Albemarle Investor Day
Making the World Safe & Sustainable by Powering the Potential of People

December 12, 2019
Welcome & Opening Remarks
Forward-Looking Statements

Some of the information presented in this presentation, the investor day remarks, and discussions that follow, including, without limitation, information related to outlook and guidance, conversion capacity, production volumes, joint ventures, market trends, pricing, expected growth, earnings and demand for our products, tax rates, dividends, cash flow generation, capital projects, electric vehicle demand, 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 Adj. net income attributable to Albemarle Corporation (“Adj. earnings”), Adj. diluted earnings per share attributable to Albemarle Corporation, Adj. 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 Adj. 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.
Agenda

08:30 am  Welcome & Opening Remarks
Dave Ryan, VP, Corporate Strategy & IR

08:35 am  Update on Our Journey & Strategic Overview
Luke Kissam, CEO

09:10 am  Bromine Specialties: Strong Cash Generation with Diverse, Stable End Markets
Netha Johnson, President

09:35 am  Catalysts: Moderate Long-term Growth Driven by Large and Evolving Transportation Fuels End Market
Raphael Crawford, President

10:00 am  Q&A
Kissam, Tozier, Johnson, Crawford

10:20 am  BREAK

10:30 am  Lithium: Significant Long-term Growth Supported by Increasing Adoption of Electric Vehicles
Eric Norris, President | Dr. Glen Merfeld, CTO

11:15 am  Maintaining Our Financial Flexibility
Scott Tozier, EVP & CFO

11:40 am  Closing Remarks
Luke Kissam, Chairman & CEO

11:45 am  Q&A
All

12:30 pm  Leadership Luncheon
Update on Our Journey & Strategic Overview
An Industry Leader with Significant Opportunity Ahead

01 Industry-leading, competitively advantaged positions across our portfolio, which will expand in the future

02 Strong secular trends support long-term growth to annual Adj. EBITDA of $1.5B - $1.8B and annual FCF of ~$1B by 2024

03 Focus on product quality, talent, low-cost operations, and effective management of our resources and assets

04 Product offerings are key enablers to a more sustainable world, and we are embedding sustainability into strategic decision making

05 Financial flexibility and balance sheet strength with significant free cash flow generation on the horizon
Diversified Portfolio with Above-Market Margin

**KEY STATS**

- Founded: 1887 (132 years)
- Global Employees: ~5,600
- Countries: ~100
- Dividend Payout Ratio: 25%

**FINANCIAL HIGHLIGHTS**

- Net Sales: $3.2B
- Net Income: $608M
- Adj. EBITDA: $951M
- Adj. EBITDA Margin: 30%

**BUSINESS OVERVIEW**

Making the World Safe and Sustainable by Powering the Potential of People

<table>
<thead>
<tr>
<th>Lithium</th>
<th>Catalysts</th>
<th>Bromine Specialties</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% of Total Revenue</td>
<td>29% of Total Revenue</td>
<td>31% of Total Revenue</td>
</tr>
<tr>
<td>41% Adj. EBITDA Margin</td>
<td>27% Adj. EBITDA Margin</td>
<td>32% Adj. EBITDA Margin</td>
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<tr>
<td>~20% Industry Growth</td>
<td>~3% Industry Growth</td>
<td>~2% Industry Growth</td>
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**REVENUE BY GEOGRAPHY**

- 28% North America
- 24% EMEA
- 45% Asia (12% in China)
- 2% RoW

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1 As of Q3 2019, excluding contractors. 2 As of November 22, 2019, TTM Net Income $572M TTM plus $21M TTM restructuring and acquisition-related expense and TTM dividends paid of $149M. 3 For the 12 months ended 9/30/19. 4 Attributable to Albemarle Corporation. 5 Pro-forma excludes net impact from PCS, FCS and divested businesses. 6 TTM as of Q3 2019. 7 Projected 5-year CAGR.
Agile, Long-term Strategy that Responds to Changing Market Conditions

**Grow**
Invest in growth and focus on cash generation in Lithium

- Demand outlook remains robust for Lithium
- Continue to strengthen balance sheet to provide capacity for future options for lithium conversion assets needed to meet customer demand (build vs. buy)

**Maximize**
Optimize the earnings and cash of Bromine and Catalysts

- Generate cash, maintain Adj. EBITDA margin and levels; invest moderately in high-return opportunities
- ERP provides catalyst for more effective and efficient operations
- Reduce overall spend by $100M+ by 2021 in a sustainable manner

Build on manufacturing excellence and optimized cost structure

**Assess**
Actively and continuously assess our portfolio

- Continue to actively evaluate portfolio
- Look to acquire existing lithium conversion assets if the economics make sense and it creates higher ROIC than building

**Invest**
Maintain a disciplined approach to capital allocation while preserving financial flexibility

- Maintain Investment Grade credit rating and support continued dividend growth
- Invest to accelerate productivity improvements and to build or buy lithium conversion assets; current board authorization to repurchase up to 7M shares
Diverse and Dedicated Leadership Team Focused on Delivering Shareholder Value through All Economic Scenarios

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Industry Experience</th>
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<tbody>
<tr>
<td>Luke Kissam</td>
<td>Chairman &amp; CEO</td>
<td>30 years</td>
</tr>
<tr>
<td>Scott Tozier</td>
<td>EVP &amp; CFO</td>
<td>31 years</td>
</tr>
<tr>
<td>Karen Narwold</td>
<td>EVP &amp; CAO</td>
<td>29 years</td>
</tr>
<tr>
<td>Eric Norris</td>
<td>President, Lithium</td>
<td>28 years</td>
</tr>
<tr>
<td>Netha Johnson</td>
<td>President, Bromine</td>
<td>27 years</td>
</tr>
<tr>
<td>Raphael Crawford</td>
<td>President, Catalysts</td>
<td>22 years</td>
</tr>
<tr>
<td>DeeAnne Marlow</td>
<td>Chief Human Resources Officer</td>
<td>32 years</td>
</tr>
<tr>
<td>Dave Ryan</td>
<td>VP, Corporate Strategy &amp; IR</td>
<td>28 years</td>
</tr>
<tr>
<td>Jac Fourie</td>
<td>VP, Engineering &amp; Project Execution</td>
<td>21 years</td>
</tr>
<tr>
<td>Tom Thomas</td>
<td>VP, Integrated Business Operations</td>
<td>37 years</td>
</tr>
<tr>
<td>Michael Brown</td>
<td>VP, Global HSE &amp; Operational Excellence</td>
<td>22 years</td>
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New within Last 2 Years
Engaged, Diverse, and Accountable Board of Directors

New directors bring targeted and valuable expertise and experience

- Mining and natural resources
- Automotive, electric grid, and chemical operations
- Strategic, financial, and operational responsibility

Laurie Brlas
Former EVP & CFO, Newmont Mining

Kent Masters
Former CEO, Foster Wheeler

Diarmuid O’Connell
Former VP, Corporate & Business Development, Tesla Motors

Harriett “Tee” Taggart
Consultant; Former Partner, Wellington Management

Bill Hernandez
Former SVP, Finance & CFO, PPG Industries

Glenda Minor
CEO & Principal, Silket Advisory Services
Former SVP & CFO, Evraz North America

Dean Seavers
President, National Grid U.S.

Holly Van Deursen
Former Group President, Petrochemicals, BP

Doug Maine
Former CFO, IBM and MCI

James O’Brien
Former Chairman & CEO, Ashland Inc.

Gerald Steiner
CEO & Member of Board of Managers, CoverCress Inc.
Former EVP, Sustainability & Corporate Affairs, Monsanto Co.

Alejandro Wolff
Former U.S. Ambassador to Chile

New Board Member since 2017
Retiring in May 2020
Director Capabilities and Experience Support Our Long-term Vision

- **Global / Emerging Markets Experience**: 100%
- **Relevant Industry Experience**: 85%
- **P&L Experience**: 85%
- **Manufacturing / Operations Experience**: 69%
- **R&D / Innovation Experience**: 69%
- **Supply Chain / Logistics Experience**: 54%
- **Public Company CEO or COO**: 38%

<5 yrs. Average Tenure
12 of 13 Independence
7 of 13 Diversity
Our Legacy: Executing Long-term Strategy to Build Industry-leading Company with Growth-oriented Portfolio

**1998 - 2004**
- Formed Jordan Bromine Co. JV (’98)
  - Established global leadership position
- Acquired Akzo Nobel N.V.’s refinery catalyst business (’04)
  - Expanded catalyst business into refining

**2012 - 2016**
- Acquired Rockwood (’15)
  - Entered high growth lithium market
- Acquired Jiangxi Jiangli New Materials (’16)
  - Chinese lithium conversion capacity
- Finalized pumping permit and quota amendment in Chile (’16)
  - Advanced lithium growth strategy

**2017 - 2019**
- Developed new technology to increase the yield of Lithium from brine in Chile (’17)
- Launched Granite™ (’17)
  - A new technology for catalyst market
- Broke ground in Lithium Carbonate Conversion La Negra III / IV (+40kT) (’17)
- Completed Saytex® CP2000 (Tetrabrom) expansion at JBC (’18)
- Completed Lithium Hydroxide Expansion in China (’19)
  - +20kT at Xinyu
- Broke ground in Lithium Hydroxide Conversion in Australia (’19)
  - 50kT at Kemerton
- Introduced Celestia™ (’19)
  - A new ultra-high activity hydrotreating catalyst for increased flexibility and profitability
- MARBL JV (’19)
  - Executed advanced lithium growth strategy
- Exploring strategic options for fine chemistry services and performance catalyst solutions

**Bold and Deliberate Steps Taken to Architect Current Portfolio**

- **Exited Phosphorous (’12)**
  - business and **divested** AOX (’14)
  - Non-core businesses
- **Divested Minerals, Metal Sulfides and Chemetall Surface Treatment (’16)**
  - Used proceeds to reduce debt, strengthen balance sheet and invest in Lithium assets
On Track to Achieve 2021 Targets Announced at 2017 Investor Day

<table>
<thead>
<tr>
<th>2021 TARGETS AT 2017 ID</th>
<th>2019E RESULTS</th>
<th>STATUS</th>
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<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>$3.75B (7% - 10% 5-yr CAGR)</td>
<td>$3.6B - $3.7B (12% 3-yr CAGR)</td>
</tr>
<tr>
<td><strong>Adj. EBITDA(^1)</strong></td>
<td>$1.2B (10% - 15% CAGR)</td>
<td>$1.02B - $1.06B (12% 3-yr CAGR)</td>
</tr>
<tr>
<td><strong>GBU Revenue CAGR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithium</td>
<td>18% -20%</td>
<td>+27%</td>
</tr>
<tr>
<td>Bromine</td>
<td>Down / Flat</td>
<td>+8%</td>
</tr>
<tr>
<td>Catalysts(^2)</td>
<td>3%</td>
<td>+7%</td>
</tr>
<tr>
<td><strong>Free Cash Flow</strong></td>
<td>$500M - $900M</td>
<td>$(100) - $(250)</td>
</tr>
<tr>
<td><strong>2021 Li Conversion Capacity</strong></td>
<td>Grow 30kT in 2016 to 165kT by 2021</td>
<td>85kT</td>
</tr>
<tr>
<td><strong>Net Debt / Adj. EBITDA(^1,3)</strong></td>
<td>2.0x - 2.5x</td>
<td>2.6x</td>
</tr>
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</table>

\(^1\) Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures. \(^2\) Pro-forma excludes net impact from PCS and divested businesses. \(^3\) Gross Debt (excluding JV debt not guaranteed by Company) to Adj. EBITDA and Net Debt to Adj. EBITDA ratios are based on the bank covenant definition. See appendix for reconciliations.
Building on Our Capabilities to Further Strengthen Our Competitively Advantaged Position

**OPERATIONAL EXECUTION FOR LOW COST**

**BEST-IN-CLASS ASSETS**

**OUR PEOPLE & SUSTAINABLE APPROACH**

**ENABLERS OF OUTPERFORMANCE**

Support a clear strategy to further enhance our strong financial position

**TECHNICAL EXPERTISE**
Engaging Employees through a Greater Purpose

**Our Purpose**

Making the World Safe and Sustainable by Powering the Potential of People

**Our Core Values**

- CARE
- CURIOSITY
- COURAGE
- COLLABORATION
- HUMILITY
- INTEGRITY & TRANSPARENCY

**Culture Survey**

- Conducted 4,000+ surveys in January 2019 with 75% response rate
- Incorporating employee engagement surveys with a focus on increasing employee engagement

<table>
<thead>
<tr>
<th>Identified Strengths</th>
<th>Areas of Opportunity</th>
</tr>
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<tbody>
<tr>
<td><strong>89%</strong> Report a safe work environment and can elevate suggestions for action, when necessary</td>
<td>Pace of change (i.e., too fast)</td>
</tr>
<tr>
<td><strong>86%</strong> Report differing opinions are openly discussed on teams</td>
<td>Individual performance evaluations</td>
</tr>
<tr>
<td><strong>85%</strong> Feel a sense of personal accomplishment and would recommend ALB as a place to work</td>
<td>Enhanced communication efforts</td>
</tr>
<tr>
<td><strong>85%</strong> Feel immediate managers care about well being of employees</td>
<td>More efficient processes</td>
</tr>
<tr>
<td><strong>80%</strong> Believe immediate managers are receptive to new ideas</td>
<td>Transparency of cross-GBU career opportunities and activities related to promoting and retaining talent</td>
</tr>
</tbody>
</table>
Our People and Sustainable Approach

Our Products Form the Foundation and Contribute to Sustainability

LITHIUM ENABLES...
- Growth of “clean miles” driven with electric vehicles
- More efficient use of renewable energy through grid storage
- Batteries for medical devices (pacemaker, defibrillator, etc.)
- Medical imaging including tomography (CT, PET, etc.)

