

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the fiscal year ended December 31, 2019

or

Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 001-12658

**ALBEMARLE CORPORATION**

(Exact name of registrant as specified in its charter)

Virginia

(State or other jurisdiction of  
incorporation or organization)

54-1692118

(I.R.S. Employer  
Identification No.)

4250 Congress Street, Suite 900  
Charlotte, North Carolina 28209  
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (980) - 299-5700

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
COMMON STOCK, \$.01 Par Value	ALB	New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for at least the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

The aggregate market value of the voting and non-voting common equity stock held by non-affiliates of the registrant was approximately \$7.5 billion based on the last reported sale price of common stock on June 30, 2019, the last business day of the registrant's most recently completed second quarter.

Number of shares of common stock outstanding as of February 18, 2020: 106,206,157

#### **Documents Incorporated by Reference**

Portions of Albemarle Corporation's definitive Proxy Statement for its 2020 Annual Meeting of Shareholders to be filed with the U.S. Securities and Exchange Commission pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended, are incorporated by reference into Part III of this Form 10-K.

**Index to Form 10-K  
Year Ended December 31, 2019**

	<u>Page</u>
<b><u>PART I</u></b>	
<a href="#"><u>Item 1. Business</u></a>	<a href="#"><u>3</u></a>
<a href="#"><u>Item 1A. Risk Factors</u></a>	<a href="#"><u>9</u></a>
<a href="#"><u>Item 1B. Unresolved Staff Comments</u></a>	<a href="#"><u>22</u></a>
<a href="#"><u>Item 2. Properties</u></a>	<a href="#"><u>23</u></a>
<a href="#"><u>Item 3. Legal Proceedings</u></a>	<a href="#"><u>25</u></a>
<a href="#"><u>Item 4. Mine Safety Disclosures</u></a>	<a href="#"><u>25</u></a>
<a href="#"><u>Executive Officers of the Registrant</u></a>	<a href="#"><u>25</u></a>
<b><u>PART II</u></b>	
<a href="#"><u>Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u></a>	<a href="#"><u>27</u></a>
<a href="#"><u>Item 6. Selected Financial Data</u></a>	<a href="#"><u>28</u></a>
<a href="#"><u>Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations</u></a>	<a href="#"><u>28</u></a>
<a href="#"><u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u></a>	<a href="#"><u>49</u></a>
<a href="#"><u>Item 8. Financial Statements and Supplementary Data</u></a>	<a href="#"><u>51</u></a>
<a href="#"><u>Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u></a>	<a href="#"><u>106</u></a>
<a href="#"><u>Item 9A. Controls and Procedures</u></a>	<a href="#"><u>106</u></a>
<a href="#"><u>Item 9B. Other Information</u></a>	<a href="#"><u>106</u></a>
<b><u>PART III</u></b>	
<a href="#"><u>Item 10. Directors, Executive Officers and Corporate Governance</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>Item 11. Executive Compensation</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>Item 13. Certain Relationships and Related Transactions, and Director Independence</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>Item 14. Principal Accountant Fees and Services</u></a>	<a href="#"><u>107</u></a>
<b><u>PART IV</u></b>	
<a href="#"><u>Item 15. Exhibits and Financial Statement Schedules</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>Item 16. Form 10-K Summary</u></a>	<a href="#"><u>113</u></a>
<a href="#"><u>Signatures</u></a>	<a href="#"><u>114</u></a>

## PART I

### Item 1. Business.

Albemarle Corporation was incorporated in Virginia in 1993. Our principal executive offices are located at 4250 Congress Street, Suite 900, Charlotte, North Carolina 28209. Unless the context otherwise indicates, the terms “Albemarle,” “we,” “us,” “our” or “the Company” mean Albemarle Corporation and its consolidated subsidiaries.

We are a leading global developer, manufacturer and marketer of highly-engineered specialty chemicals that are designed to meet our customers’ needs across a diverse range of end markets. We believe our purpose is making the world safe and sustainable by powering the potential of people. The end markets we serve include energy storage, petroleum refining, consumer electronics, construction, automotive, lubricants, pharmaceuticals, crop protection and custom chemistry services. We believe that our commercial and geographic diversity, technical expertise, innovative capability, flexible, low-cost global manufacturing base, experienced management team and strategic focus on our core base technologies will enable us to maintain leading positions in those areas of the specialty chemicals industry in which we operate.

We and our joint ventures currently operate 29 production and research and development (“R&D”) facilities, as well as a number of administrative and sales offices, around the world. As of December 31, 2019, we served approximately 2,400 customers, none of which individually represents more than 10% of net sales of the Company, in approximately 75 countries. For information regarding our unconsolidated joint ventures see Note 10, “Investments,” to our consolidated financial statements included in Part II, Item 8 of this report.

On February 5, 2020, the Company announced that Chairman and Chief Executive Officer Luke Kissam had advised the Board of Directors that he will retire from his roles as an officer and director of Albemarle effective June 2020, for health reasons. The Board of Directors will be conducting a comprehensive search process, which will include internal and external candidates.

### Business Segments

During 2019, we managed and reported our operations under three reportable segments: Lithium, Bromine Specialties and Catalysts. Each segment has a dedicated team of sales, research and development, process engineering, manufacturing and sourcing, and business strategy personnel and has full accountability for improving execution through greater asset efficiency, market focus, agility and responsiveness. Financial results and discussion about our segments included in this Annual Report on Form 10-K are organized according to these categories except where noted.

For financial information regarding our reportable segments and geographic area information, see Note 25, “Segment and Geographic Area Information,” to our consolidated financial statements included in Part II, Item 8 of this report.

### Lithium Segment

Our Lithium business develops lithium-based materials for a wide range of industries and end markets. We are a low-cost producer of one of the most diverse product portfolios of lithium derivatives in the industry.

We develop and manufacture a broad range of basic lithium compounds, including lithium carbonate, lithium hydroxide, lithium chloride, and value-added lithium specialties and reagents, including butyllithium and lithium aluminum hydride. Lithium is a key component in products and processes used in a variety of applications and industries, which include lithium batteries used in consumer electronics and electric vehicles, high performance greases, thermoplastic elastomers for car tires, rubber soles and plastic bottles, catalysts for chemical reactions, organic synthesis processes in the areas of steroid chemistry and vitamins, various life science applications, as well as intermediates in the pharmaceutical industry, among other applications. We also develop and manufacture cesium products for the chemical and pharmaceutical industries, and zirconium, barium and titanium products for various pyrotechnical applications, including airbag initiators.

In addition to developing and supplying lithium compounds, we provide technical services, including the handling and use of reactive lithium products. We also offer our customers recycling services for lithium-containing by-products resulting from synthesis with organolithium products, lithium metal and other reagents. We plan to continue to focus on the development of new products and applications.

### Competition

The global lithium market consists of producers primarily located in the Americas, Asia and Australia. Major competitors in lithium compounds include Sociedad Quimica y Minera de Chile S.A., Sichuan Tianqi Lithium, Jiangxi Ganfeng Lithium and Livent Corporation. In the cesium and other specialty metal business, key competitors include Sinomine and Sigma-Aldrich

Corporation. Competition in the global lithium market is largely based on product quality, product diversity, reliability of supply and customer service.

### **Raw Materials and Significant Supply Contracts**

We obtain lithium through solar evaporation of our ponds at the Salar de Atacama, in Chile, and in Silver Peak, Nevada. After we obtain the lithium brine from the Salar de Atacama, we process it into lithium carbonate and lithium chloride at a plant in nearby La Negra, Chile. The lithium brine from our Silver Peak site is processed into lithium carbonate at our plant in Silver Peak. Subsequently, in other locations in the United States (“U.S.”), Germany, France and Taiwan, we further process the materials into various derivatives, depending on the markets we serve. In addition, we own undeveloped land with access to a lithium resource in Antofalla, within the Catamarca Province of Argentina. If necessary, we can also obtain lithium from other sources.

Our mineral rights with respect to the Salar de Atacama in Chile consist exclusively of our right to access lithium brine, covering an area of approximately 16,700 hectares, pursuant to a long-term contract with the Chilean government, originally entered into in January 1975 by one of our predecessors and subsequently amended and restated. The amended agreement provides us with sufficient lithium to produce over 80,000 metric tons annually of technical and battery-grade lithium salts over the next 24 years at our expanding battery-grade manufacturing facilities in La Negra, Chile. In addition, the amended agreement provides for commission payments to the Chilean government based on sales price/metric ton, our support of research and development in Chile in lithium applications and solar energy, and our support of local communities in Northern Chile.

Our mineral rights in Silver Peak, Nevada consist of our right to access lithium brine pursuant to our permitted and certified senior water rights, a settlement agreement with the U.S. government, originally entered into in June 1991, and our patented and unpatented land claims. Pursuant to the 1991 agreement, our water rights and our land claims, we have rights to all lithium that we can remove economically from the Clayton Valley Basin in Nevada. We have been operating at the Silver Peak site since 1966. Our Silver Peak site covers a surface of over 13,500 acres, 10,826 acres of which we own through a subsidiary. The remaining acres are owned by the U.S. government from whom we lease the land pursuant to unpatented land claims that are renewed annually. Based on our 2019 production levels, we believe that the amount of lithium brine we can economically obtain from our Silver Peak, Nevada site pursuant to our rights could support the current levels of lithium carbonate production for approximately 20 years. Assuming certain operating conditions are satisfied, our annual lithium carbonate production capacity is estimated to be at least 6,000 metric tons at our Silver Peak facility. However, no assurance can be given that the indicated levels of production of lithium carbonate at either Silver Peak or La Negra will be realized.

We also obtain lithium through hard rock mining via our 49% interest in Windfield Holdings Pty. Ltd., which directly owns 100% of the equity of Talison Lithium Pty. Ltd., a company incorporated in Australia (“Talison”). Talison, through its wholly-owned subsidiaries, owns and operates a lithium mine in Greenbushes, Western Australia and mines lithium ore, which is then milled and processed to separate lithium concentrate from the rest of the ore. Talison currently sells the lithium concentrate only to its shareholders. Talison has a leading position in two categories of lithium concentrates: (i) technical-grade lithium concentrates which have low iron content for use in the manufacture of glass, ceramics and heat-proof cookware; and (ii) a high-yielding chemical-grade lithium concentrate, used to produce lithium chemicals which form the basis for the manufacture of lithium-ion batteries for laptop computers, mobile phones, electric bicycles and electric vehicles. Albemarle’s share of the chemical-grade lithium concentrate is processed into battery-grade lithium hydroxide at our Jiangxi and Sichuan, China facilities, and lithium carbonate and lithium hydroxide at our tolling partners in China. Following the completion of a chemical-grade concentrate expansion in 2019, Talison’s annual lithium carbonate equivalent production capacity is approximately 160,000 metric tons, along with annual production capacity for 10,000 metric tons of technical-grade lithium concentrate, of which Albemarle’s production share is 50 percent. However, no assurance can be given that the indicated levels of production of lithium concentrate at Talison will be realized.

