)	8,379	
As adjusted	<u>\$ 709,874</u>	<u>\$ 153,205</u>	21.6%
Year ended December 31, 2017:			
As reported	\$ 446,798	\$ 431,817	96.6%
Non-recurring, other unusual and non-operating pension and OPEB items	139,336	(321,675)	
As adjusted	<u>\$ 586,134</u>	<u>\$ 110,142</u>	18.8%

See above for a reconciliation of the adjusted effective income tax rate, the non-GAAP financial measure, to the effective income tax rate, the most directly comparable financial measure calculated and reporting in accordance with GAAP.

Equity Income and Noncontrolling Interest

	Three Months Ended December 31,				Year Ended December 31,			
	2018		2017		2018		2017	
	Equity Income	Noncontrolling Interest	Equity Income	Noncontrolling Interest	Equity Income	Noncontrolling Interest	Equity Income	Noncontrolling Interest
(\$ in thousands)								
Lithium	\$ 22,580	\$ —	\$ 24,781	\$ —	\$ 71,399	\$ —	\$ 64,780	\$ —
Bromine Specialties	—	(16,451)	—	(11,332)	—	(45,524)	—	(44,663)
Catalysts	4,957	—	4,443	—	17,865	—	19,707	—
All Other	—	—	—	—	—	—	—	—
Corporate	—	(2)	—	37	—	(53)	—	45
Total Company	\$ 27,537	\$ (16,453)	\$ 29,224	\$ (11,295)	\$ 89,264	\$ (45,577)	\$ 84,487	\$ (44,618)



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