~60% Lithium Revenue from Energy Storage

CATALYSTS ENABLES...
- Reduced SO\textsubscript{x} and NO\textsubscript{x} emissions through cleaner transportation fuels
- Creates efficiency of natural resources through more usable products from a single barrel of oil
- Safer, greener production of alkylates used to produce more environmentally-friendly fuels

~50% Catalysts Revenue from Reduced SO\textsubscript{x} and NO\textsubscript{x}

BROMINE ENABLES...
- Prevention of fires starting in electronic equipment and delay in “flashover of fires” to increase escape time
- Greater fuel efficiency from rubber tires
- Reduction of emissions from coal fired power plants
- Reduction of food borne illnesses

>50% Bromine Revenue from Fire Prevention

Strong Sustainability Impact through Customer Value Chain
# Case Studies on Sustainability

## Environmental

**CASE STUDY:** Feed Flow Control of VESPA Product Drying Equipment

**BACKGROUND**
Bayport site-wide productivity improvement effort - VESPA team identified opportunity to improve flash dryers in VESPA unit

**ALB SOLUTION**
Improved slurry feed systems control through Coriolis meters, allowing process to reduce variability and run more efficiently

**RESULTS**
- Reduced energy usage by 9% per unit of production and reduced overall energy consumption by 9,900 MMBTU/yr and CO2 production by 530 tons annually
- Recognized by American Chemistry Council for Energy Efficiency for this project

## Social

**CASE STUDY:** Salar de Atacama, Chile Lithium Plant - Preservation of Indigenous Communities

**BACKGROUND**
Salar Lithium plant located in Atacama La Grande Indigenous Development Area and in a Touristic Interest Zone, which are both protected by law

**ALB SOLUTION**
- 2012: Formal dialogue begins with CPA
- 2014: ALB creates community relations area and signs dialogue protocol
- 2016: ALB signs cooperation agreement and participates in monitoring protocol

**RESULTS**
- Implementation of photovoltaic panels and solar water heaters in community homes
- Transport water
- Built a community HQ
- Make church repairs
- Purchase ag and industrial machinery
- Provide 350+ scholarships to students

## Governance

**CASE STUDY:** ALB Code of Conduct

**BACKGROUND**
Aug 2019: Launched new Code of Conduct aligned to our Core Values in Action

**ALB SOLUTION**
Tailored Code of Conduct for different audiences: developed an eCode, an interactive, digital version of ALB’s Code of Conduct - for employees and developed a version available for third parties and business partners on our website

**RESULTS**
Recognized by Convercent's 2019 Innovation Award for eCode - our business vendors, agents or distributors are required to adopt similar values when acting on behalf of ALB

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1 Oversees traditions, protection of environment and sustainable development of the Salar and communities.
Results of Our Materiality Assessment Led to Our Sustainability Framework

**Sustainable Business Model**
Foster a sustainable business model that creates long-term value for all stakeholders

**Community Engagement**
Actively collaborate and engage in the communities in which we work and live

**Our People & Workplace**
Promote an inclusive and diverse workplace for all employees with a focus on safety, mutual respect, development and wellbeing

**Natural Resource Management**
Responsibly manage our use of resources and materials
Portfolio Comprises World-class Resources

- Geographically Diverse
- High Quality
- Large Scale
- Low Cost

Best-in-Class Assets
Large-scale Manufacturing Footprint Serving the Globe

World-class Resources with High Concentration Levels

Geographic Diversity

Proximity to Customers

Twinsburg, OH, U.S.
Kings Mountain, NC, U.S.
Silver Peak, NV, U.S.
Magnolia, AR, U.S.
New Johnsonville, TN, U.S.
Niihama, Japan
Taichung, Taiwan
Meishan, China
Xinyu, China
Safi, Jordan
Salar de Atacama, Chile
La Negra, Chile
Santa Cruz, Brazil
Amsterdam, Netherlands
Langelsheim, Germany
Greenbushes, Australia
Long-term Growth Capture Supported by Technical Expertise

Extensive Application Know-How and Technical Service
- **Lithium**: Working with customers on next-gen cathode and anode materials
- **Bromine**: Helping customers use our flame retardants in new applications
- **Catalysts**: Helping customers increase yield and produce cleaner fuel through custom solutions

Strong Process Engineering Expertise
- Continuous improvement focus
- Quality and productivity enhancement
- Increased plant reliability and safety while reducing costs
- Reduction of energy and water consumption, reduction of waste, and GHG emissions

Growing External Ecosystem
- Keeping an eye on the future through cooperation with world-leading institutions and start-ups
- Providing innovative industry solutions through customer partnerships that combine the expertise of both parties

### Strong Ecosystem of Leading Organizations
(Selected Organizations, not exhaustive)

<table>
<thead>
<tr>
<th>National Labs &amp; Start-ups</th>
<th>Universities</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argonne National Laboratory</td>
<td>MIT Massachusetts Institute of Technology</td>
<td>SK</td>
</tr>
<tr>
<td>Pacific Northwest National Laboratory</td>
<td>Utrecht University</td>
<td>ExxonMobil</td>
</tr>
</tbody>
</table>
Continuous Improvement in Plants and Business Processes
Relentlessly Drive Customer Value and Experience
Sustainability Driven Mindset

Significant Opportunity to Deliver Value through Low-cost Operational Execution

Focusing on Competitive Advantage
- Top talent / high performance culture
- Technical expertise
- High-quality resources

Aggressively Accelerating Operational Excellence
- Lean / low-cost operations
- Efficient capital deployment
- Sustainable processes and technological improvements

Driving Commercial Excellence
- Customer integrated experience
- Local reach and service
- World-class global supply chain
- Applications expertise

Fostering Best-in-Class Customer Experience
- Security of supply
- Deep, long-term relationships
- Product breadth and depth
- "The standard" for quality and reliability

$100M+ in Cost Savings Identified
Leadership position with unparalleled, geographically diverse, and low-cost resources in Bromine and Lithium

Building a stronger organization through talent development and operational excellence

World-class process technology, chemical engineering expertise, and deep long-term customer relationships

Delivering product solutions that are essential to performance but a relatively small percentage of the overall cost of the end product

Financial flexibility and balance sheet strength
What You’ll Hear Today…

01. Strong cash flow yield

02. Global Bromine footprint with advantaged resources

03. Leader in industry segments served

04. GDP-type growth with sustainable margins
Bromine Specialties Snapshot

Financials | TTM Q3 2019

- $1.0B Net Sales
- $319M Adj. EBITDA
- 32% Adj. EBITDA Margin

Segment Characteristics

- Mineral extraction and processing
- Low-cost position on global cost curve and access to world-class natural resources
- Vertically integrated
- Consistent and sustainable margins and cash flow
- High initial capital for world-scale plants, requiring strong technical and application expertise

Strong Applications Demand

- Stable flame retardants demand across electronics, construction, and automotive
- Increasing completion fluid demand from oil industry rebound
- Textiles and packaging fuels polyester (PET) growth
- Urbanization in developing countries driving tire demand growth

Business Environment

- Flame Retardants
  - 5-year CAGR: 2%
- Clear Completion Fluids
  - 5-year CAGR: 3%
- Pharma/Ag
  - 5-year CAGR: 1%
- Synthetic Rubber/PET
  - 5-year CAGR: 2%
- Other
  - 5-year CAGR: 1%

Note: Financials for the 12 months ended September 30, 2019. ¹ Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures. ² Source: IHS Chemicals and ALB internal data.
### What We Said in 2017 and How We’re Doing

<table>
<thead>
<tr>
<th>WHAT WE SAID</th>
<th>WHAT WE DID</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GBU Revenue / Adj. EBITDA</strong>&lt;sup&gt;1&lt;/sup&gt; Margin</td>
<td>• Consistent, stable GDP-type growth</td>
<td>• &gt;10% EBITDA growth&lt;sup&gt;1&lt;/sup&gt; by capturing share of China supply opportunity</td>
</tr>
<tr>
<td><strong>Maintain Low-cost Leadership Position; Focus on Environmental Sustainability</strong></td>
<td>• Reduce costs through productivity initiatives</td>
<td>• Debottlenecking key assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Water and energy reduction projects at both manufacturing sites</td>
</tr>
<tr>
<td><strong>Expand to Support Current and Future Market Growth</strong></td>
<td>• Efficiencies to provide higher yield and security of supply</td>
<td>• JBC TBBPA (flame retardant) expansion in 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• New Bromine well online in 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Expansion of isotank fleet</td>
</tr>
<tr>
<td><strong>China Production Severely Impacted by Ongoing Regulations Starting in 2017</strong></td>
<td>• China domestic market heavily influences global supply and price</td>
<td>• Pivoted portfolio to downstream derivatives to benefit from elevated pricing levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Focused on markets with &gt;GDP growth</td>
</tr>
</tbody>
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<sup>1</sup> 2016 - Q3 2019 LTM EBITDA CAGR. Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Transforming the Bromine Molecule to Benefit Society: Estimated Global Market $2.6B in Revenue

Bromine in Our World

Global Bromine by Application

- 48% Flame Retardants
- 21% Oilfield
- 9% PET
- 2% Agriculture
- 20% Other

Source: IHS Markit and ALB Estimate.
Major Bromine End Markets Support GDP Growth

**Brominated Flame Retardants**
- Diversified markets drive stable demand
- New technology trends like 5G, EVs, IoT, and autonomous cars drive growth opportunities

**Brominated Flame Retardants Growth**

**Offshore Oilfield Industry**
- Continued offshore investment growth since 2016 lows
- Improved economics (reduced offshore cost) resulting in a greater number of investment projects

**Global Offshore Investment 2014 - 2023E**

**PET CAGR Growth**

**Polyester (PET) Industries**
- Textile and packaging market driving PET demand
- PTA catalyst capacity buildout continues to support growth projections

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Bromine Strategy: Continue to Generate Cash through Strong Client Value Proposition and Increased Focus on Efficiency

- Manage world-class, sustainable resources
- Integrated manufacturing operations

- Business model focused on the customer
- Achieve more than fair share of growth in growing applications

- Structurally reduce costs through asset efficiency and productivity
- Maximize value pricing in line with market conditions, but with an emphasis on stability
Access to High Concentration of Bromine is a Low-cost Advantage

1 Jordan Bromine Company (JBC)

- JV with Arab Potash Company (APC) - operated and marketed by Albemarle

2 Arkansas, U.S.

- Highly integrated and specialty focused - drives product flexibility and profitability

Bromine Concentration

<table>
<thead>
<tr>
<th>Source</th>
<th>Retail Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead Sea Concentrate</td>
<td>ALB &amp; ICL¹</td>
</tr>
<tr>
<td>Arkansas Concentrate</td>
<td>ALB &amp; LXS²</td>
</tr>
<tr>
<td>India Concentrate</td>
<td>LXS</td>
</tr>
<tr>
<td>China Seawater</td>
<td>LXS</td>
</tr>
</tbody>
</table>

Industrial Cost Curve for Elemental Bromine

- Relative Production Cost
- (kT) 0 100 200 300 400 500 600 700
- Dead Sea
- Arkansas, U.S.
- China
- Japan

Albemarle Operates from the Two Best Bromine Resources

¹ Israel Chemicals Ltd. (ICL); ² Lanxess Aktiengesellschaft (LXS).
Why Customers Buy from Us

OUR INTEGRATED OPERATION IS A KEY ENABLER
- Single stream of bromine can generate 16 different products for our customers
- 45% of production in Magnolia, AR is from recycled or by-product bromides
- Committed to supply and supply sustainability

MORE THAN HIGH-QUALITY PRODUCTS
- World-class health, safety, and environmental knowledge base
- Product stewardship programs demonstrate our commitment to sustainability
- Highly skilled customer application and technical service teams providing unparalleled support

BROMINE-FOCUSED WITH DEDICATED RESOURCES
- Recognized market leader
- Customer focused
- Investing in the future

PORTFOLIO DIVERSIFICATION AND ASSET INTEGRATION
- Allow us to allocate bromine to derivatives as needed to support a broad array of customers and end markets

PURVEYORS OF INSIGHTS
- Information sharing as an integral facet of how we develop customer intimacy
- Our deep understanding of the bromine and derivatives market generates value and credibility with customers
- We collect, analyze, and respond to customer feedback to enhance strategic partnerships and unlock new opportunities
Profitable Growth and Sustained Strong Cash Generation

**Capital Deployment**

Industry-leading cost position supported by capital investments in continuous process and plant improvement

- 1% utilization (OEE) improvement generates >$1.6M of EBITDA in 2020
- Anticipate $54M in annualized productivity and cost avoidance by 2023

**Digital Solutions Drive Continued Efficiency**

Embracing digital solutions to power our business and profitability

- 4-D Reservoir Modeling to maximize return on new well locations in Magnolia
- Customized Aspen Linear Programming model to optimize plant assets and product mix
- Increased automation through advanced process controls
- Implementation of data analytic tools to support global logistics network and drive better decisions

**Sustainability**

Reducing our environmental footprint at our manufacturing sites

- Commercialized Bromine Recovery Unit (AR, U.S.)
- Switched from fuel oil to natural gas as a primary source of power in 2017 (Jordan)
- Material improvement in fresh water and energy utilizations via unique conservation and water recovery projects (Jordan)
- Focused R&D efforts on next gen sustainable chemistry
### Stable Outlook for Bromine Specialties

#### 5-Year Outlook

<table>
<thead>
<tr>
<th>FLAME RETARDANTS</th>
<th>OILFIELD CLEAR BRINE FLUIDS</th>
<th>OPERATIONAL EFFICIENCIES / LEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expect mature, stable market that will continue to base load and generate cash for the business</td>
<td>Expect to see incremental growth over the next five years driven by new resource discovery and expansion of the offshore drilling market</td>
<td>Continue to work on efficiencies to provide higher yield and lower cost processes that maintain a constant, superior product</td>
</tr>
</tbody>
</table>

#### Business Environment

- **Expected Net Sales**
  - **2019E**: $1.0B
  - **Annual Growth 5-year Target**: 1.5% - 2.5%

- **Adj. EBITDA Margin**
  - **2019E**: 32%
  - **5-year Target**: 28% - 32%

#### Market Assumptions

- **Emerging and GDP-type Growth Economies**
- **Cost Discipline and Selective Investment for Growth**

---

1 Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Market leader with proven ability to deliver results

- Access to highest quality Bromine resources in the world
- Low-cost position with diversified market portfolio to maintain industry-leading margins
- Operational excellence and superior service

Core competencies provide the foundation for continued growth by unlocking new opportunities and solving our customer’s most complex challenges

Stable and strong cash flow generating business to power the growth potential of Albemarle

Proven record of outperforming competition at any point in the economic cycle
What You’ll Hear Today…

01 Positioned to benefit from continued growth in demand for transportation fuels and chemicals, enhanced by tightening fuel specifications and growing prosperity in developing geographies

02 Innovation and technical services differentiate our offerings

03 Resilient business through macro cycles and beyond peak gasoline

04 Strong cash flow generation and favorable long-term earnings growth outlook
Catalysts Snapshot

High Margin and Strong Cash Flow Generator for Albemarle

**Segment Characteristics**

- Strong free cash flow generation with growth
- Leading positions in FCC and HPC catalysts
- High initial capital for world-scale plants, requiring strong technical and application expertise
- Focused on value creation for refiners
- Long-term, collaborative customer relationships

**Financials | TTM Q3 2019**

- **$911M** Net Sales
- **$250M** Adj. EBITDA\(^1\)
- **28%** Adj. EBITDA Margin\(^1\)

---

**Fluid Cracking Catalysts (FCC)**

- Cracks oil feedstock into gasoline and chemicals
- Albemarle is a leader in the FCC market in 1) bottoms cracking; 2) olefins output; and 3) emerging markets

**Clean Fuels Technology (CFT)**

- Removes sulfur and contaminants to produce clean diesel and clean oil-feedstock
- Albemarle is a leader in the HPC market in 1) middle distillates; 2) bio-based oil and hydro-cracker oil pretreatment; and 3) deep hydrotreating catalysis

---

**Note:** Pro-forma excludes net impact from PCS and divested businesses for the 12 months ended September 30, 2019. ¹ Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
## What We Said in 2017 and How We’re Doing