On October 31, 2019, we completed the acquisition of a 60% interest in Mineral Resources Limited’s (“MRL”) Wodgina hard rock lithium mine project (“Wodgina Project”) in Western Australia and formed an unincorporated joint venture with MRL, named MARBL Lithium Joint Venture, for the exploration, development, mining, processing and production of lithium and other minerals (other than iron ore and tantalum) from the Wodgina Project and for the operation of the Kemerton lithium hydroxide conversion assets. Based on current market conditions, MARBL Lithium Joint Venture will idle production of spodumene until market demand supports bringing the mine back into production. The Kemerton plant is currently scheduled to be commissioned in stages during the first half of 2021, with an initial lithium hydroxide conversion capacity of 50,000 metric tons.

## **Bromine Specialties Segment**

Our bromine and bromine-based business includes products used in fire safety solutions and other specialty chemicals applications. Our fire safety technology enables the use of plastics in high performance, high heat applications by enhancing the flame resistant properties of these materials. End market products that benefit from our fire safety technology include plastic enclosures for consumer electronics, printed circuit boards, wire and cable products, electrical connectors, textiles and foam insulation. Our bromine-based business also includes specialty chemicals products such as elemental bromine, alkyl bromides, inorganic bromides, brominated powdered activated carbon and a number of bromine fine chemicals. These specialty products are used in chemical synthesis, oil and gas well drilling and completion fluids, mercury control, water purification, beef and poultry processing and various other industrial applications. Other specialty chemicals that we produce include tertiary amines for surfactants, biocides, and disinfectants and sanitizers. A number of customers of our bromine business operate in cyclical industries, including the consumer electronics and oil field industries. As a result, demand from our customers in such industries is also cyclical.

### **Competition**

Our bromine business serves markets in the Americas, Asia, Europe and the Middle East, each of which is highly competitive. Product performance and quality, price and contract terms are the primary factors in determining which qualified supplier is awarded a contract. Research and development, product and process improvements, specialized customer services, the ability to attract and retain skilled personnel and maintenance of a good safety record have also been important factors to compete effectively in the marketplace. Our most significant competitors are Lanxess AG and Israel Chemicals Ltd.

### **Raw Materials and Significant Supply Contracts**

The bromine we use is sourced from two locations: Arkansas and the Dead Sea. Our bromine production operations in Arkansas are supported by an active brine rights leasing program. We estimate that, at current production levels, we will be able to produce bromine in Arkansas for decades. In addition, through our 50% interest in Jordan Bromine Company Limited (“JBC”), a consolidated joint venture with operations in Safi, Jordan, we source bromine from the Dead Sea, which is believed to have indefinite quantities of brine.

## **Catalysts Segment**

Our three main product lines in this segment are (i) Clean Fuels Technologies (“CFT”), which is primarily composed of hydroprocessing catalysts (“HPC”) together with isomerization and akylation catalysts; (ii) fluidized catalytic cracking (“FCC”) catalysts and additives; and (iii) performance catalyst solutions (“PCS”), which is primarily composed of organometallics and curatives.

We offer a wide range of HPC products, which are applied throughout the oil refining industry. Their application enables the upgrading of oil fractions to clean fuels and other usable oil feedstocks and products by removing sulfur, nitrogen and other impurities from the feedstock. In addition, they improve product properties by adding hydrogen and in some cases improve the performance of downstream catalysts and processes. We continuously seek to add more value to refinery operations by offering HPC products that meet our customers’ requirements for profitability and performance in the very demanding refining market.

We provide our customers with customized FCC catalyst systems. FCC catalysts assist in the high yield cracking of refinery petroleum streams into derivative, higher-value products such as transportation fuels and petrochemical feedstocks like propylene. Our FCC additives are used to reduce emissions of sulfur dioxide and nitrogen oxide in FCC units and to increase liquefied petroleum gas olefins yield, such as propylene, and to boost octane in gasoline. Albemarle offers unique refinery catalysts to crack and treat the lightest to the heaviest feedstocks while meeting refinery yield and product needs.

Within our PCS product line, we manufacture organometallic co-catalysts (e.g., aluminum, magnesium and zinc alkyls) used in the manufacture of alpha-olefins (i.e., hexene, octene, decene), polyolefins (polyethylene and polypropylene) and electronics. Our curatives include a range of curing agents used in polyurethanes, epoxies and other engineered resins.

There were more than 600 refineries world-wide in 2019. Over the long-term, we expect to see some smaller refineries shutting down and being replaced by larger scale and more complex refineries, with growth concentrated in the Middle East and Asia. Oil refining has again increased moderately compared to the previous year. We estimate that there are currently approximately 600 FCC units being operated globally, each of which requires a constant supply of FCC catalysts. In addition, we estimate that there are approximately 3,000 HPC units being operated globally, or a capacity of approximately 46 million barrels per day, each of which typically requires replacement HPC catalysts once every one to four years.

### **Competition**

Our Catalysts segment serves the global market including the Americas, Asia, Europe and the Middle East, each of which is highly competitive. Competition in these markets is driven by a variety of factors. Product performance and quality, price and contract terms, product and process improvements, specialized customer services, the ability to attract and retain skilled personnel, and the maintenance of a good safety record are the primary factors to compete effectively in the catalysts marketplace. In addition, through our research and development programs, we strive to differentiate our business by developing value-added products and products based on proprietary technologies.

Our major competitors in the CFT catalysts market include Shell Catalysts & Technologies, Advanced Refining Technologies and Haldor Topsoe. Our major competitors in the FCC catalysts market include W.R. Grace & Co., BASF Corporation and China Petrochemical Corporation (Sinopec). In the PCS market, our major competitors include Nouryon, Lanxess AG and Lonza.

### **Raw Materials and Significant Supply Contracts**

The major raw materials we use in our Catalysts operations include sodium silicate, sodium aluminate, kaolin, aluminum, ethylene, alpha-olefins, isobutylene, toluene and rare earths and metals, such as lanthanum, molybdenum, nickel and cobalt, most of which are readily available from numerous independent suppliers and are purchased or provided under contracts at prices we believe are competitive. The cost of raw materials is generally based on market prices, although we may use contracts with price caps or other tools, as appropriate, to mitigate price volatility.

### **Sales, Marketing and Distribution**

We have an international strategic account program that uses cross-functional teams to serve large global customers. This program emphasizes creative strategies to improve and strengthen strategic customer relationships with emphasis on creating value for customers and promoting post-sale service. Complementing this program are regional Albemarle sales and technical personnel around the world who serve numerous additional customers globally. We also utilize commissioned sales representatives and specialists in specific market areas when necessary or required by law.

### **Research and Development**

We believe that in order to generate revenue growth, maintain our margins and remain competitive, we must continually invest in research and development, product and process improvements and specialized customer services. Our research and development efforts support each of our business segments. The objective of our research and development efforts is to develop innovative chemistries and technologies with applications relevant within targeted key markets through both process and new product development. Through research and development, we continue to seek increased margins by introducing value-added products and proprietary processes and innovative green chemistry technologies. Our green chemistry efforts focus on the development of products in a manner that minimizes waste and the use of raw materials and energy, avoids the use of toxic reagents and solvents and utilizes safe, environmentally friendly manufacturing processes. Green chemistry is encouraged with our researchers through periodic focus group discussions and special rewards and recognition for outstanding new green developments.

### **Intellectual Property**

Our intellectual property, including our patents, licenses and trade names, is an important component of our business. As of December 31, 2019, we owned approximately 2,100 active patents and approximately 550 pending patent applications in key strategic markets worldwide. We also have acquired rights under patents and inventions of others through licenses, and we license certain patents and inventions to third parties.

### **Regulation**

Our business is subject to a broad array of employee health and safety laws and regulations, including those under the Occupational Safety and Health Act ("OSHA"). We also are subject to similar state laws and regulations as well as local laws and regulations for our non-U.S. operations. We devote significant resources and have developed and implemented comprehensive programs to promote the health and safety of our employees and we maintain an active health, safety and environmental program. We finished 2019 with an OSHA occupational injury and illness incident rate of 0.35 for Albemarle employees and nested contractors, compared to 0.58 in 2018.

Our business and our customers are subject to significant requirements under the European Community Regulation for the Registration, Evaluation, Authorization and Restriction of Chemicals ("REACH"). REACH imposes obligations on European Union manufacturers and importers of chemicals and other products into the European Union to compile and file comprehensive reports, including testing data, on each chemical substance, and perform chemical safety assessments.

Additionally, substances of high concern, as defined under REACH, are subject to an authorization process. Authorization may result in restrictions in the use of products by application or even banning the product. REACH regulations impose significant additional responsibilities on chemical producers, importers, downstream users of chemical substances and preparations, and the entire supply chain. Our significant manufacturing presence and sales activities in the European Union require significant compliance costs and may result in increases in the costs of raw materials we purchase and the products we sell. Increases in the costs of our products could result in a decrease in their overall demand; additionally, customers may seek products that are not regulated by REACH, which could also result in a decrease in the demand of certain products subject to the REACH regulations.

The Toxic Substances Control Act (“TSCA”), as amended in June 2016, requires chemicals to be assessed against a risk-based safety standard and calling for the elimination of unreasonable risks identified during risk evaluation. This regulation and other pending initiatives at the U.S. state level, as well as initiatives in Canada, Asia and other regions, will potentially require toxicological testing and risk assessments of a wide variety of chemicals, including chemicals used or produced by us. These assessments may result in heightened concerns about the chemicals involved and additional requirements being placed on the production, handling, labeling or use of the subject chemicals. Such concerns and additional requirements could also increase the cost incurred by our customers to use our chemical products and otherwise limit the use of these products, which could lead to a decrease in demand for these products.

Historically, there has been scrutiny of certain brominated flame retardants by regulatory authorities, legislative bodies and environmental interest groups in various countries. We manufacture a broad range of brominated flame retardant products, which are used in a variety of applications. Concern about the impact of some of our products on human health or the environment may lead to regulation or reaction in our markets independent of regulation.

### **Environmental Regulation**

We are subject to numerous foreign, federal, state and local environmental laws and regulations, including those governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes and the cleanup of contaminated properties. Ongoing compliance with such laws and regulations is an important consideration for us. Key aspects of our operations are subject to these laws and regulations. In addition, we incur substantial capital and operating costs in our efforts to comply with them.