<table>
<thead>
<tr>
<th>WHAT WE SAID</th>
<th>WHAT WE DID</th>
<th>STATUS</th>
</tr>
</thead>
</table>
| **GBU Revenue / Adj. EBITDA\(^1\) Margin** |  • 5-year Revenue CAGR of 3%+  
  • Adj. EBITDA Margin 28% - 32% |  • 7%+ average annual Revenue growth  
  • Lower-end of margin range |  ![Green](Green.png)  ![Green](Green.png) |
| **Leadership Position** |  • Extend segment leadership position |  • Extended position in FCC max-olefin catalysts  
  • Extended position in distillates |  ![Green](Green.png)  ![Green](Green.png) |
| **Presence in Growth Areas** |  • Expand footprint in Southeast Asia |  • Expanded position in FCC and maintained position in HPC  
  • New sales offices in growth areas  
  • New business at greenfield refineries |  ![Green](Green.png)  ![Green](Green.png) |
| **Innovation and Partnerships** |  • New products and partnerships |  • Improved FCC products including the Granite technology platform  
  • New FCC products  
  • New alliances with ExxonMobil, DuPont  
  • Breakthrough HPC product Celestia |  ![Green](Green.png)  ![Green](Green.png) |

\(^1\) Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Strategically Positioned Network of Assets Enable Growth

- **2T miles driven per year** on clean transportation fuels powered by our catalysts (equivalent to 80M times around the world)
- **Two thirds of the 600+ worldwide refineries** use our catalysts
- **Strong global presence** rooted by deep, global partnerships

We Extend Our Reach through JVs and Partnerships
Our Catalysts Are Used to Produce Clean Transportation Fuels and Chemicals, and Are Integral to Refinery Profitability

FCC and HPC Catalysts Are Indispensable for Refineries, and We Are a Leader in Both Segments

- Crude Oil Feedstock
- Atmospheric Distillation
- Vacuum Distillation
- Pretreatment (FCC-PT)
- Hydrocracking (HC)
- Pretreatment (HCPT)
- FCC
- HPC
- VGO
- RESID
- FBR

83M bpd

~600
FCC units worldwide

~3,000
HPC units worldwide

*Reforming, isomerization not shown
Deep Dive into Our Catalysts

**Fluid Cracking Catalysts (FCC)**

- Mature business with moderate growth outlook
- FCC catalysts are continuously fed into FCC units; consistent and predictable due to multi-year contracts
- FCC catalysts create value for the refiner via higher gasoline or propylene yields
- Players differentiate on basis of catalyst performance and technical service

**Hydroprocessing Catalysts (HPC)**

- Mature business with moderate growth outlook
- Customers exchange HPC catalysts on an event basis; catalyst lasts 1-7 years depending on the application; difficult to make sequential or YoY comparisons
- HPC catalysts creates value for the refiner by production of in-spec transportation fuels
- Players differentiate on basis of catalyst performance and technical service

---

**Value Drivers for Our Customers**

<table>
<thead>
<tr>
<th>Driver</th>
<th>FCC Market</th>
<th>HPC Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline Yield</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Propylene Yield</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Crude Costs</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Emissions</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Diesel Yield</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Cycle Length</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Crude Costs</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
<tr>
<td>Energy Costs</td>
<td>$2.6B</td>
<td>$2.1B</td>
</tr>
</tbody>
</table>

---

1 Source: IHS Markit and based on management estimates
Growing global car pool of more than 1 billion vehicles, particularly in emerging economies

Increasing refinery complexity as well as shifting crude slates, requiring enhanced analytics and services from suppliers

Environmental legislation leading to stricter fuel impurity standards

Demand for durable plastics and petrochemicals grows at 1-2x GDP rate

Examples of Strategy in Action

New Sales Centers in Vietnam, Thailand, Malaysia, and Indonesia; Nippon Ketjen JV (Japan, Korea, SE Asia); and Fábrica Carioca de Catalisadores JV (Brazil, S. America)

New FCC catalyst development based on customer input, focused on improved bottoms cracking, octane, and metals tolerance on a range of feedstocks

First adoptions of Celestia™, new deep hydrotreating catalyst, in 2019 / 2020, building on the success of technology partnership with ExxonMobil

Partnership with licensors and new customers to deliver propylene yields 10% in the geographies with the fastest growing plastics demand
FCC Units Produce More Clean Gasoline and Olefins with Our Catalysts

Our FCC Catalysts Create Value for Customers through Higher Product Yields and Lower Feedstock Costs

FCC feedstock (VGO or Resid) → FCC unit → FCC Catalyst → Gasoline → $ → Car
→ Propylene → $ → Polypropylene → PP

Gasoline Demand Flattens Off in 2030s Whereas Propylene Demand Keeps Growing

GLOBAL FCC CATALYST DEMAND GROWTH PRIMARILY IN RESID AND MAX-OLEFINS SEGMENT

GASOLINE

PROPYLENE

Source: IHS Markit. ¹ Based on management estimates.
Emerging Oil-to-Chemicals Refineries Use FCC-type Technologies for which Albemarle Leads in Innovation

Petrochemicals Demand & New Crude Oil to Chemicals Technologies Will Drive FCC Industry Growth Beyond “Peak Gasoline”

Traditional Oil Refinery

Crude Oil-to-Chemicals Refinery

Existing

Traditional Refinery Product Slate

- Gas + Chemicals: 12%
- Gasoline
- Diesel
- Fuel Oil

New / Future

Crude Oil-to-Chemicals Refinery product slate

- Chemicals: 45%
- Gasoline
- Diesel
- Fuel Oil

Chemicals Have More Value Than Fuels

Source: The Catalyst Group
HPC Units Produce Cleaner Transportation Fuels with Our Catalysts, and the Demand for Low-sulfur Fuels in Emerging Markets is Increasing

Our HPC Catalysts Create Value for Customers through Better Yields and Lower Cost in Use

Distillates

High Sulfur

FCC or Hydrocracking Feedstock

HPC unit

Cat A

Clean gasoline, jet fuel, diesel (ULSD)

Ultra Low Sulfur

Pre-treated feedstock for FCC or Hydrocracker

HPC Catalyst Demand Grows Low Single-Digit % Until 2025

Diesel, Jet Fuel, and Fuel Oil Demand

HPC Catalyst Demand Grows Low Single-Digit % Until 2025

GLOBAL HPC CATALYST DEMAND

Source: IHS Markit.  
1 Based on management estimates.
Global Fuel Sulfur Standards Drive HPC Catalyst Demand, and We Are Well Positioned to Win in the Markets for Distillates

Global Proliferation of ULSD Standards Leads to Higher Distillate HPC Demand

Maximum Sulfur Limits in On-road Diesel: 10-15 ppm

- Does Not Meet ULSD Specifications

Fuel Oil Standards [IMO 2020] Lead to Higher Resid and Distillate HPC Demand

- Higher Demand for Marine Gasoil / Diesel post-2020
- Higher Demand for Desulfurized Bunker Fuel (LSFO)

Global Implementation of Sulfur Standards Drives Mid Single-Digit % Demand Growth in Next Few Years

1 Source: Stratas Advisors and based on management estimates 2 Source: FGE (Facts Global Energy) – Feb 2018
Catalysts Strategy: Build Upon Technology and Geographic Strengths in Order to Expand Leadership in Growth Markets

**Build on Our Strengths**
- Enhancing Customer Value Proposition
  - Improving refinery margins through yield enhancement

**Innovating Our Technology**
- Strengthening advantages in FCC Max-Olefins and bulk-metal HPC catalysts

**Solidifying Western Baseload**
- Ensuring high utilization of assets that leverage economies of scale

**Expanding Partnerships**
- Example: Expanding ExxonMobil partnership for specialty hydrotreating catalysts

**Presence in Growth Markets**
- Expanding Presence in Growth Areas, such as Chemicals and Southeast Asia
  - Building in-country, direct selling organization as well as local production and marketing JVs
- Strategic Cooperation with Licensors and Oil Companies
  - Focusing on chemicals (olefins) output and deep hydrotreating
- Local Applications Expertise
  - Leveraging in-country, often on-site, technical expertise for customer collaboration to drive value

**Best-in-Class Operations**
- Talent
  - Developing and retaining the industry-leading technical sales and support team
- Value Selling
  - Utilizing advanced refinery modeling coupled with Challenger Sales Process
- Targeted Innovation
  - Managing R&D portfolio according to disciplined process and using New Product Blueprinting
- Productivity and Asset Management
  - Advancing business-wide capacity and flexibility programs
Case Study: Creating Long-term Value for Customers through Collaboration and Continuous Innovation

Additional Value Created by Improved Catalyst Performance at Asian Customer

- Each formulation change in collaboration with the customer resulted in valuable yield improvements for customer
- Enabled by our refinery modeling, technical service, and customer relationships

FCC Catalysts Are Highly Engineered, Customized Products that Drive Differentiation

2011
Initial formulation

2012 - 2014
Formulation adjustments to provide higher propylene yield

2015 - 2018
New FCC Product Reformulations to improve selectivity

2019+
Customer extends contract because of continuous innovation

$20M
$28M
$38M

2012-2014 2015-2018 2019+

Annual Additional Value ($M)
Alliance with Industry Leaders to Develop Unique, Market-leading Products

- Catalyst innovation for ‘deep hydrotreating’ through Albemarle / ExxonMobil alliance
- Scale-up by Albemarle
- Commercial introduction at ExxonMobil refineries
- Subsequent marketing by Albemarle in other refineries
- Delivering unique performance with unprecedented value generation for customer

Typical Example of Industry Alliance with Albemarle

- 2001: Nebula® Developed
- 2006: Dedicated Bulk Catalyst plant
- 2010: Start of Celestia™ discovery
- 2015: First use of Celestia in ExxonMobil
- 2019: Launch of Celestia outside ExxonMobil

Alliance with ExxonMobil Has Delivered Unprecedented Product Innovation in the HPC Industry
Low-cost Operational Excellence in Albemarle Catalysts Enables Quality Margins

**Commercial**
- Best-in-industry technical sales
- Refinery modeling and value capture
- Extensive global reach

**Supply Chain**
- Continuous improvement model
- Strategy sourcing expertise
- Targeted investment for growth and cost improvements

**Financial**
- Organizational focus on FCF metrics
- Strict capital deployment prioritization
- Disciplined R&D investment

**Examples**
- Transitioned to direct sales channels in emerging geographies
- Development of proprietary refinery performance databases and models
- Bayport manufacturing increased FCC output YoY by 12% in 2018
- Risk management plan executed to address Chinese rare earth supply
- ZSM-5 zeolite crystal and additive expansion
- Albemarle Portfolio Process (APP) prioritizes all capital investments according to growth, risk, and horizon
- Leveraging new enterprise platform to optimize working capital levels

Continuing to Raise the Bar in Operating Discipline and Performance
Continued Growth in Strong Markets for Catalysts

<table>
<thead>
<tr>
<th>5-YEAR OUTLOOK</th>
<th>FCC</th>
<th>HPC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BUSINESS ENVIRONMENT</strong></td>
<td>• Increasing mobility in non-OECD countries drives gasoline demand</td>
<td>• Increasing transportation fuels demand in developing areas as well as tightening sulfur regulations around the world</td>
</tr>
<tr>
<td></td>
<td>• Global FCC-sourced propylene demand growth in emerging markets</td>
<td>• Implementation of stronger environmental standards</td>
</tr>
<tr>
<td></td>
<td>• Fuel efficiency standards driving additional needs for higher octane gasoline</td>
<td></td>
</tr>
</tbody>
</table>

**Net Sales**

- **$900M**
- **2019E**
- **3% - 5% Annual Growth**
- **5-year Target**

**Adj. EBITDA Margin**

- **27%**
- **2019E**
- **26% - 28%**
- **5-year Target**

**MARKET ASSUMPTIONS**

- Continued adoption of lower sulfur fuel standards globally
- Shift toward higher chemicals output from refineries
- No significant changes catalyst production capacities
- Rare earth, energy, and metals pricing stability

---

1 Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Key Takeaways

01. Our Catalysts business upgrades oils into clean transportation fuels and high-value chemicals via **differentiated services, technologies, and partnerships**

02. Well positioned to benefit from **continued growth in demand for transportation fuels and chemicals**, enhanced by tightening fuel specifications and growing prosperity in developing geographies

03. Core strengths and solid strategy to leverage growth opportunities and to **continue to profitably generate attractive free cash flow**
Break
Lithium

GBU Overview

Eric Norris
President
What You’ll Hear Today…

01 Broadest range of resources, manufacturing capabilities, products, and customer relationships in the lithium industry

02 Global lithium industry demand is on track to reach 1 million MT LCE by 2025, a 20%+ CAGR driven by EV penetration of new car sales

03 We anticipate that the current excess supply will diminish in the mid-term as demand increases, particularly for hydroxide

04 Projected growth in lithium demand cannot be met without leveraging the largest and most highly concentrated resources in the world, and we have access to the Top 3

05 Strategy focused on driving low-cost operations and disciplined capital expansion that will provide strong returns throughout the cycle
Lithium Snapshot

Well Positioned to Remain a Market Leader as Growth Continues

Financials | TTM Q3 2019

- **$1.3B**
  - Net Sales
- **$529M**
  - Adj. EBITDA\(^1\)
- **41%**
  - Adj. EBITDA Margin\(^1\)

Segment Characteristics

- Leading market positions in Hydroxide, Carbonate, Lithium Metal, and Organometallics
- Mining and specialty chemicals capability
- Vertically integrated from natural resource to specialty performance products
- High-quality product portfolio / low-cost position

Business Environment

- Volume growth driven by energy storage
- Highly dynamic, emerging supply chain
- Public policy accelerating e-mobility / renewables
- Battery cost declining + performance improving = need for higher-quality lithium and innovation
- Security of supply essential to underwrite global auto OEM investment in vehicle electrification

Note: Financials for the 12 months ended September 30, 2019. \(^1\) Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Albemarle has Access to the World’s Most Highly Concentrated Resources

Albemarle Resources Benefit from Numerous Other Factors that Drive Low-cost Operations

- Chemical composition
- Hydrogeology
- Climate
- Utility requirements
- Environmental / regulatory
- Social responsibility
- Mine scale
- Reserve size
- Infrastructure

The Largest, Lowest-cost, and Most Diversified Base to Support Our Customers’ Growth

Resource & Reserve Data According to Roskill: Lithium Outlook to 2028.
Integrated Global Footprint for Lithium Chemical Conversion

Enables Production of 100+ Products for the Varied Needs of Our Global Customer Base
Lithium Powers the Potential of Customers Across Multiple Markets

~650 Customers within Multiple End Markets in 60 Countries

**Energy Storage**
- Battery Grade Hydroxide
- Battery Grade Carbonate
- Battery Grade Metal

**Industrial**
- Technical Grade Hydroxide
- Technical Grade Carbonate
- Technical Grade Spodumene
- Specialty Lithium Salts

**Specialties Grade**
- Butyllithium
- Cesium Products
- Organometallics
- Lithium Carbonate Pharma Grade
## What We Said in 2017 and How We’re Doing

<table>
<thead>
<tr>
<th>WHAT WE SAID</th>
<th>WHAT WE DID</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GBU Revenue Growth and Adj. EBITDA¹ Margins</strong></td>
<td>• Double-digit growth and EBITDA margins of 38% - 44%</td>
<td>• +24% average annual EBITDA growth with above 40% margins</td>
</tr>
<tr>
<td><strong>Market Leading Position</strong></td>
<td>• 165 kT LCE in annual capacity</td>
<td>• Lithium Carbonate: La Negra I / II production rate increased from 24 to 44 kT LCE per year; La Negra III / IV (40 kT LCE) on track to commission by 2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lithium Hydroxide: Expanded China conversion capacity from 15 to 35 kT LCE per year; commenced construction of 50 kT LCE per year hydroxide plant at Kemerton</td>
</tr>
<tr>
<td><strong>Best-in-Class Resources</strong></td>
<td>• Increase access to world-class resources</td>
<td>• Greenbushes spodumene capacity increased from 80 to 160 kT LCE, ability to expand to 240 kT LCE per year - ALB has rights to 50% of that output</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MARBL JV, Wodgina spodumene resource to support 100 kT LCE per year</td>
</tr>
<tr>
<td><strong>Low-Cost Operational Excellence</strong></td>
<td>• Large-scale project execution</td>
<td>• Implemented industry-standard stage gate capital deployment process</td>
</tr>
<tr>
<td></td>
<td>• Low-cost manufacturing practices</td>
<td>• Launched lean manufacturing at La Negra in 2019 to reduce operating costs and improve reliability</td>
</tr>
</tbody>
</table>

¹ Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Key Changes to Our View of the Market Since 2017

2025 Demand Outlook
Stronger than we earlier projected¹

Supply
Industry projects have cost more than projected; Australian spodumene mines started up more quickly, and China conversion capacity using Australian spodumene as a feedstock came to market faster and have met specifications sooner than projected

Customers
Customer base is shifting from cathode producers to battery manufacturers and auto OEMs

Price Cycle
Auto OEMs are pressing for more visibility on a price that fluctuates with the market, insisting that battery producers pass through material costs vs. engaging in fixed long-term contract pricing with lithium suppliers

Emphasis on Operational Excellence and Capital Efficiency

¹ As of 03/16/2017 Investor Day
# Technology Innovation: Spanning from Minerals to Market

<table>
<thead>
<tr>
<th>Resources</th>
<th>Conversion</th>
<th>Derivatization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogeology</td>
<td>Extraction</td>
<td>Advanced Materials</td>
</tr>
<tr>
<td>Protect Environment &amp; Sustain Resource</td>
<td>Maximize Lithium Recovery &amp; Purity</td>
<td>Create Customer Solutions &amp; Performance Differentiation</td>
</tr>
<tr>
<td></td>
<td>Process Chemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optimize Utilization &amp; Tailor Product Quality</td>
<td></td>
</tr>
<tr>
<td>Data Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Link Technical Potential to Economic Impact</td>
<td></td>
</tr>
</tbody>
</table>

Extending Our Technology Differentiation
Creating Differentiation through Data Science

Proprietary models built on internal intelligence and external, third-party data

**KEY OUTPUTS**
- Materials-to-Market
- Mass Balance
- Emerging Trends
- Customer Value Models
- Stress Testing & Scenario Planning

**DEMAND**
- OEM projections
- Consumer trends
- Model pipeline

**TECHNOLOGY**
- What products
- When and how much
- What if…

**SUPPLY**
- Expansive global database
- Resource type and quality
- Investment cost and time

Deep Science and Statistics to Anticipate Trends and Position to Win
**Energy Storage Continues to Drive Lithium Demand**

<table>
<thead>
<tr>
<th>Demand by Application (kT LCE)</th>
<th>2018 Estimate</th>
<th>2019 Estimate</th>
<th>'19 – '25 CAGR</th>
<th>2025 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Vehicles</td>
<td>59</td>
<td>93</td>
<td>38%</td>
<td>650</td>
</tr>
<tr>
<td>Other Mobility</td>
<td>25</td>
<td>26</td>
<td>7%</td>
<td>40</td>
</tr>
<tr>
<td>Consumer Electronics</td>
<td>36</td>
<td>38</td>
<td>11%</td>
<td>70</td>
</tr>
<tr>
<td>Grid Storage</td>
<td>6</td>
<td>9</td>
<td>37%</td>
<td>60</td>
</tr>
<tr>
<td>All Other/Industrial</td>
<td>114</td>
<td>119</td>
<td>3%</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total Real Consumption</strong></td>
<td><strong>240</strong></td>
<td><strong>285</strong></td>
<td>22%</td>
<td><strong>960</strong></td>
</tr>
<tr>
<td>YOY Inventory Change</td>
<td>+30</td>
<td>-10</td>
<td></td>
<td>+40</td>
</tr>
<tr>
<td><strong>Total Lithium Demand</strong></td>
<td><strong>270</strong></td>
<td><strong>275</strong></td>
<td>24%</td>
<td><strong>1,000</strong></td>
</tr>
</tbody>
</table>

**EV Consumption Buildup**

- **EV Penetration** % of New Car Sales
  - PHEV: 0.5%, 0.9%, 6%
  - BEV: 1.5%, 2.3%, 12%
  - All EVs: 2.0%, 3.2%, 18%

- **Battery Size** kWh per EV
  - PHEV: 12, 12, 14
  - BEV: 44, 53, 65
  - Average: 32, 41, 48

- **Lithium Consumption** kT LCE
  - PHEV: 5, 8, 65
  - BEV: 54, 85, 585
  - Total: 59, 93, 650

**Lithium Intensity of Energy Storage Demand**: 0.95, 0.76, and 0.78 kg LCE/kWh in 2018, 2019, and 2025, respectively; calculated from demand model output of total lithium demand (total real consumption and YOY inventory change), which accounts for lithium consumption of different technologies and applications.

**New Car Sales**: 95, 89, and 102 million in 2018, 2019, and 2025, respectively.
Lithium-ion Battery - Reversible Storage of Electrical Energy

The Lithium Atom - Core Enabler Across All Lithium Battery Types
Lithium Battery Technology Progression - Safer, Higher Energy, Faster Charge

Higher Performance Materials Helping Drive Market Expansion
Albemarle Innovation on Both Sides of the Battery

**Cathode Advancements**
- Increased quality and purity
- Tuned particle size and morphology
- Tailored electrolyte additives

**Anode Advancements**
- Novel pre-lithiation chemistry
- New precursors for solid separators
- Revolutionary lithium metal anodes

---

**Advanced: Pre-Lithiation Agents**
- Under Utilization of Cathode
- Full Cathode Utilization

- **+10-20%** Energy Density Wh/kg
- **5-10%** Cost Savings $/kWh

**Next Frontier: Lithium Metal Anodes**
- Metal Dendrites Upon Cycling
- Cycling Stable Interfaces

- **+100%** Energy Density Wh/kg
- **50%** Cost Savings $/kWh

Albemarle Technology Enabling New Levels of Performance
Lithium Use Evolves with Battery Technology Progression

LITHIUM MATERIALS

- LiOH
- LiCl
- Li₂CO₃
- LiBr
- Li Metal
- Li₂S

First principle chemical models used to estimate lithium use by battery cell component and by technology (today and future)
Lithium Product Demand Mapped to Technology Forecast

Albemarle Sees Product Mix Shift to Hydroxide – Requires Carbonate & Hydroxide Production Flexibility

Technology Forecast

Cathode Advancements

Anode Advancements

Product Forecast

Total Demand (kT LCE) inventory adjusted

Source Data: IHS, Roskill, B3, Avicenne, BNEF, BMI, Albemarle analysis.

Technology Scenarios
cathode & anode advancements

Delayed Technology Maturation

Base Case

Accelerated Technology Maturation

Albemarle Celtic Project:

- Lithium Sulphate (Li2SO4)
- Lithium Hydroxide (LiOH)
- Lithium Carbonate (Li2CO3)
- Other Lithium Compounds

Albemarle’s strategic plan includes expansion of its lithium production capabilities, focusing on a mix of carbonate and hydroxide production locations.
Lithium Supply Expected to Grow 3x from 2019 to 2025

### Comprehensive Approach to Modeling Supply

#### BY RESOURCE ORIGIN

<table>
<thead>
<tr>
<th></th>
<th>2019E</th>
<th>2025F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Brine</td>
<td>145</td>
<td>400</td>
</tr>
<tr>
<td>Total Rock¹,²</td>
<td>180</td>
<td>640</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td><strong>325</strong></td>
<td><strong>1,040</strong></td>
</tr>
</tbody>
</table>

#### BY PRODUCT

<table>
<thead>
<tr>
<th></th>
<th>2019E</th>
<th>2025F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonate</td>
<td>195</td>
<td>410</td>
</tr>
<tr>
<td>Hydroxide</td>
<td>70</td>
<td>525</td>
</tr>
<tr>
<td>Specialties²</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td><strong>325</strong></td>
<td><strong>1,040</strong></td>
</tr>
</tbody>
</table>

¹ Rock is mainly spodumene but includes other minerals.
² Includes technical grade minerals.
In 2019, Lithium Supply Capacity Grew Faster than Demand

Albemarle Well Positioned in Over-Supplied Market Given Low-cost Position

Note: Albemarle internal estimates.
## 2019 Brine Supply Chain: 45% of Projected LCEs and Largely Carbonate

### Efficient Carbonate Production - Hydroxide Requires Secondary Conversion

*Note: Supply estimates represent the midpoint of the high / low range on 2019 supply based on bottom up analysis of currently available information. Publicly disclosed supplier inventory accumulation is excluded from this total. ¹ 2019 resources supply and capacity is shown as equivalent to chemical conversion supply and capacity*
### 2019 Rock Supply Chain: 55% of Projected LCEs and Lower Total Utilization

- **Resource Production**
  - Talison
  - Mt. Marion
  - Galaxy
  - Pilbara
  - Altura
  - Other

- **Chemical Conversion**
  - 180 kT
  - Albemarle
    - 50-55 kT
  - Tianqi
    - 50-55 kT
  - Ganfeng
    - 40-45 kT
  - Other
    - 30 kT

- **Lithium Product**
  - 180 kT
  - Hydroxide
    - 45 kT
  - Carbonate
    - 85 kT
  - Specialties
    - 50 kT

- **2019E Total Production of 325 kT LCE**
  - 45% Brine
  - 55% Rock

- **Supply / Flows**
  - Mineral
  - Carbonate
  - Hydroxide
  - Specialty

- **Capacity**

### Higher-cost, Lower-quality Resources and Converters at ~50% Utilization - Some Now Idling

*Note: Supply estimates represent the midpoint of the high / low range on 2019 supply based on bottom up analysis of currently available information. Publicly disclosed supplier inventory accumulation is excluded. \(^1\) 2019 resource supply relative to available capacity. \(^2\) Includes toll production. \(^3\) Includes tech grade minerals.*
By 2025, Market Tightens to Undersupplied

Rapid Growth of High Nickel Batteries Drives Potential Hydroxide Shortfall

Note: Albemarle internal estimates

1 Accelerated and Delayed Technology Maturation Scenarios from slide 73.
2025 Brine Supply Chain: Grows 2.7x with Continued Carbonate Alignment

- New Projects Longer to Develop - Remains Most Efficient Carbonate Production

```
<table>
<thead>
<tr>
<th>Resource Production¹</th>
<th>Chemical Conversion</th>
<th>Carbonate to Hydroxide</th>
<th>Lithium Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>Chile</td>
<td></td>
<td>Hydroxide</td>
</tr>
<tr>
<td>205 kT ▲ 118</td>
<td></td>
<td></td>
<td>70 kT ▲ 45</td>
</tr>
<tr>
<td>Argentina</td>
<td>Argentina</td>
<td></td>
<td>Carbonate</td>
</tr>
<tr>
<td>130 kT ▲ 98</td>
<td></td>
<td></td>
<td>305 kT ▲ 190</td>
</tr>
<tr>
<td>Rest of World</td>
<td>Rest of World</td>
<td></td>
<td>Specialties</td>
</tr>
<tr>
<td>65 kT ▲ 39</td>
<td></td>
<td></td>
<td>25 kT ▲ 20</td>
</tr>
</tbody>
</table>
```

Deltas vs. 2019

- 2025 resources supply and capacity is shown as equivalent to chemical conversion supply and capacity.

80% Carbonate | 20% Hydroxide

2025F Total of 1,040 kT LCE

- 38% Brine
- 62% Rock

400 kT from Brine

LCE Basis

1 2025 resources supply and capacity is shown as equivalent to chemical conversion supply and capacity.
2025 Rock Supply Chain: Grows 3.6x with Strong Hydroxide Focus

Resource Production¹

2019 Producers

Chemical Conversion 640 kT

2019 Producers²,³
535 kT ▲355

New Conversion Entrants²,³
105 kT ▲105

Lithium Product 640 kT

Hydroxide
455 kT ▲408

Carbonate
105 kT ▲20

Specialties³
80 kT ▲32

2025F Total of 1,040 kT LCE

Supply / Flows
Mineral
Carbonate
Hydroxide
Specialty
Capacity

Capacity

New Projects Easier to Bring to Market - Most Suited for Cost Effective Hydroxide Production

¹LCE Basis
² Includes toll production.
³ Includes tech grade minerals.

1 2025 resource supply relative to available capacity. 2 Includes toll production. 3 Includes tech grade minerals.
The Lithium Price Cycle is Moving Towards a New Trough Level

- First major cycle in lithium since the EV era began
- Growth acceleration is driving the need for new sources of supply with higher marginal cash costs
- Today, cash cost of the marginal producer is ~$7/kg, of which ~65% is the cost of the lithium resource
- Current industry dynamics suggest a trough is forming at marginal cash costs due to excess supply
- Upward price inflection is a function of demand growth, channel inventory levels, and pace of supply addition
- Spot prices are indicative of trends but differ from contract prices

As the Industry Continues to Grow, the Average Cost of Supply is Expected to Increase
Lithium Strategy: Strong Foundation / Resilient to Market Dynamics

- Manage World's Best Resources
  - 270 kTa LCE of spodumene capacity
  - 110 kTa LCE of brine capacity
  - Sustainable resource management
  - Geographically diverse
  - High concentrations and low cost

- Expand Capacity with Discipline
  - Reduced capital intensity
  - Build to meet market demand
  - Strong return economics

- Drive Cost and Operational Excellence
  - Lean, low-cost manufacturing
  - One world class global standard
  - Leader in quality, reliability, and sustainability

- Sustain Premium Value Proposition
  - Long-term customer partnerships
  - Differentiated customer offerings
  - Innovative lithium materials

Our Strategy is Guided by the Albemarle Values and Rooted in Safety and Sustainability
### Albemarle Resource

<table>
<thead>
<tr>
<th>Albemarle Resource</th>
<th>2019 Operating Capacity (kTa LCE)</th>
<th>Available Resource Capability (kTa LCE)</th>
<th>% Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atacama CORFO Lease</td>
<td>40</td>
<td>100</td>
<td>40%</td>
</tr>
<tr>
<td>50% Greenbushes Interest¹</td>
<td>40</td>
<td>120</td>
<td>33%</td>
</tr>
<tr>
<td>Wodgina²</td>
<td>0</td>
<td>100</td>
<td>0%</td>
</tr>
<tr>
<td>Silver Peak</td>
<td>5</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>Kings Mountain</td>
<td>-</td>
<td>50</td>
<td>0%</td>
</tr>
<tr>
<td>Antofalla</td>
<td>-</td>
<td>TBD</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total³</strong></td>
<td><strong>85</strong></td>
<td><strong>&gt; 380</strong></td>
<td><strong>&lt; 25%</strong></td>
</tr>
</tbody>
</table>

¹ 50% interest with Tianqi in Talison JV. ² 60% interest and 100% marketing rights in MARBL JV with Mineral Resources. ³ Excludes Tech Grade Spodumene.