We use and generate hazardous substances and wastes in our operations and may become subject to claims for personal injury and/or property damage relating to the release of such substances into the environment. In addition, some of our current properties are, or have been, used for industrial purposes, which could contain currently unknown contamination that could expose us to governmental requirements or claims relating to environmental remediation, personal injury and/or property damage. Liabilities associated with the investigation and cleanup of hazardous substances, as well as personal injury, property damages or natural resource damages arising from the release of, or exposure to, such hazardous substances, may be imposed in many situations without regard to violations of laws or regulations or other fault, and may also be imposed jointly and severally (so that a responsible party may be held liable for more than its share of the losses involved, or even the entire loss). Such liabilities also may be imposed on many different entities with a relationship to the hazardous substances at issue, including, for example, entities that formerly owned or operated the property affected by the hazardous substances and entities that arranged for the disposal of the hazardous substances at the affected property, as well as entities that currently own or operate such property. We are subject to such laws, including the federal Comprehensive Environmental Response, Compensation and Liability Act, commonly known as CERCLA or Superfund, in the U.S., and similar foreign and state laws. We may have liability as a potentially responsible party (“PRP”) with respect to active off-site locations under CERCLA or state equivalents. We have sought to resolve our liability as a PRP at these sites through indemnification by third parties and settlements, which would provide for payment of our allocable share of remediation costs. Because the cleanup costs are estimates and are subject to revision as more information becomes available about the extent of remediation required, and in some cases we have asserted a defense to any liability, our estimates could change. Moreover, liability under CERCLA and equivalent state statutes may be joint and several, which could require us to pay in excess of our pro rata share of remediation costs. Our understanding of the financial strength of other PRPs has been considered, where appropriate, in estimating our liabilities. Accruals for these matters are included in the environmental reserve. Our management is actively involved in evaluating environmental matters and, based on information currently available to us, we have concluded that our outstanding environmental liabilities for unresolved waste sites currently known to us should not have a material effect on our operations.

See “Safety and Environmental Matters” in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations for further details.



## Climate Change

The growing concerns about climate change and the related increasingly stringent regulations may provide us with new or expanded business opportunities. We provide solutions to companies pursuing alternative fuel products and technologies (such as renewable fuels), emission control technologies (including mercury emissions), alternative transportation vehicles and energy storage technologies and other similar solutions. As demand for, and legislation mandating or incentivizing the use of, alternative fuel technologies that limit or eliminate greenhouse gas emissions increase, we continue to monitor the market and offer solutions where we have appropriate technology and believe we are well positioned to take advantage of opportunities that may arise from such demand or legislation.

## Recent Acquisitions, Joint Ventures and Divestitures

During recent years, we have devoted resources to acquisitions and joint ventures, including the subsequent integration of acquired businesses. These acquisitions and joint ventures have expanded our base business, provided our customers with a wider array of products and presented new alternatives for discovery through additional chemistries. In addition, we have pursued opportunities to divest businesses which do not fit our high priority business growth profile. Following is a summary of our significant acquisitions, joint ventures and divestitures over the last three years.

On October 31, 2019, we completed the acquisition of a 60% interest in MRL's Wodgina Project in Western Australia and formed an unincorporated joint venture with MRL for the exploration, development, mining, processing and production of lithium and other minerals (other than iron ore and tantalum) from the Wodgina Project and for the operation of the Kemerton assets, for a total purchase price of approximately \$1.3 billion, subject to certain adjustments capped at \$22.5 million. As part of this acquisition, MARBL Lithium Operations Pty. Ltd. (the "Manager"), an incorporated joint venture, was formed to manage the Wodgina Project.

On April 3, 2018, we completed the sale of the polyolefin catalysts and components portion of the PCS business ("Polyolefin Catalysts Divestiture") to W.R. Grace & Co. for net cash proceeds of approximately \$413.6 million. The transaction included Albemarle's Product Development Center located in Baton Rouge, Louisiana, and operations at our Yeosu, South Korea site. The sale did not include the organometallics or curatives portion of the PCS business.

These transactions reflect our commitment to investing in future growth of our high priority businesses, maintaining leverage flexibility and returning capital to our shareholders.

## Employees

As of December 31, 2019, we had approximately 6,000 employees, including employees of our consolidated joint ventures, of whom 2,800, or 47%, are employed in the U.S. and Latin America; 1,500, or 25%, are employed in Europe; 1,200, or 20%, are employed in Asia and 500, or 8%, are employed in the Middle East or other areas. Approximately 22% of these employees are represented by unions or works councils. We believe that we generally have a good relationship with our employees, and with those unions and works councils.

## Available Information

Our website address is [www.albemarle.com](http://www.albemarle.com). We make available free of charge through our website our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), as well as beneficial ownership reports on Forms 3, 4 and 5 filed pursuant to Section 16 of the Exchange Act, as soon as reasonably practicable after such documents are electronically filed with, or furnished to, the Securities and Exchange Commission ("SEC"). The information on our website is not, and shall not be deemed to be, a part of this report or incorporated into any other filings we make with the SEC. The SEC also maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy statements and other information regarding SEC registrants, including Albemarle.

Our Corporate Governance Guidelines, Code of Conduct and the charters of the Audit and Finance, Health, Safety and Environment, Executive Compensation, and Nominating and Governance Committees of our Board of Directors are also available on our website and are available in print to any shareholder upon request by writing to Investor Relations, 4250 Congress Street, Suite 900, Charlotte, North Carolina 28209, or by calling (980) 299-5700.

**Item 1A. Risk Factors.**

You should consider carefully the following risks when reading the information, including the financial information, contained in this Annual Report on Form 10-K.

**Risks Related to Our Business**

***Our substantial international operations subject us to risks of doing business in foreign countries, which could adversely affect our business, financial condition and results of operations.***

We conduct a substantial portion of our business outside the U.S., with approximately 76% of our sales to foreign countries. We operate and/or sell our products to customers in approximately 75 countries. We currently have many production facilities, research and development and administrative facilities, as well as sales offices located outside the U.S., as detailed in Item 2. Properties. Accordingly, our business is subject to risks related to the differing legal, political, social and regulatory requirements and economic conditions of many jurisdictions. Risks inherent in international operations include the following:

- fluctuations in foreign currency exchange rates may affect product demand and may adversely affect the profitability in U.S. dollars of products and services we provide in international markets where payment for our products and services is made in the local currency;
- transportation and other shipping costs may increase, or transportation may be inhibited;
- increased cost or decreased availability of raw materials;
- changes in foreign laws and tax rates or U.S. laws and tax rates with respect to foreign income may unexpectedly increase the rate at which our income is taxed, impose new and additional taxes on remittances, repatriation or other payments by subsidiaries, or cause the loss of previously recorded tax benefits;
- foreign countries in which we do business may adopt other restrictions on foreign trade or investment, including currency exchange controls;
- trade sanctions by or against these countries could result in our losing access to customers and suppliers in those countries;
- unexpected adverse changes in foreign laws or regulatory requirements may occur;
- our agreements with counterparties in foreign countries may be difficult for us to enforce and related receivables may be difficult for us to collect;
- compliance with the variety of foreign laws and regulations may be unduly burdensome;
- compliance with anti-bribery and anti-corruption laws (such as the Foreign Corrupt Practices Act) as well as anti-money-laundering laws may be costly;
- unexpected adverse changes in export duties, quotas and tariffs and difficulties in obtaining export licenses may occur;
- general economic conditions in the countries in which we operate could have an adverse effect on our earnings from operations in those countries;
- our foreign operations may experience staffing difficulties and labor disputes;
- termination or substantial modification of international trade agreements may adversely affect our access to raw materials and to markets for our products outside the U.S.;
- foreign governments may nationalize or expropriate private enterprises;
- increased sovereign risk (such as default by or deterioration in the economies and credit worthiness of local governments) may occur; and
- political or economic repercussions from terrorist activities, including the possibility of hyperinflationary conditions and political instability, may occur in certain countries in which we do business.

In addition, certain of our operations, and we have ongoing capital projects, in regions of the world such as the Middle East and South America, that are of high risk due to significant civil, political and security instability. Unanticipated events, such as geopolitical changes, could result in a write-down of our investment in the affected joint venture or a delay or cause cancellation of those capital projects, which could negatively impact our future growth and profitability. Our success as a global business will depend, in part, upon our ability to succeed in differing legal, regulatory, economic, social and political conditions by developing, implementing and maintaining policies and strategies that are effective in each location where we and our joint ventures do business.

Furthermore, we are subject to rules and regulations related to anti-bribery and anti-trust prohibitions of the U.S. and other countries, as well as export controls and economic embargoes, violations of which may carry substantial penalties. For example, export control and economic embargo regulations limit the ability of our subsidiaries to market, sell, distribute or otherwise transfer their products or technology to prohibited countries or persons. Failure to comply with these regulations could subject our subsidiaries to fines, enforcement actions and/or have an adverse effect on our reputation and the value of our common stock.

***Our inability to secure key raw materials, or to pass through increases in costs and expenses for other raw materials and energy, on a timely basis or at all, could have an adverse effect on the margins of our products and our results of operations.***

The long-term profitability of our operations will, in part, depend on our ability to continue to economically obtain resources, including energy and raw materials. For example, our lithium and bromine businesses rely upon our continued ability to produce, or otherwise obtain, lithium and bromine of sufficient quality and in adequate amounts to meet our customers' demand. If we fail to secure and retain the rights to continue to access these key raw materials, we may have to restrict or suspend our operations that rely upon these key resources, which could harm our business, results of operations and financial condition. In addition, in some cases access to these raw materials by us and our competitors is subject to decisions or actions by governmental authorities, which could adversely impact us. Furthermore, other raw material and energy costs account for a significant percentage of our total costs of products sold, even if they can be obtained on commercially reasonable terms. Our raw material and energy costs can be volatile and may increase significantly. Increases are primarily driven by tightening of market conditions and major increases in the pricing of key constituent materials for our products such as crude oil, chlorine and metals (including molybdenum and rare earths which are used in the refinery catalysts business). We generally attempt to pass through changes in the prices of raw materials and energy to our customers, but we may be unable to do so (or may be delayed in doing so). In addition, raising prices we charge to our customers in order to offset increases in the prices we pay for raw materials could cause us to suffer a loss of sales volumes. Our inability to efficiently and effectively pass through price increases, or inventory impacts resulting from price volatility, could adversely affect our margins.

***Competition within our industry may place downward pressure on the prices and margins of our products and may adversely affect our businesses and results of operations.***

We compete against a number of highly competitive global specialty chemical producers. Competition is based on several key criteria, including product performance and quality, product price, product availability and security of supply, and responsiveness of product development in cooperation with customers and customer service. Some of our competitors are larger than we are and may have greater financial resources. These competitors may also be able to maintain significantly greater operating and financial flexibility. As a result, these competitors may be better able to withstand changes in conditions within our industry. Competitors' pricing decisions could compel us to decrease our prices, which could negatively affect our margins and profitability. Our ability to maintain or increase our profitability is, and will continue to be, dependent upon our ability to offset decreases in the prices and margins of our products by improving production efficiency and volume and other productivity enhancements, shifting to production of higher margin chemical products and improving existing products through innovation and research and development. If we are unable to do so or to otherwise maintain our competitive position, we could lose market share to our competitors.

In addition, Albemarle's brands, product image and trademarks represent the unique product identity of each of our products and are important symbols of the Company's reputation. Accordingly, the performance of our business could be adversely affected by any marketing and promotional materials used by our competitors that make adverse claims, whether with or without merit, against our Company or its products, imply or assert immoral or improper conduct by us, or are otherwise disparaging of our Company or its products. Further, our own actions could hurt such brands, product image and trademarks if our products underperform or we otherwise draw negative publicity.

***Our research and development efforts may not succeed in addressing changes in our customers' needs, and our competitors may develop more effective or successful products.***

Our industries and the end markets into which we sell our products experience technological change and product improvement. Manufacturers periodically introduce new products or require new technological capacity to develop customized products. Our future growth depends on our ability to gauge the direction of the commercial and technological progress in all key end markets in which we sell our products and upon our ability to fund and successfully develop, manufacture and market products in such changing end markets. As a result, we must commit substantial resources each year to research and development. There is no assurance that we will be able to continue to identify, develop, market and, in certain cases, secure regulatory approval for, innovative products in a timely manner or at all, as may be required to replace or enhance existing products, and any such inability could have a material adverse effect on our profit margins and our competitive position.

In addition, our customers use our specialty chemicals for a broad range of applications. Changes in our customers' products or processes may enable our customers to reduce consumption of the specialty chemicals that we produce or make our specialty chemicals unnecessary. Customers may also find alternative materials or processes that do not require our products. Should a customer decide to use a different material due to price, performance or other considerations, we may not be able to supply a product that meets the customer's new requirements. Consequently, it is important that we develop new products to replace the sales of products that mature and decline in use. Our business, results of operations, cash flows and margins could be materially adversely affected if we are unable to manage successfully the maturation of our existing products and the introduction of new products.

Despite our efforts, we may not be successful in developing new products and/or technology, either alone or with third parties, or licensing intellectual property rights from third parties on a commercially competitive basis. Our new products may not be accepted by our customers or may fail to receive regulatory approval. Moreover, new products may have lower margins than the products they replace. Furthermore, ongoing investments in research and development for the future do not yield an immediate beneficial impact on our operating results and therefore could result in higher costs without a proportional increase in revenues.

***The development of non-lithium battery technologies could adversely affect us.***

The development and adoption of new battery technologies that rely on inputs other than lithium compounds, could significantly impact our prospects and future revenues. Current and next generation high energy density batteries for use in electric vehicles rely on lithium compounds as a critical input. Alternative materials and technologies are being researched with the goal of making batteries lighter, more efficient, faster charging and less expensive, and some of these could be less reliant on lithium compounds. We cannot predict which new technologies may ultimately prove to be commercially viable and on what time horizon. Commercialized battery technologies that use less lithium could materially and adversely impact our prospects and future revenues.

***Adverse conditions in the economy, and volatility and disruption of financial markets can negatively impact our customers, suppliers and other business partners and therefore have a material adverse effect on our business and results of operations.***

A global, regional or localized economic downturn may reduce customer demand or inhibit our ability to produce our products, negatively impacting our operating results. Our business and operating results have been and will continue to be sensitive to the many challenges that can affect national, regional and global economies, including economic downturns (including credit market tightness, which can impact our liquidity as well as that of our customers, suppliers and other business partners), declining consumer and business confidence, fluctuating commodity prices and volatile exchange rates. Our customers may experience deterioration of their businesses, cash flow shortages and difficulty obtaining financing, leading them to delay or cancel plans to purchase products, and they may not be able to fulfill their obligations in a timely fashion. Further, suppliers and other business partners may experience similar conditions, which could impact their ability to fulfill their obligations to us. Also, it could be difficult to find replacements for business partners without incurring significant delays or cost increases.

***Downturns in our customers' industries could adversely affect our sales and profitability.***

Downturns in the businesses that use our specialty chemicals may adversely affect our sales. Many of our customers are in industries, including the electronics, building and construction, oilfield and automotive industries, which are cyclical in nature, or which are subject to secular market downturns. Historically, cyclical or secular industry downturns have resulted in diminished demand for our products, excess manufacturing capacity and lower average selling prices, and we may experience similar problems in the future. A decline in our customers' industries may have a material adverse effect on our sales and profitability.

***Our results are subject to fluctuation because of irregularities in the demand for our HPC catalysts and certain of our agrichemicals.***

Our HPC catalysts are used by petroleum refiners in their processing units to reduce the quantity of sulfur and other impurities in petroleum products. The effectiveness of HPC catalysts diminishes with use, requiring the HPC catalysts to be replaced, on average, once every one to four years. The sales of our HPC catalysts, therefore, are largely dependent on the useful life cycle of the HPC catalysts in the processing units and may vary materially by quarter. In addition, the timing and profitability of HPC catalysts sales can have a significant impact on revenue and profit in any one quarter. Sales of our agrichemicals are also subject to fluctuation as demand varies depending on climate and other environmental conditions, which may prevent or reduce farming for extended periods. In addition, crop pricing and the timing of when farms alternate from one crop to another crop in a particular year can also alter sales of agrichemicals.

***Regulation, or the threat of regulation, of some of our products could have an adverse effect on our sales and profitability.***

We manufacture or market a number of products that are or have been the subject of attention by regulatory authorities and environmental interest groups. For example, over the past decade, there has been increasing scrutiny of certain brominated flame retardants by regulatory authorities, legislative bodies and environmental interest groups in various countries. We manufacture a broad range of brominated flame retardant products, which are used in a variety of applications to protect people, property and the environment from injury and damage caused by fire. Concern about the impact of some of our products on human health or the environment may lead to regulation, or reaction in our markets independent of regulation, that could reduce or eliminate markets for such products.

Agencies in the European Union (“E.U.”) continue to evaluate the risks to human health and the environment associated with certain brominated flame retardants such as tetrabromobisphenol A and decabromodiphenylethane, both of which we manufacture. Additional government regulations, including limitations or bans on the use of brominated flame retardants, could result in a decline in our net sales of brominated flame retardants and have an adverse effect on our sales and profitability. In addition, the threat of additional regulation or concern about the impact of brominated flame retardants on human health or the environment could lead to a negative reaction in our markets that could reduce or eliminate our markets for these products, which could have an adverse effect on our sales and profitability.

Our business and our customers are subject to significant requirements under REACH, which imposes obligations on E.U. manufacturers and importers of chemicals and other products into the E.U. to compile and file comprehensive reports, including testing data, on each chemical substance, and perform chemical safety assessments. Additionally, substances of high concern, as defined under REACH, are subject to an authorization process, which may result in restrictions in the use of products by application or even banning the product. REACH regulations impose significant additional burdens on chemical producers, importers, downstream users of chemical substances and preparations, and the entire supply chain. See “Regulation” in Item 1. Business. Our significant manufacturing presence and sales activities in the E.U. requires significant compliance costs and may result in increases in the costs of raw materials we purchase and the products we sell. Increases in the costs of our products could result in a decrease in their overall demand; additionally, customers may seek products that are not regulated by REACH, which could also result in a decrease in the demand of certain products subject to the REACH regulations.

The Toxic Substances Control Act (“TSCA”), as amended in June 2016, requires chemicals to be assessed against a risk-based safety standard and calling for the elimination of unreasonable risks identified during risk evaluation. This regulation and other pending initiatives at the U.S. state level, as well as initiatives in Canada, Asia and other regions, could potentially require toxicological testing and risk assessments of a wide variety of chemicals, including chemicals used or produced by us. These assessments may result in heightened concerns about the chemicals involved and additional requirements being placed on the production, handling, labeling or use of the subject chemicals. Such concerns and additional requirements could also increase the cost incurred by our customers to use our chemical products and otherwise limit the use of these products, which could lead to a decrease in demand for these products. Such a decrease in demand could have an adverse impact on our business and results of operations.

***We could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications.***

Our products provide important performance attributes to our customers’ products. If a product fails to perform in a manner consistent with quality specifications or has a shorter useful life than guaranteed, a customer of ours could seek the replacement of the product or damages for costs incurred as a result of the product failing to perform as guaranteed. These risks apply to our refinery catalysts in particular because, in certain instances, we sell our refinery catalysts under agreements that contain limited performance and life cycle guarantees. Also, because many of our products are integrated into our customers’ products, we may be requested to participate in, or fund in whole or in part the costs of, a product recall conducted by a customer. For example, some of our businesses supply products to customers in the automotive industry. In the event one of these customers conducts a product recall that it believes is related to one of our products, we may be asked to participate in, or fund in whole or in part, such a recall.

Our customers often require our subsidiaries to represent that our products conform to certain product specifications provided by our customers. Any failure to comply with such specifications could result in claims or legal action against us.

A successful claim or series of claims against us could have a material adverse effect on our financial condition and results of operations and could result in our loss of one or more customers.

***Our business is subject to hazards common to chemical and natural resource extraction businesses, any of which could injure our employees or other persons, damage our facilities or other properties, interrupt our production and adversely affect our reputation and results of operations.***

Our business is subject to hazards common to chemical manufacturing, storage, handling and transportation, as well as natural resource extraction, including explosions, fires, severe weather, natural disasters, mechanical failure, unscheduled downtime, transportation interruptions, remediation, chemical spills, discharges or releases of toxic or hazardous substances or gases and other risks. These hazards can cause personal injury and loss of life to our employees and other persons, severe damage to, or destruction of, property and equipment and environmental contamination. In addition, the occurrence of disruptions, shutdowns or other material operating problems at our facilities due to any of these hazards may diminish our ability to meet our output goals. Accordingly, these hazards and their consequences could adversely affect our reputation and have a material adverse effect on our operations as a whole, including our results of operations and cash flows, both during and after the period of operational difficulties.

***Our business could be adversely affected by environmental, health and safety laws and regulations.***

The nature of our business, including historical operations at our current and former facilities, exposes us to risks of liability under environmental laws and regulations due to the production, storage, use, transportation and sale of materials that can cause contamination or personal injury if released into the environment. In the jurisdictions in which we operate, we are subject to numerous U.S. and non-U.S. national, federal, state and local environmental, health and safety laws and regulations, including those governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes and the cleanup of contaminated properties. We currently use, and in the past have used, hazardous substances at many of our facilities, and we have in the past been, and may in the future be, subject to claims relating to exposure to hazardous materials. We also have generated, and continue to generate, hazardous wastes at a number of our facilities. Some of our facilities also have lengthy histories of manufacturing or other activities that may have resulted in site contamination. Liabilities associated with the investigation and cleanup of hazardous substances, as well as personal injury, property damages or natural resource damages arising from the release of, or exposure to, such hazardous substances, may be imposed in many situations without regard to violations of laws or regulations or other fault, and may also be imposed jointly and severally (so that a responsible party may be held liable for more than its share of the losses involved, or even the entire loss). Such liabilities may also be imposed on many different entities, including, for example, current and prior property owners or operators, as well as entities that arranged for the disposal of the hazardous substances. Such liabilities may be material and can be difficult to identify or quantify.