Large and Diverse Resources Positioned for at Least the Next Decade

Sufficient Resources to Meet the Growth Targets of Our Customers
Our plan through 2024 would only utilize ~60% of available resources

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

Conversion Capacity that is Built to Customer Commitments with Lower Capital Intensity

Reducing Capital Intensity

- Deploying standard process flow and equipment in each expansion
- Process technology to gain 10-20% capacity increase (debottleneck) in existing plants
- Technology improvement at existing plants becomes the standard for new plants
- China-focused expansion at significantly lower CAPEX/MT
- Potential acquisition of Chinese converters vs. Greenfield expansion
Driving Operational Excellence to Become World Class and Low Cost

**HSE**
- Drive Operational Injury and Illness rate (OII) from 1.0 in 2018, to less than 0.5 in 2019 and 0.2 by 2022, implementing recognized best practices

**LEAN MANUFACTURING**
- Retained 3rd-party experts to implement lean manufacturing at La Negra in 2019 and multi-year plan across all plants
- Area of greatest improvements are in reliability, maintenance, and process technology
- Expect to drive down unit costs by >20% over the next 5 years

**SERVICE AND QUALITY**
- 10% improvement in quality and 20% improvement in service levels enabled by:
  - Driving consistent standard operating procedures across all 11 operating sites
  - Enhancing systems and processes in quality assurance and management

**2022**
*Albemarle Lithium will be at world-class standards by 2022*

- Operational Excellence journey started in early 2019 at La Negra
- By end of 2021, all Li plants will be operating with Lean Principles in place

Relentless Drive to be the Lowest-cost Producer
## Creating Value via a Differentiated Experience for Our Customer

### WHAT CUSTOMERS VALUE

<table>
<thead>
<tr>
<th>Secure supply / competitive price</th>
<th>ALB OFFERING TODAY</th>
<th>ALB FUTURE OFFERINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure supply / competitive price</td>
<td>✔ LTAs with floor price</td>
<td>Continue to meet customers’ needs and provide appropriate returns to Albemarle</td>
</tr>
</tbody>
</table>

| Flexible, scalable asset base | ✔ 3 Carbonate plants / 3 Hydroxide plants / 3 continents | 5 Carbonate plants / 5 Hydroxide plants / 4 continents |

| Local response / support | ✔ Sales offices throughout Asia, Europe, U.S. | Technical support / experts at each sales office |

| Increased quality / purity standards | ✔ Product tailored to requested standard | Setting the standard due to deep knowledge of battery performance and process know-how |

| R&D in advanced energy storage | ✔ BG Carbonate and Hydroxide, LiBOB, and Lithium Sulfide | Innovations in pre-lithiation and metal anodes |

| Flawless customer experience | ✔ Responsive service through 3 global customer service centers | Preferred supplier providing immediate service to customers via a digital interface |

| Sustainability | ✔ Strong foundation with a continued commitment | Industry leader in sustainability |

---

**Albemarle Positioned to Sustain its Differentiated Position in the Market Well into the Future**
## Outlook for Lithium

### 5-Year Outlook

<table>
<thead>
<tr>
<th>ENERGY STORAGE</th>
<th>INDUSTRIAL</th>
<th>SPECIALTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pricing environment expected to improve as supply becomes more balanced in the mid-term; expected strong EV growth over next 5 years</td>
<td>• Remains a GDP market and prices driven by Energy Storage</td>
<td>• Pricing based on value in use</td>
</tr>
</tbody>
</table>

### Business Environment

- Pricing environment expected to improve as supply becomes more balanced in the mid-term; expected strong EV growth over next 5 years
- Volume driven by capacity additions in a rapidly growing market

### Market Assumptions

- **Net Sales**
  - (Growth Target)
  - $1.3B 2019E
  - 12% - 17% Annual Growth 5-year Target

- **Adj. EBITDA Margin**
  - 40% 2019E
  - 40% - 45% 5-year Target

- **Accelerating adoption of EVs driven by China and Europe**
- **GDP Industrial Growth**
- **GDP plus growth driven largely by pharma and niche automotive applications**

---

1 Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
ALB has the broadest range of resources, manufacturing capabilities, products, and customer relationships in the Lithium industry.

Global Lithium demand is on track to reach 1 million MT LCE by 2025, a 20%+ CAGR driven by EV penetration of new car sales.

We anticipate that the current excess supply will diminish in the mid-term as demand increases, particularly for hydroxide.

Projected growth in lithium demand cannot be met without leveraging the largest and most highly concentrated resources in the world, and we have access to the Top 3.

ALB has a disciplined plan to build battery grade conversion capacity that provide attractive returns to meet the significant growth demand from our customers.

Key Takeaways
Maintaining Our Financial Flexibility
What You’ll Hear Today…

01. Strong history of execution and investment in high-return projects

02. Significant growth in cash generation; committed to generate free cash in 2021

03. Stronger organization through operational excellence and talent development

04. Disciplined capital allocation: reinvestment, M&A, and return to shareholders

05. Financial flexibility and balance sheet strength
History of Strong Financial Performance

<table>
<thead>
<tr>
<th>Net Sales(^1) ($B)</th>
<th>Adj. EBITDA ($B) &amp; Margin(^{1,2})</th>
<th>FCF(^1) ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015</strong></td>
<td><strong>2016</strong></td>
<td><strong>2017</strong></td>
</tr>
<tr>
<td>$3.7</td>
<td>$2.7</td>
<td>$3.1</td>
</tr>
<tr>
<td><strong>2015</strong></td>
<td><strong>2016</strong></td>
<td><strong>2017</strong></td>
</tr>
</tbody>
</table>

1 Historical financials presented as of year reported
2 Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.

Deliberate Transformational Steps Toward Growth
Financials on a Pro Forma Basis

**Net Sales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Historical Financials</th>
<th>Management Estimate (2019E) and Target Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$2.0</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$2.2</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$2.7</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$3.0</td>
<td></td>
</tr>
<tr>
<td>2019E</td>
<td>$3.3 - $3.4</td>
<td></td>
</tr>
<tr>
<td>2024 Target</td>
<td>$4.4 - $5.0</td>
<td></td>
</tr>
</tbody>
</table>

**Adj. EBITDA & Margin**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019E</th>
<th>2024 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.6</td>
<td>$0.7</td>
<td>$0.8</td>
<td>$1.0</td>
<td>$1.0</td>
<td>$1.1</td>
<td>$1.5 - $1.8</td>
</tr>
</tbody>
</table>

- **Focused Portfolio**
  - Strong margin businesses: 5-year Target:
    - Lithium: 40% - 45%
    - Bromine: 28% - 32%
    - Catalysts: 26% - 28%

- **Divestitures of Lower-margin, Non-core Businesses**
  - 2016: Divested Chemetall
  - 2018: Divested Polyolefin Catalysts and Components
  - 2020: Potential divestitures of Fine Chemistry Services and Performance Catalysts Solutions

- **Leverage Manufacturing Excellence**
  - Focus on low-cost operations and business processes

---

1. Historical and prospective financials excludes divestitures including PCS and FCS.
2. Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
### Reaffirming Full Year 2019 Guidance

<table>
<thead>
<tr>
<th></th>
<th>FY 2019 Guidance</th>
<th>2019 Guidance vs. FY 2018 Pro-Forma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>$3.6B - $3.7B</td>
<td>7% - 10%</td>
</tr>
<tr>
<td><strong>Adj. EBITDA</strong></td>
<td>$1.02B - $1.06B</td>
<td>2% - 6%</td>
</tr>
<tr>
<td><strong>Adj. EBITDA Margin</strong></td>
<td>28% - 29%</td>
<td>--</td>
</tr>
<tr>
<td><strong>Adj. Diluted EPS</strong></td>
<td>$6.00 - $6.20</td>
<td>10% - 14%</td>
</tr>
<tr>
<td><strong>Net Cash from Operations</strong></td>
<td>$700M - $800M</td>
<td>31% - 50%</td>
</tr>
<tr>
<td><strong>Capital Expenditures</strong></td>
<td>$900M - $950M</td>
<td>--</td>
</tr>
</tbody>
</table>

### 2020 Outlook

**Company**
- EBITDA down around 10%

**Lithium**
- Mid single-digit volume growth and cost productivity; price decline pushes EBITDA down

**Catalysts**
- FCC low single-digit volume growth; CFT less favorable volume and mix
- Expecting Adj. EBITDA flat to slightly up

**Bromine**
- Flat volumes, some price pressure in 2H 2020
- Expecting Adj. EBITDA flat to slightly down

---

1 Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.
Two-Year Cost Savings Initiative Underway

Project to Transform Our Business Model by the End of 2021
- Structural cost improvement task force assembled and led by Netha Johnson
- Cross-functional expertise focused on all cost elements
- Business segment assessments underway
- Targeting best-in-class functional spending
- Estimated cost to achieve annualized run-rate savings of ~$30M one-time expense and ~$25M capex

Three Buckets of Cost Savings

Factory Spend and Operational Efficiency
- Raw material yield and cost reduction
- Energy and waste reduction
  25% - 30%

Supply Chain
- Logistics optimization
- Indirect spend outsourcing
- Facility reduction
  40% - 50%

Sales & Administration and IBO
- Reduce 3rd-party consulting
- Efficiencies from IT investments and global systems
  20% - 25%

Leveraging Culture of Operational Excellence to Enhance Our Low-cost Position

$100M+
(2020 - 2021)
Significant Enabler of Operational Excellence: Global ERP System

Rollout will be Complete in January 2020

- From a multitude of systems to one globally integrated system
- Improved governance, compliance, and controls
- Easy access to real time data
- Enhanced financial management and flexibility

AREAS THAT WILL BENEFIT

- Production / Scheduling
  - Lead Time Reduction
- Logistics
  - Transport Management
  - Production Target
- S&OP
  - Inventory Management
- Finance
  - Days to Close
- Forecasting
  - Guidance Accuracy
Poised to Generate Significant Cash Growth from Lithium Expansions

**Cash Flow**\(^1\) ($B)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Cash from Ops</th>
<th>Capital Expenditures</th>
<th>Free Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$(0.2)</td>
<td>$0.2</td>
<td>$(0.2)</td>
</tr>
<tr>
<td>2016</td>
<td>$(0.2)</td>
<td>$0.6</td>
<td>$(0.8)</td>
</tr>
<tr>
<td>2017</td>
<td>$(0.3)</td>
<td>$0.3</td>
<td>$(0.6)</td>
</tr>
<tr>
<td>2018</td>
<td>$(0.1)</td>
<td>$0.7</td>
<td>$(0.7)</td>
</tr>
<tr>
<td>2019E</td>
<td>$0.5</td>
<td>$0.7 - $0.8</td>
<td>$0.8 - $0.9</td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td>$0.1 - $0.3</td>
</tr>
<tr>
<td>2024</td>
<td></td>
<td></td>
<td>$0.8 - $1.2</td>
</tr>
</tbody>
</table>

\(^1\) Historical and prospective financials excludes divestitures including PCS and FCS.

**Highlights**

- Positive FCF beginning 2021 even if prices stay depressed
  - Lithium volume growth
  - Lower CAPEX
- Net Cash from Operations improving on revenue growth and improved operating leverage
- CAPEX decline beginning in 2021 as Lithium expansion projects slow
- Significant opportunity for shareholder returns and reinvestment
Balanced Approach to Capital Allocation

1. Grow Dividend
   - 25 years of consecutive dividend increases
   - Targeting median specialty chemical payout ratio

2. Maintain Financial Flexibility
   - Maintain Investment Grade rating
   - Long-term Net Debt to Adj. EBITDA Target: 2.0x - 2.5x
   - Shorter-term Net Debt to Adj. EBITDA Target: 1.0x - 1.5x to increase growth flexibility

3. Invest to Grow Profitably
   - Strategically grow lithium capacity
   - Accelerate productivity projects
   - Build or buy conversion

4. Growth via M&A and / or JVs
   - Improved capital efficiency
   - Low-cost resources and operations

5. Repurchase Shares
   - Return excess cash to shareholders
   - Board authorization up to 7M additional shares

Committed to Driving Shareholder Value Over the Long Term
25 Years of Consecutive Dividend Growth

Further Opportunity with Free Cash Flow Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividends per Share ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>$0.10</td>
</tr>
<tr>
<td>1995</td>
<td>$1.47</td>
</tr>
</tbody>
</table>

Dividend Payout Ratio
ALB: 25%  
Specialty Chemicals: 38% - 40%

Cash from Ops Payout Ratio
ALB: 29%  
Specialty Chemicals: 20% - 23%

11% CAGR

1 As of November 22, 2019, TTM Net Income $572M TTM plus $21M TTM restructuring and acquisition-related expense and TTM dividends paid of $149M.  
2 As of November 22, 2019, TTM Cash Flow from Operation of $515M and TTM dividends paid of $149M.
Strong Financial Position Results in Strategic Flexibility

Credit Ratings
- S&P: Baa2 Stable
- Moody’s: BBB Stable
- Fitch: BBB Stable

- Committed to maintaining midpoint Investment Grade credit rating
- ~$1.3B liquidity
- 2019 Net Debt to Adj. EBITDA of 2.6x
- New bond issuance reduces weighted average interest cost by 70 bps to 2.7%
Estimated Annual EBITDA Improvement

Projects added between 2015 - 2024, CAPEX of ~ $2.1B - $2.4B

- **Jordan Bromine: Commissioned Tetrabrom (Q3 2018)**
  - 24 kT capacity expansion

- **China: Completed Acquisition of Jiangxi Jiangli (Q4 2016) and Commissioned Xinyu II (Q1 2019)**
  - 35 kT LCE capacity
  - Jiangxi Jiangli lithium conversion capacity acquisition
  - Xinyu II lithium hydroxide expansion

- **Chile: Commissioned La Negra II (Q1 2017) and Planned Commissioning of La Negra III & IV (Q1 2021)**
  - 60 kT LCE capacity
  - La Negra 2, 3, & 4 lithium carbonate expansion

- **Australia: MARBL JV, Planned Commissioning of Kemerton (Q2 / Q3 2021) and Phase II**
  - 60 kT LCE (ALB share of 100 kt capacity)
  - Kemerton lithium hydroxide greenfield
  - Phase 2 lithium hydroxide, location and timing TBD