Further, some of the raw materials we handle are subject to government regulation. These regulations affect the manufacturing processes, handling, uses and applications of our products. In addition, our production facilities and a number of our distribution centers require numerous operating permits. Due to the nature of these requirements and changes in our operations, our operations may exceed limits under permits or we may not have the proper permits to conduct our operations. Ongoing compliance with such laws, regulations and permits is an important consideration for us and we incur substantial capital and operating costs in our compliance efforts.

Compliance with environmental laws generally increases the costs of manufacturing, registration/approval requirements, transportation and storage of raw materials and finished products, and storage and disposal of wastes, and could have a material adverse effect on our results of operations. We may incur substantial costs, including fines, damages, criminal or civil sanctions and remediation costs, or experience interruptions in our operations, for violations arising under these laws or permit requirements. Additional information may arise in the future concerning the nature or extent of our liability with respect to identified sites, and additional sites may be identified for which we are alleged to be liable, that could cause us to materially increase our environmental accrual or the upper range of the costs we believe we could reasonably incur for such matters. Furthermore, environmental laws are subject to change and have become increasingly stringent in recent years. We expect this trend to continue and to require materially increased capital expenditures and operating and compliance costs.

***We may be subject to indemnity claims and liable for other payments relating to properties or businesses we have divested.***

In connection with the sale of certain properties and businesses, we have agreed to indemnify the purchasers of such properties for certain types of matters, such as certain breaches of representations and warranties, taxes and certain environmental matters. With respect to environmental matters, the discovery of contamination arising from properties that we have divested may expose us to indemnity obligations under the sale agreements with the buyers of such properties or cleanup obligations and other damages under applicable environmental laws. We may not have insurance coverage for such indemnity obligations or cash flows to make such indemnity or other payments. Further, we cannot predict the nature of and the amount of any indemnity or other obligations we may have to the applicable purchaser. Such payments may be costly and may adversely affect our financial condition and results of operations.

At several of our properties where hazardous substances are known to exist (including some sites where hazardous substances are being investigated or remediated), we believe we are entitled to contractual indemnification from one or more former owners or operators; however, in the event we make a claim, the indemnifier may disagree with us regarding, or not have the financial capacity to fulfill, its indemnity obligation. If our contractual indemnity is not upheld or effective, our accrual and/or our costs for the investigation and cleanup of hazardous substances could increase materially.

***We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar foreign anti-corruption laws.***

The U.S. Foreign Corrupt Practices Act (the “FCPA”) and similar foreign anti-corruption laws in other jurisdictions around the world generally prohibit companies and their intermediaries from making improper payments or providing anything of value to non-U.S. government officials for the purpose of obtaining or retaining business or securing an unfair advantage. We operate in some parts of the world that have experienced governmental corruption to some degree, and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. Although we have established formal policies or procedures for prohibiting or monitoring this conduct, we cannot assure you that our employees or other agents will not engage in such conduct for which we might be held responsible. In the event that we believe or have reason to believe that our employees, agents or distributors have or may have violated applicable anti-corruption laws, including the FCPA, we may be required to investigate or have outside counsel investigate the relevant facts and circumstances, which can be expensive and require significant time and attention from senior management. If we are found to be liable for violations of the FCPA or other applicable anti-corruption laws (either due to our own acts or our inadvertence, or due to the acts or inadvertence of others, including employees of our joint ventures), we could suffer from civil and criminal penalties or other sanctions, which could have a material adverse effect on our business and results of operations.

As previously reported in 2018 and 2019, following receipt of information regarding potential improper payments being made by third party sales representatives of our Refining Solutions business, within our Catalysts segment, we promptly retained outside counsel and forensic accountants to investigate potential violations of the Company’s Code of Conduct, the FCPA, and other potentially applicable laws. Based on this internal investigation, we have voluntarily self-reported potential issues relating to the use of third party sales representatives in our Refining Solutions business, within our Catalysts segment, to the U.S. Department of Justice (“DOJ”), the SEC, and Dutch Public Prosecutor (“DPP”), and are cooperating with the DOJ, the SEC, and the DPP in their review of these matters. In connection with our internal investigation, we have implemented, and are continuing to implement, appropriate remedial measures.

At this time, we are unable to predict the duration, scope, result or related costs associated with the investigations by the DOJ, the SEC, or DPP. We also are unable to predict what, if any, action may be taken by the DOJ, the SEC, or DPP, or what penalties or remedial actions they may seek. Any determination that our operations or activities are not in compliance with existing laws or regulations could result in the imposition of fines, penalties, disgorgement, equitable relief, or other losses.

***We are subject to extensive foreign government regulation that can negatively impact our business.***

We are subject to government regulation in non-U.S. jurisdictions in which we conduct our business. The requirements for compliance with these laws and regulations may be unclear or indeterminate and may involve significant costs, including additional capital expenditures or increased operating expenses, or require changes in business practice, in each case that could result in reduced profitability for our business. Our having to comply with these foreign laws or regulations may provide a competitive advantage to competitors who are not subject to comparable restrictions or prevent us from taking advantage of growth opportunities. Determination of noncompliance can result in penalties or sanctions that could also adversely impact our operating results and financial condition.

***Our inability to protect our intellectual property rights could have a material adverse effect on our business, financial condition and results of operations.***

Protection of our proprietary processes, methods and compounds and other technology is important to our business. We generally rely on patent, trade secret, trademark and copyright laws of the U.S. and certain other countries in which our products are produced or sold, as well as licenses and nondisclosure and confidentiality agreements, to protect our intellectual property rights. The patent, trade secret, trademark and copyright laws of some countries, or their enforcement, may not protect our intellectual property rights to the same extent as the laws of the U.S. Failure to protect our intellectual property rights may result in the loss of valuable proprietary technologies. Additionally, some of our technologies are not covered by any patent or patent application and, even if a patent application has been filed, it may not result in an issued patent. If patents are issued to us, those patents may not provide meaningful protection against competitors or against competitive technologies. We cannot assure you that our intellectual property rights will not be challenged, invalidated, circumvented or rendered unenforceable.

We also conduct research and development activities with third parties and license certain intellectual property rights from third parties and we plan to continue to do so in the future. We endeavor to license or otherwise obtain intellectual property rights on terms favorable to us. However, we may not be able to license or otherwise obtain intellectual property rights on such terms or at all. Our inability to license or otherwise obtain such intellectual property rights could have a material adverse effect on our ability to create a competitive advantage and create innovative solutions for our customers, which will adversely affect our net sales and our relationships with our customers.

We could face patent infringement claims from our competitors or others alleging that our processes or products infringe on their proprietary technologies. If we are found to be infringing on the proprietary technology of others, we may be liable for damages and we may be required to change our processes, redesign our products partially or completely, pay to use the technology of others, stop using certain technologies or stop producing the infringing product entirely. Even if we ultimately prevail in an infringement suit, the existence of the suit could prompt customers to switch to products that are not the subject of infringement suits. We may not prevail in intellectual property litigation and such litigation may result in significant legal costs or otherwise impede our ability to produce and distribute key products.

We also rely upon unpatented proprietary manufacturing expertise, continuing technological innovation and other trade secrets to develop and maintain our competitive position. While we generally enter into confidentiality agreements with our employees and third parties to protect our intellectual property, we cannot assure you that our confidentiality agreements will not be breached, that they will provide meaningful protection for our trade secrets and proprietary manufacturing expertise or that adequate remedies will be available in the event of an unauthorized use or disclosure of our trade secrets or manufacturing expertise. In addition, our trade secrets and know-how may be improperly obtained by other means, such as a breach of our information technologies security systems or direct theft.

***Our inability to acquire or develop additional reserves that are economically viable could have a material adverse effect on our future profitability.***

Our lithium reserves will, without more, decline as we continue to extract these raw materials. Accordingly, our future profitability depends upon our ability to acquire additional lithium reserves that are economically viable to replace the reserves we will extract. Exploration and development of lithium resources are highly speculative in nature. Exploration projects involve many risks, require substantial expenditures and may not result in the discovery of sufficient additional resources that can be extracted profitably. Once a site with potential resources is discovered, it may take several years of development until production is possible, during which time the economic viability of production may change. Substantial expenditures are required to establish recoverable proven and probable reserves and to construct extraction and production facilities. As a result, there is no assurance that current or future exploration programs will be successful and there is a risk that depletion of reserves will not be offset by discoveries or acquisitions.

We utilize feasibility studies to estimate the anticipated economic returns of an exploration project. The actual project profitability or economic feasibility may differ from such estimates as a result of factors such as, but not limited to, changes in volumes, grades and characteristics of resources to be mined and processed; changes in labor costs or availability of adequate and skilled labor force; the quality of the data on which engineering assumptions were made; adverse geotechnical conditions; availability, supply and cost of water and power; fluctuations in inflation and currency exchange rates; delays in obtaining environmental or other government permits or approvals or changes in the laws and regulations related to our operations or project development; changes in royalty agreements, laws and/or regulations around royalties and other taxes; and weather or severe climate impacts.

For our existing operations, we utilize geological and metallurgical assumptions, financial projections and price estimates. These estimates are periodically updated to reflect changes in our operations, including modifications to our proven and probable reserves and mineralized material, revisions to environmental obligations, changes in legislation and/or social, political or economic environment, and other significant events associated with natural resource extraction operations. There are numerous uncertainties inherent in estimating quantities and qualities of lithium and costs to extract recoverable reserves, including many factors beyond our control, that could cause results to differ materially from expected financial and operating results or result in future impairment charges.

***There is risk to the growth of lithium markets.***

Our lithium business is significantly dependent on the development and adoption of new applications for lithium power and the growth in demand for plug-in hybrid electric vehicles and battery electric vehicles. To the extent that such development, adoption and growth do not occur in the volume and/or manner that we contemplate, the long-term growth in the markets for



lithium products may be adversely affected, which would have a material adverse effect on our business, financial condition and operating results.

***Demand and market prices for lithium will greatly affect the value of our investment in our lithium resources and our ability to develop it successfully.***

Our ability to successfully develop our lithium resources, including recently acquired 60% interest in MRL's Wodgina Project, and generate a return on investment will be affected by changes in the demand for and market price of lithium-based end products, such as lithium hydroxide. The market price of these products can fluctuate and is affected by numerous factors beyond our control, primarily world supply and demand. Such external economic factors are influenced by changes in international investment patterns, various political developments and macro-economic circumstances. In addition, the price of lithium products is impacted by their purity and performance. We may not be able to effectively mitigate against such fluctuations.

Following the Wodgina acquisition, we announced that, based on current market conditions, the Wodgina mine would idle production of spodumene until market demand supports bringing the mine back into production. There can be no assurance that the market demand for lithium will improve or that the Wodgina mine will be put back into production in the future or at all. Delays in putting the mine into production, as well as continued fluctuations in demand for and pricing of lithium and related products may affect the value of our investment in the Wodgina Project and our value as a whole.

***Our business and operations could suffer in the event of cybersecurity breaches, information technology system failures, or network disruptions.***

Attempts to gain unauthorized access to our information technology systems become more sophisticated over time. These attempts, which might be related to industrial or other espionage, include covertly introducing malware to our computers and networks and impersonating authorized users, among others. We seek to detect and investigate all security incidents and to prevent their recurrence, but in some cases we might be unaware of an incident or its magnitude and effects. The theft, unauthorized use or publication of our intellectual property and/or confidential business information could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives or otherwise adversely affect our business. To the extent that any cybersecurity breach results in inappropriate disclosure of our customers' or licensees' confidential information, we may incur liability as a result. The devotion of additional resources to the security of our information technology systems in the future could significantly increase the cost of doing business or otherwise adversely impact our financial results.

In addition, risks associated with information technology systems failures or network disruptions, including risks associated with upgrading our systems or in successfully integrating information technology and other systems in connection with the integration of businesses we acquire, could disrupt our operations by impeding our processing of transactions, financial reporting and our ability to protect our customer or company information, which could adversely affect our business and results of operations.

***The occurrence or threat of extraordinary events, including domestic and international terrorist attacks, may disrupt our operations and decrease demand for our products.***

Chemical-related assets may be at greater risk of future terrorist attacks than other possible targets in the U.S. and around the world. As a result, we are subject to existing federal rules and regulations (and may be subject to additional legislation or regulations in the future) that impose site security requirements on chemical manufacturing facilities, which increase our overhead expenses.

We are also subject to federal regulations that have heightened security requirements for the transportation of hazardous chemicals in the U.S. We believe we have met these requirements but additional federal and local regulations that limit the distribution of hazardous materials are being considered. We ship and receive materials that are classified as hazardous. Bans on movement of hazardous materials through cities, like Washington, D.C., could affect the efficiency of our logistical operations. Broader restrictions on hazardous material movements could lead to additional investment to produce hazardous raw materials and change where and what products we manufacture.

The Chemical Facility Anti-Terrorism Standards program ("CFATS Program"), which is administered by the Department of Homeland Security ("DHS"), identifies and regulates chemical facilities to ensure that they have security measures in place to reduce the risks associated with potential terrorist attacks on chemical plants located in the U.S. In December 2014, the Protecting and Securing Chemical Facilities from Terrorist Attacks Act of 2014 ("CFATS Act") was enacted. The CFATS Act reauthorized the CFATS Program for four years. On January 18, 2019, the Chemical Facility Anti-Terrorism Standards Program

Extension Act was enacted to extend the CFATS Program for another 15 months. DHS has released an interim final rule under the CFATS Program that imposes comprehensive federal security regulations for high-risk chemical facilities in possession of specified quantities of chemicals of interest. This rule establishes risk-based performance standards for the security of the U.S.'s chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments, which identify facility security vulnerabilities, and to develop and implement Site Security Plans, which include measures that satisfy the identified risk-based performance standards. We cannot determine with certainty the costs associated with any security measures that DHS may require.

The occurrence of extraordinary events, including future terrorist attacks and the outbreak or escalation of hostilities, cannot be predicted, and their occurrence can be expected to continue to negatively affect the economy in general, and the markets for our products in particular. The resulting damage from a direct attack on our assets, or assets used by us, could include loss of life and property damage. In addition, available insurance coverage may not be sufficient to cover all of the damage incurred or, if available, may be prohibitively expensive.

***Natural disasters or other unanticipated catastrophes could impact our results of operations.***

The occurrence of natural disasters, such as hurricanes, floods or earthquakes; pandemics, such as the recent outbreak of the novel coronavirus COVID-19; or other unanticipated catastrophes at any of the locations in which we or our key partners, suppliers and customers do business, could cause interruptions in our operations. Historically, major hurricanes have caused significant disruption to the operations on the U.S. Gulf Coast for many of our customers and our suppliers of certain raw materials, which had an adverse impact on volume and cost for some of our products. Our operations in Chile could be subject to significant rain events and earthquakes, and our operations in Asia could be subject to weather events such as typhoons. A global or regional pandemic or similar outbreak in a region of our, our customers, or our suppliers could disrupt business. If similar or other weather events, natural disasters, or other catastrophe events occur in the future, they could negatively affect the results of operations at our sites in the affected regions as well as have adverse impacts on the global economy.

***Our insurance may not fully cover all potential exposures.***

We maintain property, business interruption, casualty, and other insurance, but such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and coverage limits. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental remediation. In addition, from time to time, various types of insurance for companies in the specialty chemical industry have not been available on commercially acceptable terms or, in some cases, have not been available at all. We are potentially at additional risk if one or more of our insurance carriers fail. Additionally, severe disruptions in the domestic and global financial markets could adversely impact the ratings and survival of some insurers. Future downgrades in the ratings of enough insurers could adversely impact both the availability of appropriate insurance coverage and its cost. In the future, we may not be able to obtain coverage at current levels, if at all, and our premiums may increase significantly on coverage that we maintain.

***We may be exposed to certain regulatory and financial risks related to climate change.***

Growing concerns about climate change may result in the imposition of additional regulations or restrictions to which we may become subject. Climate changes include changes in rainfall and in storm patterns and intensities, water shortages, significantly changing sea levels and increasing atmospheric and water temperatures, among others. For example, there have been concerns regarding the declining water level of the Dead Sea, from which our joint venture, JBC, produces bromine. A number of governments or governmental bodies have introduced or are contemplating regulatory changes in response to climate change, including regulating greenhouse gas emissions. Potentially, additional U.S. federal regulation will be forthcoming with respect to greenhouse gas emissions (including carbon dioxide) and/or "cap and trade" legislation that could impact our operations. In addition, we have operations in the E.U., Brazil, China, Japan, Jordan, Saudi Arabia, Singapore and the United Arab Emirates, which have implemented, or may implement, measures to achieve objectives under the 2015 Paris Climate Agreement, an international agreement linked to the United Nations Framework Convention on Climate Change ("UNFCCC"), which set targets for reducing greenhouse gas emissions.

The outcome of new legislation or regulation in the U.S. and other jurisdictions in which we operate may result in new or additional requirements, additional charges to fund energy efficiency activities, and fees or restrictions on certain activities. While certain climate change initiatives may result in new business opportunities for us in the area of alternative fuel technologies and emissions control, compliance with these initiatives may also result in additional costs to us, including, among other things, increased production costs, additional taxes, reduced emission allowances or additional restrictions on production or operations. Any adopted future climate change regulations could also negatively impact our ability to compete with companies situated in areas not subject to such limitations. Even without such regulation, increased public awareness and adverse publicity about potential impacts on climate change emanating from us or our industry could harm us. We may not be

able to recover the cost of compliance with new or more stringent laws and regulations, which could adversely affect our business and negatively impact our growth. Furthermore, the potential impact of climate change and related regulation on our customers is highly uncertain and there can be no assurance that it will not have an adverse effect on our financial condition and results of operations.

***Economic conditions and regulatory changes relating to the United Kingdom's withdrawal from the European Union could adversely impact our business.***

Following a referendum in 2016, voters in the United Kingdom ("U.K.") approved that country's exit from the E.U., a process often referred to as "Brexit." The U.K. formally left the E.U. on January 31, 2020, and is now in a transition period through December 31, 2020. The future effects of Brexit will depend on any agreements the U.K. makes to retain access to the E.U. or other markets either during a transitional period or more permanently. Given the lack of comparable precedent and the uncertainty around the terms upon which the U.K. will leave the E.U., it is unclear what financial, trade and legal implications Brexit would have and how such withdrawal would affect our Company. We derive a significant portion of our revenues from sales outside the U.S., including 15% from E.U. countries. The consequences of Brexit, together with what may be protracted negotiations around the terms of Brexit (including the possibility of a so-called "Hard Brexit," where no formal agreement is made between the E.U. and U.K. prior to the U.K.'s exit from the E.U.), could introduce significant uncertainties into global financial markets, including volatility in foreign currencies, and adversely impact the markets in which we and our customers operate. Adverse consequences such as deterioration in economic conditions, volatility in currency exchange rates or adverse changes in regulation could have a negative impact on our future operations, operating results and financial condition. All of these potential consequences could be further magnified if additional countries were to exit the E.U.

***If we are unable to retain key personnel or attract new skilled personnel, it could have an adverse effect on our business.***

Our success depends on our ability to attract and retain key personnel, including our management team. In light of the specialized and technical nature of our business, our performance is dependent on the continued service of, and on our ability to attract and retain, qualified management, scientific, technical, marketing and support personnel. Competition for such personnel is intense, and we may be unable to continue to attract or retain such personnel. In addition, because of our reliance on our senior management team, the unanticipated departure of any key member of our management team could have an adverse effect on our business. Our future success depends, in part, on our ability to identify and develop or recruit talent to succeed our senior management and other key positions throughout the organization. If we fail to identify and develop or recruit successors, we are at risk of being harmed by the departures of these key employees. Effective succession planning is also important to our long-term success. Failure to ensure effective transfer of knowledge and smooth transitions involving key employees could hinder our strategic planning and execution.

On February 5, 2020, the Company announced that Chairman and Chief Executive Officer Luke Kissam had advised the Board of Directors that he will retire from his roles as an officer and director of Albemarle effective June 2020, for health reasons. The Board of Directors will be conducting a comprehensive search process, which will include internal and external candidates.

***Some of our employees are unionized, represented by works councils or are employed subject to local laws that are less favorable to employers than the laws of the U.S.***

As of December 31, 2019, we had approximately 6,000 employees, including employees of our consolidated joint ventures. Approximately 22% of these employees are represented by unions or works councils. In addition, a large number of our employees are employed in countries in which employment laws provide greater bargaining or other rights to employees than the laws of the U.S. Such employment rights require us to work collaboratively with the legal representatives of those employees to effect any changes to labor arrangements. For example, most of our employees in Europe are represented by works councils that must approve any changes in conditions of employment, including salaries and benefits and staff changes, and may impede efforts to restructure our workforce. Although we believe that we have a good working relationship with our employees, a strike, work stoppage, slowdown or significant dispute with our employees could result in a significant disruption of our operations or higher labor costs.

***Our joint ventures may not operate according to their business plans if our partners fail to fulfill their obligations, which may adversely affect our results of operations and may force us to dedicate additional resources to these joint ventures.***

We currently participate in a number of joint ventures and may enter into additional joint ventures in the future. The nature of a joint venture requires us to share control with unaffiliated third parties. If our joint venture partners do not fulfill their obligations, the affected joint venture may not be able to operate according to its business plan. In that case, our results of operations may be adversely affected and we may be required to materially change the level of our commitment to the joint

venture. Also, differences in views among joint venture participants may result in delayed decisions or failures to agree on major issues. If these differences cause the joint ventures to deviate from their business plans, our results of operations could be adversely affected.