$0.6B - $0.7B

Strategic Projects Expected to Generate Increased EBITDA of $600M - $700M by 2024
Measured Approach to Inorganic Growth: M&A & JVs

**OUR PHILOSOPHY**

- Enough resources for the next decade
- Limited interest in cash-only partnerships given our strong operating cash generation
- Will partner where the expertise of each partner strongly complements / strengthens a gap for the other

**STRATEGIC FILTERS**

- Lithium conversion assets
- Assets, businesses to fill out portfolio
- Specialized, next gen technology and / or materials

**FINANCIAL CRITERIA**

- Must meet our return hurdle: IRR > WACC
- Reduce capital intensity
- Brownfield return hurdle of IRR 2x WACC

Focused on Strengthening Portfolio and Accelerating Strategy
MARBL JV Adds Hard Rock Assets to Support Lithium Hydroxide Growth

- Partnered with Mineral Resources - world-class Australian mining services company
- Access to high-quality spodumene source strengthens our long-term asset position to support future demand growth
  - Cash payment of $820M for 60% interest in Wodgina Mine
  - Contributed 40% interest in 50,000-ton lithium hydroxide conversion plant being built by Albemarle at Kemerton in Western Australia
  - Albemarle will market 100% of the output
- 2020 EBITDA impact is expected to be a $10M expense and have a $0.50 impact on EPS; once fully built out to 100 ktpa of lithium hydroxide production, expect ROIC of 17% to 19%
- Decision made to idle production at Wodgina until 50 ktpa Kemerton conversion capacity ready to produce battery grade lithium hydroxide - commissioning in 2021, revenue in 2022
- Expect to build or buy additional 50 kT LCE through MARBL JV with lower capital intensity, if market dynamics indicate such capacity is needed
Assessing Strategic Alternatives of FCS and PCS Businesses

WHY PURSUE ALTERNATIVES
• Active interest from prospective buyers
• Profitable businesses with strong operating teams
• The right buyer would extend their track record of industry leadership and success
• Expect value greater than cash generated on their own

TIMELINE
• Targeting mid-2020 close
• Until sales are finalized, maintain “business as usual”
• Stay focused on safe operations

WHAT’S INCLUDED
• Manufacturing and Personnel: Pasadena, TX; South Haven, MI; Tyrone, PA

Fine Chemistry Services (FCS)
• Custom pharmaceutical and ag intermediates
• Generic active pharma ingredients

Polymer Catalysts Solutions (PCS)
• Co-catalysts for use in polypropylene production
• Line of Polyurethane curatives

~$50M - $60M
~$330M
2019 Estimated EBITDA
2019 Estimated Net Sales

Expect to Use Net Proceeds to Pay Down Debt and Reinvest

Divestitures will Result in ~80 bps Improvement in Adjusted EBITDA Margin
### 2024 Long-term Financial Targets

<table>
<thead>
<tr>
<th>5-Year Targets</th>
<th>LITHIUM</th>
<th>BROMINE</th>
<th>CATALYSTS&lt;sup&gt;2&lt;/sup&gt;</th>
<th>TOTAL ALB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue CAGR</strong></td>
<td>12% - 17%</td>
<td>1.5% - 2.5%</td>
<td>3% - 5%</td>
<td>6% - 9%</td>
</tr>
<tr>
<td><strong>Adj. EBITDA Margin&lt;sup&gt;1&lt;/sup&gt;</strong></td>
<td>40% - 45%</td>
<td>28% - 32%</td>
<td>26% - 28%</td>
<td>32% - 36%</td>
</tr>
<tr>
<td><strong>Adj. EBITDA</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>$1.5B - $1.8B</td>
</tr>
<tr>
<td><strong>Free Cash Flow</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>$0.8B - $1.0B</td>
</tr>
</tbody>
</table>

#### Assumptions
- 5% annual dividend growth
- $100M run-rate productivity savings by 2021
- 20% effective tax rate
- Currency flat at November 30, 2019 rate

<sup>1</sup> Non-GAAP measure. See Appendix for definition and Non-GAAP reconciliations of historical measures.

<sup>2</sup> Pro-forma excludes net impact from PCS and divested businesses.
Reaffirming 2021 financial targets and **introducing 2024 outlook**

**02** Confident in our ability to deliver value given investment in technology, talent and operational excellence

**03** Committed to achieving **cost savings of $100M** and positive cash flow in 2021 – we will get to **$1B FCF by 2024**

**04** Strong **financial flexibility** and balance sheet strength support capital deployment priorities

**05** Well positioned to **deliver shareholder value** over the next five years
Closing Remarks

Luke Kissam
Chairman, President & CEO
An Industry Leader with Significant Opportunity Ahead

01. Industry-leading, competitively advantaged positions across our portfolio, which will expand in the future

02. Strong secular trends support long-term growth to annual Adj. EBITDA of $1.5B - $1.8B and annual FCF of ~$1B by 2024

03. Focus on product quality, talent, low-cost operations, and effective management of our resources and assets

04. Product offerings are key enablers to a more sustainable world, and we are embedding sustainability into strategic decision making

05. Financial flexibility and balance sheet strength with significant free cash flow generation on the horizon
Q&A
Leadership Bios
Luke Kissam is Chairman, President & Chief Executive Officer.

Kissam was named Chief Executive Officer of Albemarle Corporation in September 2011. He was elected to the company’s board of directors in November 2011 and named chairman of the board in November 2016.

Kissam joined Albemarle in September 2003 as Vice President, General Counsel, and Corporate Secretary and served as Senior Vice President, Manufacturing and Law, and Corporate Secretary from January 2008 until his promotion to President in March 2010.

Prior to Albemarle, Kissam served as Vice President, General Counsel, and Secretary of Merisant Company, a manufacturer of artificial sweeteners such as Equal and Canderel, which was formed from Monsanto Company’s tabletop sweetener business. Prior to Merisant, Kissam served as Associate General Counsel of Monsanto Company, a multinational agrochemical and agricultural biotechnology corporation.

Kissam graduated magna cum laude from the University of South Carolina School of Law and summa cum laude from The Citadel. He serves on the board of directors at DuPont de Nemours, the American Chemistry Council, the Albemarle Foundation, The Citadel Foundation, and the Charlotte Sports Foundation. He previously served on the DowDuPont Specialty Products Advisory Committee and was an ex-officio member of the company’s board of directors.
Scott Tozier is Executive Vice President and Chief Financial Officer. In this role, he is responsible for all financial and fiscal management aspects of the company’s operations. He sets internal controls within the organization to protect the financial interest of stakeholders, provides leadership and coordination in the administrative, business planning, accounting and budgeting efforts of the company and addresses strategic management decisions from a financial standpoint. Customer service, purchasing and logistics functional groups report to him.

Tozier joined Albemarle in January 2011 as Senior Vice President and Chief Financial Officer.

Prior to joining Albemarle, Tozier served as Vice President of Finance, Transformation and Operations of Honeywell International. During his 16-year career with Honeywell, he held senior financial positions in the U.S., Australia and Europe. His increasingly progressive roles included management of Financial Planning, Analysis and Reporting, Global Credit and Treasury Services. He also served as Chief Financial Officer of Honeywell’s Transportation Systems, Turbo Technologies EMEA, Building Solutions EMEA, and Process Solutions Asia Pacific divisions.

Prior to Honeywell, Tozier served as Senior Auditor with the international firm Ernst & Young, LLP.

Tozier is a certified public accountant. He earned a Master of Business Administration from the University of Michigan and a bachelor’s degree in accounting and information systems from the University of Wisconsin-Madison.
Eric Norris is President of Albemarle's Lithium global business unit.

Norris joined Albemarle in January 2018 as Chief Strategy Officer. In this role, he managed the company's strategic planning, M&A, and corporate business development programs as well as its investor relations efforts.

Prior to joining Albemarle, Norris served as President of Health and Nutrition for FMC Corporation. Following FMC's announcement to acquire DuPont Agricultural Chemical assets, he led the divestiture of FMC Health and Nutrition to DuPont. Previously, Norris served as Vice President and Global Business Director for FMC Health and Nutrition, and Vice President and Global Business Director for FMC Lithium. During his 16-year FMC career, he served in additional leadership roles including Investor Relations, Corporate Development and Director of FMC Healthcare Ventures.

Prior to FMC, Norris founded and led an internet-based firm offering formulation and design tools to the chemical industry. Previously, he served as Director of Investor Relations for Rohm and Haas Company.

Norris earned an MBA from Harvard University and a bachelor's degree in chemistry and German from Colgate University.
Dr. Glen Merfeld is Chief Technical Officer for the Lithium business. In this role, he leads all Lithium research and development in the areas of hydrogeology, extraction technology, energy storage, specialty materials, battery recycling and data science.

Prior to joining Albemarle, Merfeld held several progressive leadership roles over a 20-year career with GE’s Global Research Center where he led material development and product innovation in batteries, thin-film solar, organic light-emitting diodes as well as polymers, coatings, and composites. Within energy storage, his contributions reached from fundamental material physics to scaled manufacturing processes with end-use in applications ranging from watt-hour capacitors for portable x-ray detectors to megawatt-hour batteries for grid connected wind turbines. He also led the creation of data science methods for directing research priorities, setting product strategy, and guiding capital allocation.

Merfeld was a founding member of the New York Battery & Energy Storage Technology consortium and served as an industrial advisory board member of Argonne National Laboratory's Joint Center for Energy Storage Research. He also served as an Advisory Board member for the University of Maryland's Energy Frontier Research Center on nano-enabled energy storage.

Merfeld earned a Doctorate in chemical engineering from the University of Texas at Austin and a bachelor’s degree in chemical engineering from Northwestern University. He holds 14 patents and has authored more than 35 publications.
Netha Johnson | President, Bromine Specialties

Netha Johnson is President of Albemarle’s Bromine Specialties global business unit.

Johnson joined Albemarle in 2018 as President of Bromine Specialties after more than 20 years of diverse leadership experience, both domestically and internationally. He has worked extensively in Singapore, Malaysia, Taiwan, Japan and Germany.

Prior to joining Albemarle, Johnson served in several progressive leadership roles with 3M Company. Most recently, he served as Vice President and General Manager, Electrical Markets Division, where he was directly responsible for 3M’s electrical and renewable energy solutions. Prior to that, he served as 3M’s Vice President, Advanced Materials Division. In this role, he was responsible for three distinct businesses comprising the Advanced Material division, which provided world-leading, innovative solutions in fluoropolymer chemicals, advanced ceramics and light-weighting materials.

Preceding his business career, Johnson served as a U.S. Naval Special Operations Officer.

Johnson earned a Master of Business Administration from Duke University and a bachelor’s degree in aerospace engineering from the University of Southern California.
Raphael Crawford | President, Catalysts

Raphael Crawford is President of Albemarle’s Refining Catalysts global business unit.

Crawford joined Albemarle in 2012 as Vice President of the Performance Catalyst Solutions division. In 2015, he was appointed Vice President of the Synthesis and Polymer Solutions division, as well as the Managing Director for Rockwood Lithium GbmH in Germany. Later in 2015, Crawford was appointed President of the Bromine Specialties business unit. In 2018, he assumed his current role as President of the Catalysts business unit.

Prior to Albemarle, Crawford served as the Director of Global Marketing and Business Development for Dow Coating Materials, a global business unit of The Dow Chemical Company. He also served as the Global Commercial Director and Global Asset Director for Dow Water and Process Solutions, following the acquisition of Rohm and Haas Company. Previously, Crawford held various strategic marketing and commercial roles at Rohm and Haas.

Prior to Rohm and Haas, Crawford worked at Campbell Soup Company as a Marketing Manager. He began his career at SNET Telecommunications where he served in several capacities including new ventures, finance and marketing.

Crawford currently serves on the Association of American Fuel & Petrochemical Manufacturers (AFPM) Board of Directors, where he has served as chairman of the Petrochemical Members Committee and has been elected to a member of the Executive Committee starting in 2020.

Crawford earned a master’s degree in finance from the University of New Haven where he serves on their Board of Governors and a bachelor’s degree in economics from Wesleyan University. He is a graduate of the Advanced Management Program at the University of Chicago Booth School of Business and maintains professional certifications in management accounting and financial management by the Institute of Management Accountants.
Dave Ryan serves as Albemarle’s Vice President, Corporate Strategy and Investor Relations. In this role, he manages the company’s strategic planning, M&A, and corporate business development programs, as well as its investor relations efforts.

Ryan joined Albemarle in April 2016 as Vice President and Treasurer after a 25-year career with West Rock Company where he held several progressive leadership roles.

At WestRock, Ryan served as Vice President, Special Projects, responsible for leading the spin-off of the Specialty Chemicals Division into a standalone, publicly traded company. Prior to that, he served in a wide range of strategic finance roles at WestRock including, Chief Financial Officer of the Packaging Platform and the Specialty Chemicals divisions. While with Specialty Chemicals, Ryan also served as Chief Strategy Officer and General Manager of the Industrial Air Purification business. He also held several positions in the Beverage Packaging, Consumer Products, and Electronic Publishing businesses.

Ryan earned a Master of Business Administration from the University of Cincinnati and a bachelor’s degree in finance from the University of Dayton.
Karen Narwold | EVP & CAO

Karen Narwold serves as Albemarle’s Executive Vice President, Chief Administrative Officer and General Counsel. In this role, she leads the company’s legal, ethics and compliance, government and regulatory affairs, and communications groups.

Narwold joined Albemarle in September 2010 as Senior Vice President, General Counsel and Corporate Secretary. In 2016, she was appointed Executive Vice President, CAO and General Counsel.

Narwold has over 29 years of experience with industrial and chemical companies.

Prior to joining Albemarle, she served as Special Counsel with Kelley Drye & Warren LLP and with Symmetry Advisors, where she worked in the areas of strategic, financial and capital structure planning and restructuring for public and private companies.

Previously, she served as Vice President and Strategic Counsel of Barzel Industries, a North American steel processor and distributor. Prior to Barzel, Narwold served as Vice President, General Counsel, Human Resources and Corporate Secretary during her 16-year career with GrafTech International, a global graphite and carbon manufacturer and former subsidiary of Union Carbide. She began her career practicing private law.

Narwold graduated with honors from the University of Connecticut School of Law and summa cum laude with a bachelor’s degree in political science from the University of Connecticut.
DeeAnne Marlow serves as Albemarle's Chief Human Resources Officer. In this role, she is responsible for leading the execution of the Human Resources’ strategic plan and key initiatives with an emphasis on business partnerships, talent acquisition and development, compensation and benefits, inclusion and diversity programs, and HR operations.

Prior to joining Albemarle in 2018, Marlow served as Senior Vice President, Chief Human Resources Officer, at Greif, Inc., a leader in industrial packaging solutions.

Previously, she spent seven years with Cummins, Inc., where she led Human Resources for the Turbo Technologies business and then for the Global Power Generation business segment. In addition, she had responsibility for all Cummins operations in Central America and the Middle East including multiple manufacturing facilities, sales, engineering technical centers and general management / support. She was also responsible for marketing and sales capability development and succession across Cummins.