### **Risks Related to Our Financial Condition**

***Our required capital expenditures can be complex, may experience delays or other difficulties, and the costs may exceed our estimates.***

Our capital expenditures generally consist of expenditures to maintain and improve existing equipment, facilities and properties, and substantial investments in new or expanded equipment, facilities and properties. Execution of these capital expenditures can be complex, and commencement of production requires start-up, commission and certification of product quality by our customers, which may impact the expected output and timing of sales of product from such facilities. Construction of large chemical operations is subject to numerous risks and uncertainties, including, among others, the ability to complete a project on a timely basis and in accordance with the estimated budget for such project and our ability to estimate future demand for our products. In addition, our returns on these capital expenditures may not meet our expectations.

Future capital expenditures may be significantly higher, depending on the investment requirements of each of our business lines, and may also vary substantially if we are required to undertake actions to compete with new technologies in our industry. We may not have the capital necessary to undertake these capital investments. If we are unable to do so, we may not be able to effectively compete in some of our markets.

***We will need a significant amount of cash to service our indebtedness and our ability to generate cash depends on many factors beyond our control.***

Our ability to generate sufficient cash flow from operations or use existing cash balances to make scheduled payments on our debt depends on a range of economic, competitive and business factors, many of which are outside our control. Our business may not generate sufficient cash flow from operations to service our debt obligations. If we are unable to service our debt obligations, we may need to refinance all or a portion of our indebtedness on or before maturity, reduce or delay capital expenditures, sell assets or raise additional equity. We may not be able to refinance any of our indebtedness, sell assets or raise additional equity on commercially reasonable terms or at all, which could cause us to default on our obligations and impair our liquidity. Our inability to generate sufficient cash flow or use existing cash balances to satisfy our debt obligations, or to refinance our obligations on commercially reasonable terms, could have a material adverse effect on our business and financial condition.

***Restrictive covenants in our debt instruments may adversely affect our business.***

Our senior credit facilities and the indentures governing our senior notes contain select restrictive covenants. These covenants provide constraints on our financial flexibility. The failure to comply with these or other covenants governing other indebtedness, including indebtedness incurred in the future, could result in an event of default, which, if not cured or waived, could have a material adverse effect on our business, financial condition and results of operations, including cross-defaults to other debt facilities. See “Financial Condition and Liquidity—Long-Term Debt” in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

***Changes in credit ratings issued by nationally recognized statistical rating organizations could adversely affect our cost of financing, the market price of our securities and our debt service obligations.***

Credit rating agencies rate our debt securities on factors that include our operating results, actions that we take, their view of the general outlook for our industry and their view of the general outlook for the economy. Actions taken by the rating agencies can include maintaining, upgrading or downgrading the current rating or placing us on a watch list for possible future downgrades. Downgrading the credit rating of our debt securities or placing us on a watch list for possible future downgrades would likely increase our cost of future financing, limit our access to the capital markets and have an adverse effect on the market price of our securities.

Borrowings under a portion of our debt facilities bear interest at floating rates, and are subject to adjustment based on the ratings of our senior unsecured long-term debt. The downgrading of any of our ratings or an increase in any of the benchmark interest rates would result in an increase of the interest expense on our variable rate borrowings.

***We are exposed to fluctuations in currency exchange rates, which may adversely affect our operating results and net income.***

We conduct our business and incur costs in the local currency of most of the countries in which we operate. Changes in exchange rates between foreign currencies and the U.S. Dollar will affect the recorded levels of our assets, liabilities, net sales, cost of goods sold and operating margins and could result in exchange losses. The primary currencies to which we have exposure are the E.U. Euro, Japanese Yen, Chinese Renminbi, Australian Dollar and Chilean Peso. Exchange rates between these currencies and the U.S. Dollar in recent years have fluctuated significantly and may do so in the future. With respect to our potential exposure to foreign currency fluctuations and devaluations, for the year ended December 31, 2019, approximately 32% of our net sales were denominated in currencies other than the U.S. Dollar. Significant changes in these foreign currencies relative to the U.S. Dollar could also have an adverse effect on our ability to meet interest and principal payments on any foreign currency-denominated debt outstanding. In addition to currency translation risks, we incur currency transaction risks whenever one of our operating subsidiaries or joint ventures enters into either a purchase or a sales transaction using a different currency from its functional currency. Our operating results and net income may be affected by any volatility in currency exchange rates and our ability to manage effectively our currency transaction and translation risks.

***Changes in, or the interpretation of, tax legislation or rates throughout the world could materially impact our results.***

Our effective tax rate and related tax balance sheet attributes could be impacted by changes in tax legislation throughout the world. Currently, the majority of our net sales are generated from customers located outside the U.S., and a substantial portion of our assets and employees are located outside of the U.S.

We have not accrued income taxes or foreign withholding taxes on undistributed earnings for most non-U.S. subsidiaries, because those earnings are intended to be indefinitely reinvested in the operations of those subsidiaries. Certain tax proposals with respect to such earnings could substantially increase our tax expense, which would substantially reduce our income and have a material adverse effect on our results of operations and cash flows from operating activities.

Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, expirations of tax holidays or rulings, changes in the assessment regarding the realization of the valuation of deferred tax assets, or changes in tax laws and regulations or their interpretation. Recent developments, including the European Commission's investigations on illegal state aid, as well as the Organisation for Economic Co-operation and Development ("OECD") project on Base Erosion and Profit Shifting may result in changes to long-standing tax principles, which could adversely affect our effective tax rates or result in higher cash tax liabilities.

We are subject to the regular examination of our income tax returns by various tax authorities. Examinations in material jurisdictions or changes in laws, rules, regulations or interpretations by local taxing authorities could result in impacts to tax years open under statute or to foreign operating structures currently in place. We regularly assess the likelihood of adverse outcomes resulting from these examinations or changes in laws, rules, regulations or interpretations to determine the adequacy of our provision for taxes. It is possible the outcomes from these examinations will have a material adverse effect on our financial condition and operating results.

***We may be subject to increased tax exposure resulting from Rockwood pre-acquisition periods.***

Under the terms of certain purchase agreements, third party sellers have agreed to substantially indemnify us for tax liabilities pertaining to Rockwood's periods prior to its acquisition by us. These indemnity obligations will continue generally until the applicable statutes of limitations expire. To the extent that such companies fail to indemnify or satisfy their obligations, or if any amount is not covered by the terms of the indemnity, our earnings could be negatively impacted in future periods through increased tax expense.

***Future events may impact our deferred tax asset position and U.S. deferred federal income taxes on undistributed earnings of international affiliates that are considered to be indefinitely reinvested.***

We evaluate our ability to utilize deferred tax assets and our need for valuation allowances based on available evidence. This process involves significant management judgment about assumptions that are subject to change from period to period based on changes in tax laws or variances between future projected operating performance and actual results. We are required to establish a valuation allowance for deferred tax assets if we determine, based on available evidence at the time the determination is made, that it is more likely than not that some portion or all of the deferred tax assets will not be utilized. In making this determination, we evaluate all positive and negative evidence as of the end of each reporting period. Future adjustments (either increases or decreases), to the deferred tax asset valuation allowance are determined based upon changes in the expected realization of the net deferred tax assets. The utilization of our deferred tax assets ultimately depends on the existence of sufficient taxable income in either the carry-back or carry-forward periods under the applicable tax law. Due to

significant estimates used to establish the valuation allowance and the potential for changes in facts and circumstances, it is reasonably possible that we will be required to record adjustments to the valuation allowance in future reporting periods. Changes to the valuation allowance or the amount of deferred tax liabilities could have a materially adverse effect on our business, financial condition and results of operations. Further, should we change our assertion regarding the permanent reinvestment of the undistributed earnings in foreign operations, a deferred tax liability may need to be established.

***Our business and financial results may be adversely affected by various legal and regulatory proceedings.***

We are involved from time to time in legal and regulatory proceedings, which may be material in the future. The outcome of proceedings, lawsuits and claims may differ from our expectations, leading us to change estimates of liabilities and related insurance receivables.

Legal and regulatory proceedings, whether with or without merit, and associated internal investigations, may be time-consuming and expensive to prosecute, defend or conduct, may divert management's attention and other resources, inhibit our ability to sell our products, result in adverse judgments for damages, injunctive relief, penalties and fines, and otherwise negatively affect our business.

***Because a significant portion of our operations is conducted through our subsidiaries and joint ventures, our ability to service our debt may be dependent on our receipt of distributions or other payments from our subsidiaries and joint ventures.***

A significant portion of our operations is conducted through our subsidiaries and joint ventures. As a result, our ability to service our debt may be partially dependent on the earnings of our subsidiaries and joint ventures and the payment of those earnings to us in the form of dividends, loans or advances and through repayment of loans or advances from us. Payments to us by our subsidiaries and joint ventures are contingent upon our subsidiaries' or joint ventures' earnings and other business considerations and may be subject to statutory or contractual restrictions. In addition, there may be significant tax and other legal restrictions on the ability of our non-U.S. subsidiaries or joint ventures to remit money to us.

***Although our pension plans currently meet minimum funding requirements, events could occur that would require us to make significant contributions to the plans and reduce the cash available for our business.***

We have several defined benefit pension plans around the world, including in the U.S., U.K., Germany, Belgium and Japan. We are required to make cash contributions to our pension plans to the extent necessary to comply with minimum funding requirements imposed by the various countries' benefit and tax laws. The amount of any such required contributions will be determined annually based on an actuarial valuation of the plans as performed by the plans' actuaries.

In previous years, we have made voluntary contributions to our U.S. qualified defined benefit pension plans. We anticipate approximately \$10.8 million of required cash contributions during 2020 for our defined benefit pension plans. Additional voluntary pension contributions in and after 2020 may vary depending on factors such as asset returns, interest rates, and legislative changes. The amounts we may elect or be required to contribute to our pension plans in the future may increase significantly. These contributions could be substantial and would reduce the cash available for our business.

Further, an economic downturn or recession or market disruption in the capital and credit markets may adversely impact the value of our pension plan assets, our results of operations, our statement of changes in stockholders' equity and our liquidity. Our funding obligations could change significantly based on the investment performance of the pension plan assets and changes in actuarial assumptions for local statutory funding valuations. Any deterioration of the capital markets or returns available in such markets may negatively impact our pension plan assets and increase our funding obligations for one or more of these plans and negatively impact our liquidity. We cannot predict the impact of this or any further market disruption on our pension funding obligations.