Prior to Cummins, Marlow held progressive leadership roles with GE, SC Johnson, and Principal Financial, where she gained experience in consumer products, financial services, diversified industrials and healthcare.

Marlow earned a Masters of Business Administration from the University of South Dakota and a bachelor’s degree from Luther College in Decorah, Iowa. She is SPHR Certified and a Six Sigma Green Belt.
Tom Thomas serves as Albemarle’s Vice President of Integrated Business Operations.

Thomas joined Albemarle in 2011 as Division Vice President, Fine Chemistry Services. In 2013, he was appointed Division Vice President, Stabilizers and Curatives and was a co-lead of the Integration Management Office for the Rockwood Specialties acquisition. In 2015, he assumed his current role leading Albemarle’s integrated business operations.

Thomas has over 30 years of business development and general management experience in the specialty, fine and electronic chemical industries.

Prior to joining Albemarle, Thomas held various global executive management positions at Engelhard Corporation (acquired by BASF in June 2006), Honeywell Specialty Chemicals, and FMC Corporation’s Lithium Division. He has also held key sales and sales management positions within Nalco Chemical Company and Unocal Chemicals Division.

Thomas earned a bachelor’s degree in chemical engineering from Carnegie Mellon University.
Jac Fourie serves as Albemarle’s Vice President, Engineering and Project Execution.

Fourie joined Albemarle in January 2019 as Vice President, Engineering and Project Execution. In this role he is responsible for Albemarle’s engineering, project development, and project execution activities across major projects and sustaining capital.

Prior to joining Albemarle, Fourie served as Senior Vice President of Capital Projects for Barrick Gold Corporation, where he was responsible for projects in the U.S., Chile, Argentina and Saudi Arabia.

Previously, Fourie spent 16 years with BHP Billiton where he held various leadership roles in projects, operations, marketing and business development. As VP Projects - Iron Ore, he oversaw a portfolio of major capital projects and sustaining capital projects in Western Australia. As Head of Group Business Management Systems, he was responsible for implementing a large SAP system project for BHP Billiton, while based in Singapore. Prior to this, he was Asset President of BHP Billiton’s New Mexico Coal business.

Fourie earned his Masters of Business Administration from The Wharton School at the University of Pennsylvania and was recognized as the Ford Scholar for best academic performance. He graduated with honors from University of Pretoria with a bachelor’s degree in both chemical engineering and mathematics.
Michael Brown serves as Albemarle’s Vice President of Global HSE & Operational Excellence. In this role, he is responsible for overseeing the company’s health and safety initiatives designed to protect our people, assets, environment and communities, while maintaining a strong focus on continuous improvement and operational excellence.

Brown joined Albemarle in 1997 as an operations and technology engineer. Over the past 22 years, he has held a variety of progressive leadership roles, primarily in manufacturing operations. Most recently, Brown served as Division Vice President, Manufacturing, where he was responsible for production, HSE, strategic sourcing, cost management, and organizational development. He also has served as Plant Manager for several union and non-union facilities and served in manufacturing leadership roles in each of the company’s four global business units. Prior to that, he assumed roles in Strategic Sourcing and Technology Resources.

Brown earned his Masters of Business Administration from the University of South Carolina and his bachelor’s degree in chemical engineering from the Georgia Institute of Technology.
Appendix

Non-GAAP Reconciliations and Glossary
### Adj. Net Income

<table>
<thead>
<tr>
<th>($ in thousands)</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income attributable to Albemarle Corporation</td>
<td>$155,070</td>
<td>$129,745</td>
</tr>
<tr>
<td>Add back:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-operating pension and OPEB items (net of tax)</td>
<td>(543)</td>
<td>(1,856)</td>
</tr>
<tr>
<td>Non-recurring and other unusual items (net of tax)</td>
<td>8,497</td>
<td>13,568</td>
</tr>
<tr>
<td>Adj. net income attributable to Albemarle Corporation</td>
<td>$163,024</td>
<td>$141,457</td>
</tr>
<tr>
<td>Adj. diluted earnings per share</td>
<td>$1.53</td>
<td>$1.31</td>
</tr>
<tr>
<td>Weighted-average common shares outstanding – diluted</td>
<td>106,299</td>
<td>108,302</td>
</tr>
</tbody>
</table>

See above for a reconciliation of Adj. net income, the non-GAAP financial measures, to Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with GAAP.
# Net Income (Loss)

<table>
<thead>
<tr>
<th></th>
<th>Three Months Ended</th>
<th>Year Ended</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December 31,</td>
<td>December 31,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>Net income (loss) attributable to Albemarle Corporation</td>
<td>$129,596</td>
<td>$(218,366)</td>
<td>$693,562</td>
</tr>
<tr>
<td>Add back:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-operating pension and OPEB items (net of tax)</td>
<td>8,829</td>
<td>(8,455)</td>
<td>3,234</td>
</tr>
<tr>
<td>Non-recurring and other unusual items (net of tax)</td>
<td>25,291</td>
<td>376,641</td>
<td>(96,440)</td>
</tr>
<tr>
<td>Adj. net income attributable to Albemarle Corporation</td>
<td>163,716</td>
<td>149,820</td>
<td>600,356</td>
</tr>
<tr>
<td>Pro-forma: Net impact of (income) from non-cash FX gain (net of tax)</td>
<td>—</td>
<td>—</td>
<td>(8,448)</td>
</tr>
<tr>
<td>Pro-forma: Net impact of income from divested businesses (net of tax)</td>
<td>—</td>
<td>—</td>
<td>594,114</td>
</tr>
<tr>
<td>Pro-forma Adj. net income</td>
<td>163,716</td>
<td>141,372</td>
<td>543</td>
</tr>
<tr>
<td>Adj. diluted earnings per share</td>
<td>$1.53</td>
<td>$1.34</td>
<td>$5.48</td>
</tr>
<tr>
<td>Pro-forma Adj. diluted earnings per share</td>
<td>$1.53</td>
<td>$1.26</td>
<td>$5.43</td>
</tr>
<tr>
<td>Weighted-average common shares outstanding - diluted</td>
<td>107,005</td>
<td>112,152</td>
<td>109,458</td>
</tr>
</tbody>
</table>

See above for a reconciliation of Adj. net income (loss), and pro-forma Adj. 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. Adj. 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 Adj. 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 and Adj. EBITDA

<table>
<thead>
<tr>
<th>($ in thousands)</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$129,745</td>
</tr>
<tr>
<td>Add back:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest and financing expenses</td>
<td>11,108</td>
<td>12,988</td>
</tr>
<tr>
<td>Income tax expense</td>
<td>25,341</td>
<td>33,167</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>54,487</td>
<td>49,707</td>
</tr>
<tr>
<td><strong>EBITDA</strong></td>
<td>246,006</td>
<td>225,607</td>
</tr>
<tr>
<td>Non-operating pension and OPEB items</td>
<td>(551)</td>
<td>(2,195)</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>8,896</td>
<td>11,670</td>
</tr>
<tr>
<td><strong>Adj. EBITDA</strong></td>
<td>254,351</td>
<td>235,082</td>
</tr>
<tr>
<td><strong>Net sales</strong></td>
<td>$879,747</td>
<td>$777,748</td>
</tr>
<tr>
<td>EBITDA margin</td>
<td>28.0%</td>
<td>29.0%</td>
</tr>
<tr>
<td>Adj. EBITDA margin</td>
<td>28.9%</td>
<td>30.2%</td>
</tr>
</tbody>
</table>

See above for a reconciliation of EBITDA, Adj. EBITDA and the non-GAAP financial measures, to Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with GAAP.
Three Months Ended \(\text{Year Ended} \quad \text{December 31,} \end{align*}

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (loss) attributable to Albemarle Corporation</td>
<td>$129,596</td>
<td>$(218,366)</td>
<td>$693,562</td>
<td>$54,850</td>
</tr>
<tr>
<td>Add back:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest and financing expenses</td>
<td>12,571</td>
<td>16,455</td>
<td>52,405</td>
<td>115,350</td>
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<tr>
<td>Income tax expense</td>
<td>11,196</td>
<td>378,221</td>
<td>144,826</td>
<td>431,817</td>
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<tr>
<td>Depreciation and amortization</td>
<td>50,187</td>
<td>52,841</td>
<td>200,698</td>
<td>196,928</td>
</tr>
<tr>
<td>EBITDA</td>
<td>203,550</td>
<td>229,151</td>
<td>1,091,491</td>
<td>798,945</td>
</tr>
<tr>
<td>Non-operating pension and OPEB items</td>
<td>11,881</td>
<td>(12,981)</td>
<td>5,285</td>
<td>(16,125)</td>
</tr>
<tr>
<td>Non-recurring and other unusual items (excluding items associated with interest expense)</td>
<td>48,871</td>
<td>29,610</td>
<td>(90,112)</td>
<td>102,660</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>$264,302</td>
<td>$245,780</td>
<td>$1,006,664</td>
<td>$885,480</td>
</tr>
<tr>
<td>Pro-forma Adj. EBITDA</td>
<td>$264,302</td>
<td>$235,624</td>
<td>$995,792</td>
<td>$848,357</td>
</tr>
<tr>
<td>Net sales</td>
<td>$921,699</td>
<td>$857,789</td>
<td>$3,374,950</td>
<td>$3,071,976</td>
</tr>
<tr>
<td>Pro-forma: Net impact of net sales from divested businesses</td>
<td>$3,374,950</td>
<td>$3,071,976</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pro-forma net sales</td>
<td>$921,699</td>
<td>$831,565</td>
<td>$2,972,485</td>
<td></td>
</tr>
</tbody>
</table>

EBITDA margin

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA margin</td>
<td>22.1%</td>
<td>26.7%</td>
<td>32.3%</td>
<td>26.0%</td>
</tr>
<tr>
<td>Adj. EBITDA margin</td>
<td>28.7%</td>
<td>28.7%</td>
<td>29.8%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Pro-forma Adj. EBITDA margin</td>
<td>28.7%</td>
<td>28.3%</td>
<td>29.7%</td>
<td>28.5%</td>
</tr>
</tbody>
</table>

YoY difference in Pro-forma Adj. EBITDA margin

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>YoY difference in Pro-forma Adj. EBITDA margin</td>
<td>34 bps</td>
<td>120 bps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Adj. EBITDA - by Segment (3 Months ended September 30)

### ($ in thousands)

#### Three months ended September 30, 2019:

<table>
<thead>
<tr>
<th></th>
<th>Lithium</th>
<th>Bromine Specialties</th>
<th>Catalysts</th>
<th>Reportable Segments Total</th>
<th>All Other</th>
<th>Corporate</th>
<th>Consolidated Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (loss) attributable to Albemarle Corporation</td>
<td>$102,136</td>
<td>$75,224</td>
<td>$54,345</td>
<td>$231,705</td>
<td>$8,305</td>
<td>$(84,940)</td>
<td>$155,070</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>25,212</td>
<td>12,448</td>
<td>12,599</td>
<td>50,259</td>
<td>2,143</td>
<td>2,085</td>
<td>54,487</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>111</td>
<td>1,142</td>
<td>—</td>
<td>1,253</td>
<td>—</td>
<td>7,643</td>
<td>8,896</td>
</tr>
<tr>
<td>Interest and financing expenses</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>11,108</td>
<td>11,108</td>
</tr>
<tr>
<td>Income tax expense</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>25,341</td>
<td>25,341</td>
</tr>
<tr>
<td>Non-operating pension and OPEB items</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>(551)</td>
<td>(551)</td>
</tr>
<tr>
<td><strong>Adjusted EBITDA</strong></td>
<td><strong>$127,459</strong></td>
<td><strong>$88,814</strong></td>
<td><strong>$66,944</strong></td>
<td><strong>$283,217</strong></td>
<td><strong>$10,448</strong></td>
<td><strong>$(39,314)</strong></td>
<td><strong>$254,351</strong></td>
</tr>
</tbody>
</table>

#### Three months ended September 30, 2018:

<table>
<thead>
<tr>
<th></th>
<th>Lithium</th>
<th>Bromine Specialties</th>
<th>Catalysts</th>
<th>Reportable Segments Total</th>
<th>All Other</th>
<th>Corporate</th>
<th>Consolidated Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (loss) attributable to Albemarle Corporation</td>
<td>$90,313</td>
<td>$67,967</td>
<td>$50,491</td>
<td>$208,771</td>
<td>$1,978</td>
<td>$(81,004)</td>
<td>$129,745</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>23,370</td>
<td>10,618</td>
<td>12,111</td>
<td>46,099</td>
<td>1,990</td>
<td>1,618</td>
<td>49,707</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>(54)</td>
<td>—</td>
<td>—</td>
<td>(54)</td>
<td>—</td>
<td>11,724</td>
<td>11,670</td>
</tr>
<tr>
<td>Interest and financing expenses</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>12,988</td>
<td>12,988</td>
</tr>
<tr>
<td>Income tax expense</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>33,167</td>
<td>33,167</td>
</tr>
<tr>
<td>Non-operating pension and OPEB items</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>(2,195)</td>
<td>(2,195)</td>
</tr>
<tr>
<td><strong>Adjusted EBITDA</strong></td>
<td><strong>$113,629</strong></td>
<td><strong>$78,585</strong></td>
<td><strong>$62,602</strong></td>
<td><strong>$254,816</strong></td>
<td><strong>$3,968</strong></td>
<td><strong>$(23,702)</strong></td>
<td><strong>$235,082</strong></td>
</tr>
</tbody>
</table>

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.
See above for adjusted EBITDA margin, a non-GAAP financial measure defined as adjusted EBITDA divided by net sales. See slide 22 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.
## Adj. EBITDA - Continuing Operations (12 Months Ended)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuing Operations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net income attributable to Albemarle Corporation</td>
<td>$345,600</td>
<td>$693,562</td>
<td>$695,371</td>
<td>$547,108</td>
<td>$572,433</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>203,352</td>
<td>200,698</td>
<td>199,651</td>
<td>202,125</td>
<td>206,905</td>
</tr>
<tr>
<td>Non-recurring and other unusual items (excluding items associated with interest expense)</td>
<td>(109,373)</td>
<td>(90,112)</td>
<td>(131,540)</td>
<td>67,457</td>
<td>64,683</td>
</tr>
<tr>
<td>Interest and financing expenses</td>
<td>56,289</td>
<td>52,405</td>
<td>51,453</td>
<td>49,746</td>
<td>47,866</td>
</tr>
<tr>
<td>Income tax expense</td>
<td>511,851</td>
<td>144,826</td>
<td>161,979</td>
<td>112,288</td>
<td>104,462</td>
</tr>
<tr>
<td>Non-operating pension and OPEB items</td>
<td>(19,577)</td>
<td>5,285</td>
<td>6,899</td>
<td>8,427</td>
<td>10,071</td>
</tr>
<tr>
<td><strong>Adj. EBITDA</strong></td>
<td>988,142</td>
<td>1,006,664</td>
<td>983,813</td>
<td>987,151</td>
<td>1,006,420</td>
</tr>
<tr>
<td>Pro-forma: Net impact of Adj. EBITDA from divested businesses</td>
<td>(21,028)</td>
<td>(10,872)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Pro-forma Adj. EBITDA</strong></td>
<td>967,114</td>
<td>995,792</td>
<td>983,813</td>
<td>987,151</td>
<td>1,006,420</td>
</tr>
<tr>
<td>Net Sales</td>
<td>$3,311,040</td>
<td>$3,374,950</td>
<td>$3,385,385</td>
<td>$3,416,563</td>
<td>$3,518,562</td>
</tr>
<tr>
<td>Pro-forma: Net impact of Net Sales from divested business</td>
<td>(53,306)</td>
<td>(27,082)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Pro-forma Net Sales</strong></td>
<td>3,257,734</td>
<td>3,347,868</td>
<td>3,385,385</td>
<td>3,416,563</td>
<td>3,518,562</td>
</tr>
<tr>
<td><strong>Pro-forma Adj. EBITDA Margin</strong></td>
<td>30%</td>
<td>30%</td>
<td>29%</td>
<td>29%</td>
<td>29%</td>
</tr>
</tbody>
</table>

See above for a reconciliation of Adj. EBITDA and pro-forma Adj. EBITDA, the non-GAAP financial measures, to Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with GAAP.

See above for a reconciliation of pro-forma net sales, the non-GAAP financial measure, to net sales, the most directly comparable financial measure calculated and reported in accordance with GAAP.
## Adj. EBITDA - by Segment (12 Months Ended)

($ in thousands)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lithium</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net income attributable to Albemarle Corporation</td>
<td>$409,753</td>
<td>$428,212</td>
<td>$413,047</td>
<td>$413,058</td>
<td>$424,881</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>96,798</td>
<td>95,193</td>
<td>93,220</td>
<td>93,260</td>
<td>95,102</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>(1,635)</td>
<td>7,366</td>
<td>9,108</td>
<td>9,219</td>
<td>9,384</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>504,916</td>
<td>530,773</td>
<td>515,375</td>
<td>515,537</td>
<td>529,367</td>
</tr>
<tr>
<td>Net Sales</td>
<td>1,176,120</td>
<td>1,228,171</td>
<td>1,222,025</td>
<td>1,229,220</td>
<td>1,288,678</td>
</tr>
<tr>
<td>Adj. EBITDA Margin</td>
<td>43%</td>
<td>43%</td>
<td>42%</td>
<td>42%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Bromine Specialties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net income attributable to Albemarle Corporation</td>
<td>$241,822</td>
<td>$246,509</td>
<td>$254,453</td>
<td>$264,396</td>
<td>$271,653</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>40,501</td>
<td>41,607</td>
<td>42,291</td>
<td>44,313</td>
<td>46,143</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,142</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>282,323</td>
<td>288,116</td>
<td>296,744</td>
<td>308,709</td>
<td>319,838</td>
</tr>
<tr>
<td>Net Sales</td>
<td>897,853</td>
<td>917,880</td>
<td>941,293</td>
<td>976,212</td>
<td>999,863</td>
</tr>
<tr>
<td>Adj. EBITDA Margin</td>
<td>31%</td>
<td>31%</td>
<td>32%</td>
<td>32%</td>
<td>32%</td>
</tr>
<tr>
<td><strong>Catalysts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net income attributable to Albemarle Corporation</td>
<td>$458,897</td>
<td>$445,604</td>
<td>$437,803</td>
<td>$211,040</td>
<td>$214,894</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>51,655</td>
<td>49,131</td>
<td>49,173</td>
<td>49,004</td>
<td>49,492</td>
</tr>
<tr>
<td>Non-recurring and other unusual items</td>
<td>(218,705)</td>
<td>(210,429)</td>
<td>(210,429)</td>
<td>9,277</td>
<td>9,277</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>291,847</td>
<td>284,307</td>
<td>276,548</td>
<td>268,321</td>
<td>272,663</td>
</tr>
<tr>
<td>Pro-forma: Net impact of Adj. EBITDA from divested business</td>
<td>(21,028)</td>
<td>(10,872)</td>
<td>276,548</td>
<td>268,321</td>
<td>272,663</td>
</tr>
<tr>
<td><strong>Pro-forma Adj. EBITDA</strong></td>
<td>270,819</td>
<td>273,435</td>
<td>276,548</td>
<td>268,321</td>
<td>272,663</td>
</tr>
<tr>
<td>Net Sales</td>
<td>1,107,987</td>
<td>1,101,554</td>
<td>1,092,485</td>
<td>1,073,820</td>
<td>1,084,027</td>
</tr>
<tr>
<td>Pro-forma: Net impact of net sales from divested business</td>
<td>(53,306)</td>
<td>(27,082)</td>
<td>1,092,485</td>
<td>1,073,820</td>
<td>1,084,027</td>
</tr>
<tr>
<td>Pro-forma Net Sales</td>
<td>1,054,681</td>
<td>1,074,472</td>
<td>1,092,485</td>
<td>1,073,820</td>
<td>1,084,027</td>
</tr>
<tr>
<td>Pro-forma Adj. EBITDA Margin</td>
<td>26%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

See above for a reconciliation of Adj. EBITDA and pro-forma Adj. EBITDA on a segment basis, the non-GAAP financial measures, to Net income attributable to Albemarle Corporation ("earnings"), the most directly comparable financial measure calculated and reporting in accordance with GAAP.

See above for a reconciliation of pro-forma net sales on a segment basis, the non-GAAP financial measure, to net sales, the most directly comparable financial measure calculated and reported in accordance with GAAP.
### Adj. EBITDA Supplemental

($ in thousands)

<table>
<thead>
<tr>
<th></th>
<th>12 Months Ended</th>
<th>3 Months Ended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sep 30, 2019</td>
<td>Sep 30, 2019</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>$1,006,420</td>
<td>$254,351</td>
</tr>
<tr>
<td>Net income attributable to noncontrolling interests</td>
<td>71,730</td>
<td>16,548</td>
</tr>
<tr>
<td>Equity in net income of unconsolidated investments (net of tax)</td>
<td>(134,264)</td>
<td>(33,236)</td>
</tr>
<tr>
<td>Dividends received from unconsolidated investments</td>
<td>87,603</td>
<td>2,691</td>
</tr>
<tr>
<td>Consolidated EBITDA</td>
<td>$1,031,489</td>
<td>$240,354</td>
</tr>
<tr>
<td>Total Long Term Debt (as reported)</td>
<td>$1,921,944</td>
<td></td>
</tr>
<tr>
<td>Off balance sheet obligations and other</td>
<td>79,500</td>
<td></td>
</tr>
<tr>
<td>Consolidated Funded Debt</td>
<td>$2,001,444</td>
<td></td>
</tr>
<tr>
<td>Less Cash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consolidated Funded Net Debt</td>
<td>$1,683,621</td>
<td></td>
</tr>
</tbody>
</table>

**Consolidated Funded Debt to Consolidated EBITDA Ratio**

1.9

**Consolidated Funded Net Debt to Consolidated EBITDA Ratio**

1.6

---

1 This supplemental is for Net Debt to Adj. EBITDA ratio based on the bank covenant definition.
## Diluted EPS

<table>
<thead>
<tr>
<th>Three Months Ended September 30,</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diluted earnings per share attributable to Albemarle Corporation</td>
<td>$1.46</td>
<td>$1.20</td>
</tr>
<tr>
<td><strong>Add back:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-operating pension and OPEB items (net of tax)</td>
<td>$(0.01)</td>
<td>$(0.02)</td>
</tr>
<tr>
<td>Non-recurring and other unusual items (net of tax)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restructuring and other</td>
<td>—</td>
<td>0.04</td>
</tr>
<tr>
<td>Acquisition and integration related costs</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Legal accrual</td>
<td>—</td>
<td>0.02</td>
</tr>
<tr>
<td>Other</td>
<td>0.05</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Total non-recurring and other unusual items</strong></td>
<td>0.08</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Adj. diluted earnings per share</strong></td>
<td>$1.53</td>
<td>$1.31</td>
</tr>
</tbody>
</table>

1 Totals may not add due to rounding.
## Diluted EPS

<table>
<thead>
<tr>
<th></th>
<th>Three Months Ended</th>
<th>Year Ended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>December 31,</td>
<td>December 31,</td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>2017</td>
</tr>
<tr>
<td>Diluted earnings (loss) per share</td>
<td>$1.21</td>
<td>$(1.95)</td>
</tr>
</tbody>
</table>

### Add back:

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-operating pension and OPEB items(a)</td>
<td>0.08</td>
<td>(0.08)</td>
<td>0.03</td>
<td>(0.09)</td>
</tr>
</tbody>
</table>

### Non-recurring and other unusual items (net of tax)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilization of inventory markup</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.15</td>
</tr>
<tr>
<td>Restructuring and other</td>
<td>—</td>
<td>(0.01)</td>
<td>0.03</td>
<td>0.11</td>
</tr>
<tr>
<td>Acquisition and integration related costs</td>
<td>0.05</td>
<td>0.06</td>
<td>0.14</td>
<td>0.24</td>
</tr>
<tr>
<td>Albemarle Foundation contribution</td>
<td>—</td>
<td>—</td>
<td>0.11</td>
<td>—</td>
</tr>
<tr>
<td>Gain on sale of business</td>
<td>0.06</td>
<td>—</td>
<td>(1.55)</td>
<td>—</td>
</tr>
<tr>
<td>Gain on acquisition</td>
<td>—</td>
<td>0.01</td>
<td>—</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Legal accrual</td>
<td>—</td>
<td>—</td>
<td>0.21</td>
<td>—</td>
</tr>
<tr>
<td>Environmental accrual</td>
<td>—</td>
<td>—</td>
<td>0.11</td>
<td>—</td>
</tr>
<tr>
<td>Loss on extinguishment of debt</td>
<td>—</td>
<td>(0.04)</td>
<td>—</td>
<td>0.30</td>
</tr>
<tr>
<td>Indemnification adjustments</td>
<td>0.23</td>
<td>—</td>
<td>0.23</td>
<td>—</td>
</tr>
<tr>
<td>Note receivable reserve</td>
<td>—</td>
<td>0.18</td>
<td>—</td>
<td>0.18</td>
</tr>
<tr>
<td>Other</td>
<td>0.07</td>
<td>(0.02)</td>
<td>0.11</td>
<td>0.06</td>
</tr>
</tbody>
</table>

### Discrete tax items

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total non-recurring and other unusual items</td>
<td>0.24</td>
<td>3.36</td>
</tr>
<tr>
<td>Adj. diluted earnings per share(^1)</td>
<td>$1.53</td>
<td>$1.34</td>
</tr>
</tbody>
</table>

\(1\) Totals may not add due to rounding.
Effective Tax Rate

<table>
<thead>
<tr>
<th>($ in thousands)</th>
<th>Income before income taxes and equity in net income of unconsolidated investments</th>
<th>Income tax expense</th>
<th>Effective income tax rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Three months ended September 30, 2019:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As reported</td>
<td>$ 163,723 $</td>
<td>$ 25,341</td>
<td>15.5%</td>
</tr>
<tr>
<td>Non-recurring, other unusual and non-operating pension and OPEB items</td>
<td>8,345</td>
<td>391</td>
<td></td>
</tr>
<tr>
<td>As adjusted</td>
<td>$ 172,068 $</td>
<td>$ 25,732</td>
<td>15.0%</td>
</tr>
</tbody>
</table>

| **Three months ended September 30, 2018:** |                                                                                  |                    |                          |
| As reported      | $ 154,565 $                                                                      | $ 33,167           | 21.5%                    |
| Non-recurring, other unusual and non-operating pension and OPEB items | 9,475 | (2,237) | |
| As adjusted      | $ 164,040 $                                                                      | $ 30,930           | 18.9%                    |

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 September 30,

<table>
<thead>
<tr>
<th></th>
<th>Equity Income</th>
<th>Noncontrolling Interest</th>
<th>Equity Income</th>
<th>Noncontrolling Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2019</td>
<td>2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithium</td>
<td>$ 31,603</td>
<td>$ —</td>
<td>$ 17,901</td>
<td>$ —</td>
</tr>
<tr>
<td>Bromine Specialties</td>
<td>—</td>
<td>(16,492)</td>
<td>—</td>
<td>(13,717)</td>
</tr>
<tr>
<td>Catalysts</td>
<td>1,633</td>
<td>—</td>
<td>4,180</td>
<td>—</td>
</tr>
<tr>
<td>Corporate</td>
<td>—</td>
<td>(56)</td>
<td>—</td>
<td>(17)</td>
</tr>
<tr>
<td>Total Company</td>
<td>$ 33,236</td>
<td>(16,548)</td>
<td>$ 22,081</td>
<td>(13,734)</td>
</tr>
</tbody>
</table>
### Glossary

#### General
- GBU: Global Business Unit
- OPEB: Other Postemployment Benefits
- MT: Metric Tons
- IoT: Internet of Things
- ppm: parts per million
- kT: 1000’s Metric Tons
- CAPEX: Capital expenditure

#### Bromine Specialties
- CCF: Clear Completion Fluid
- PTA: Purified Terephthalic Acid
- PET: Polyethylene Terephthalate
- ICL: Israel Chemicals Ltd
- LXS: Lanxess
- CHMT: Chemtura
- JBC: Jordan Bromine Company
- APC: Arab Potash Company
- LSOH: Low Smoke, Zero Halogen
- EPS: Expanded Polystyrene
- XPS: Extruded Polystyrene
- HFO: Hydrofluoroolefin
- ADAS: Advanced Driver Assistance System
- FR: Flame Retardant

#### Catalyst
- FCC: Fluid Cracking Catalysts
- CFT: Clean Fuels Technology
- HPC: Hydro Processing Catalysts
- HC: Hydrocracking
- HCPT: Hydrocracking Pretreatment
- LPG: Liquefied Petroleum Gas
- VGO: Vacuum Gas Oil
- RESID: Residual Fuel Oil
- APC: Arab Potash Company
- LSOH: Low Smoke, Zero Halogen
- ULSD: Ultra-Low Sulfur Diesel
- PHEV: Plug-in Hybrid Electric Vehicle
Glossary Continued

**Lithium**
- Li: Lithium
- LiCl: Lithium Chloride
- LiO₂: Lithium Oxide
- Li₂CO₃: Lithium Carbonate
- TG: Technical Grade
- LCE: Lithium Carbonate Equivalent
- LDV: Light Duty Vehicles
- BEV: Battery Electric Vehicles
- HEV: Hybrid Electric Vehicle
- xEV: Plug-in Electric Vehicle
- PEV: Plug-in Electric Vehicle
- ESS: Energy Storage System
- CE: Consumer Electronics
- ICE: Internal Combustion Engine
- IPP: Independent Power Producer
- KWh: Kilowatt hour
- GWh: Gigawatt hour
- Pen. Rate: Penetration rate as a % of annual sale

- OII: Occupational Illness and Injury, OSHA standard - injuries per 200,000 hours worked
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