***We may not be able to consummate future acquisitions or integrate acquisitions into our business, which could result in unanticipated expenses and losses.***

We believe that our customers are increasingly looking for strong, long-term relationships with a few key suppliers that help them improve product performance, reduce costs, and support new product development. To satisfy these growing customer requirements, our competitors have been consolidating within product lines through mergers and acquisitions.

As part of our business growth strategy, we have acquired businesses and entered into joint ventures in the past and intend to pursue acquisitions and joint venture opportunities in the future. Our ability to implement this component of our growth strategy will be limited by our ability to identify appropriate acquisition or joint venture candidates and our financial resources, including available cash and borrowing capacity. The expense incurred in consummating acquisitions or entering into joint

ventures, the time it takes to integrate an acquisition or our failure to integrate businesses successfully, could result in unanticipated expenses and losses. Furthermore, we may not be able to realize any of the anticipated benefits from acquisitions or joint ventures.

The process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations. Some of the risks associated with the integration of acquisitions include:

- potential disruption of our ongoing business and distraction of management;
- unforeseen claims and liabilities, including unexpected environmental exposures;
- unforeseen adjustments, charges and write-offs;
- problems enforcing the indemnification obligations of sellers of businesses or joint venture partners for claims and liabilities;
- unexpected losses of customers of, or suppliers to, the acquired business;
- difficulty in conforming the acquired businesses' standards, processes, procedures and controls with our operations;
- in the case of foreign acquisitions, the need to integrate operations across different cultures and languages and to address the particular economic, currency, political and regulatory risks associated with specific countries;
- variability in financial information arising from the implementation of purchase price accounting;
- inability to coordinate new product and process development;
- loss of senior managers and other critical personnel and problems with new labor unions and cultural challenges associated with integrating employees from the acquired company into our organization; and
- challenges arising from the increased scope, geographic diversity and complexity of our operations.

***We may continue to expand our business through acquisitions and we may incur additional indebtedness, including indebtedness related to acquisitions.***

We have historically expanded our business primarily through acquisitions. A part of our business strategy is to continue to grow through acquisitions that complement our existing technologies and accelerate our growth. Our credit facilities have limited financial maintenance covenants. In addition, the indenture and other agreements governing our senior notes do not limit our ability to incur additional indebtedness in connection with acquisitions or otherwise. As a result, we may incur substantial additional indebtedness in connection with acquisitions.

Any such additional indebtedness and the related debt service obligations could have important consequences and risks for us, including:

- reducing flexibility in planning for, or reacting to, changes in our businesses, the competitive environment and the industries in which we operate, and to technological and other changes;
- lowering credit ratings;
- reducing access to capital and increasing borrowing costs generally or for any additional indebtedness to finance future operating and capital expenses and for general corporate purposes;
- reducing funds available for operations, capital expenditures, share repurchases, dividends and other activities; and
- creating competitive disadvantages relative to other companies with lower debt levels.

***If our goodwill, intangible assets or long-lived assets become impaired, we may be required to record a significant charge to earnings.***

Under U.S. Generally Accepted Accounting Principles ("GAAP"), we review our intangible assets and long-lived assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is tested for impairment on October 31 of each year, or more frequently if required. Factors that may be considered a change in circumstances, indicating that the carrying value of our goodwill, intangible assets or long-lived assets may not be recoverable, include, but are not limited to, a decline in our stock price and market capitalization, reduced future cash flow estimates, and slower growth rates in our industry. We may be required to record a significant charge in our financial statements during the period in which any impairment of our goodwill, intangible assets or long-lived assets is determined, negatively impacting our results of operations and financial condition.

**Item 1B. Unresolved Staff Comments.**

NONE

**Item 2. Properties.**

We operate globally, with our principal executive offices located in Charlotte, NC, our corporate office located in Baton Rouge, LA and regional shared services offices located in Budapest, Hungary and Dalian, China. All of these properties are leased. We and our affiliates also operate regional sales and administrative offices in various locations throughout the world, which are generally leased.

We believe that our production facilities, research and development facilities, and sales and administrative offices are generally well maintained, effectively used and are adequate to operate our business. During 2019, the Company's manufacturing plants operated at approximately 80% capacity, in the aggregate.

Set forth below is information regarding our significant production facilities operated by us and our affiliates:

<u>Location</u>	<u>Business Segment</u>	<u>Principal Use</u>	<u>Owned/Leased</u>
Amsterdam, the Netherlands	Catalysts	Production of refinery catalysts, research and product development activities	Owned
Baton Rouge, Louisiana	Bromine Specialties	Research and product development activities, and production of flame retardants	Leased
Bitterfeld, Germany	Catalysts	Refinery catalyst regeneration, rejuvenation, and sulfiding	Owned by Eurecat S.A., a joint venture owned 50% by each of Axens Group and us
Greenbushes, Australia	Lithium	Production of lithium spodumene minerals and lithium concentrate	Owned by Windfield Holdings Pty Ltd, a joint venture in which we own 49%, and Sichuan Tianqi Lithium Industries Inc. which owns the remaining interest
Jubail, Saudi Arabia	Catalysts	Manufacturing and marketing of organometallics	Owned by Saudi Organometallic Chemicals Company LLC, a joint venture owned 50% by each of Saudi Specialty Chemicals Company (a SABIC affiliate) and us
Kings Mountain, North Carolina	Lithium	Production of technical and battery-grade lithium hydroxide, lithium salts and battery-grade lithium metal products	Owned
La Negra, Chile	Lithium	Production of lithium carbonate and lithium chloride	Owned
Langelsheim, Germany	Lithium	Production of butyllithium, lithium chloride, specialty products, lithium hydrides, cesium and special metals	Owned
Louvain-la-Neuve, Belgium	Lithium; Bromine Specialties; Catalysts; All Other	Regional offices and research and customer technical service activities	Owned
La Voulte, France	Catalysts	Refinery catalysts regeneration and treatment, research and development activities	Owned by Eurecat S.A., a joint venture owned 50% by each of Axens Group and us
Magnolia, Arkansas	Bromine Specialties	Production of flame retardants, bromine, inorganic bromides, agricultural intermediates and tertiary amines	Owned
McAlester, Oklahoma	Catalysts	Refinery catalyst regeneration, rejuvenation, pre-reclaim burn off, as well as specialty zeolites and additives marketing activities	Owned by Eurecat S.A., a joint venture owned 50% by each of Axens Group and us
Meishan, China	Lithium	Production of lithium carbonate and lithium hydroxide	Owned



<u>Location</u>	<u>Business Segment</u>	<u>Principal Use</u>	<u>Owned/Leased</u>
Mobile, Alabama	Catalysts	Production of tin stabilizers	Owned by PMC Group, Inc. which operates the plant for Stannica LLC, a joint venture owned 50% by each of PMC Group Inc. and us
New Johnsonville, Tennessee	Lithium	Production of specialty products	Owned
Niihama, Japan	Catalysts	Production of refinery catalysts	Leased by Nippon Ketjen Company Limited, a joint venture owned 50% by each of Sumitomo Metal Mining Company Limited and us
Pasadena, Texas	Catalysts; All Other	Production of aluminum alkyls, orthoalkylated anilines, and other specialty chemicals	Owned
Pasadena, Texas	Catalysts	Production of refinery catalysts, research and development activities	Owned
Pasadena, Texas	Catalysts	Refinery catalysts regeneration services	Owned by Eurecat U.S. Incorporated, a joint venture in which we own a 57.5% interest and a consortium of entities in various proportions owns the remaining interest
Safi, Jordan	Bromine Specialties	Production of bromine and derivatives and flame retardants	Owned and leased by JBC, a joint venture owned 50% by each of Arab Potash Company Limited and us
Salar de Atacama, Chile	Lithium	Production of lithium brine and potash	Owned; however ownership will revert to the Chilean government once we have sold all remaining amounts under our contract with the Chilean government pursuant to which we obtain lithium brine in Chile
Santa Cruz, Brazil	Catalysts	Production of catalysts, research and product development activities	Owned by Fábrica Carioca de Catalisadores S.A, a joint venture owned 50% by each of Petrobras Química S.A. —PETROQUISA and us
Silver Peak, Nevada	Lithium	Production of lithium brine and lithium carbonate	Owned
South Haven, Michigan	All Other	Production of custom fine chemistry products including pharmaceutical actives	Owned
Taichung, Taiwan	Lithium	Production of butyllithium	Owned
Takaishi City, Osaka, Japan	Catalysts	Production of aluminum alkyls	Owned by Nippon Aluminum Alkyls, a joint venture owned 50% by each of Mitsui Chemicals, Inc. and us
Twinsburg, Ohio	Bromine Specialties	Production of bromine-activated carbon	Leased
Tyrone, Pennsylvania	All Other	Production of custom fine chemistry products, agricultural intermediates, performance polymer products and research and development activities	Owned
Wodgina, Australia <sup>(a)</sup>	Lithium	Production of lithium spodumene minerals	Owned 60% via an undivided interest, with MRL, our co-participant in the MARBL joint venture, owning the remaining 40%

<u>Location</u>	<u>Business Segment</u>	<u>Principal Use</u>	<u>Owned/Leased</u>
Xinyu, China	Lithium	Production of lithium carbonate and lithium hydroxide	Owned

(a) Based on current market conditions, the Wodgina mine has idled production of spodumene until market demand supports bringing the mine back into production.

### Item 3. Legal Proceedings.

We are involved in litigation incidental to our business and are a party to a number of legal actions and claims, various governmental proceedings and private civil lawsuits, including, but not limited to, those related to environmental and hazardous material exposure matters, product liability, and breach of contract. Some of the legal proceedings include claims for compensatory as well as punitive damages. While the final outcome of these matters cannot be predicted with certainty, considering, among other things, the legal defenses available and liabilities that have been recorded along with applicable insurance, it is currently the opinion of management that none of these pending items will have a material adverse effect on our financial condition, results of operations or liquidity.

As previously reported in 2018, following receipt of information regarding potential improper payments being made by third party sales representatives of our Refining Solutions business, within our Catalysts segment, we promptly retained outside counsel and forensic accountants to investigate potential violations of the Company's Code of Conduct, the FCPA, and other potentially applicable laws. Based on this internal investigation, we have voluntarily self-reported potential issues relating to the use of third party sales representatives in our Refining Solutions business, within our Catalysts segment, to the DOJ, the SEC, and DPP, and are cooperating with the DOJ, the SEC, and DPP in their review of these matters. In connection with our internal investigation, we have implemented, and are continuing to implement, appropriate remedial measures.

At this time, we are unable to predict the duration, scope, result or related costs associated with the investigations by the DOJ, the SEC, or DPP. We also are unable to predict what, if any, action may be taken by the DOJ, the SEC or DPP, or what penalties or remedial actions they may seek to impose. Any determination that our operations or activities are not in compliance with existing laws or regulations could result in the imposition of fines, penalties, disgorgement, equitable relief, or other losses. We do not believe, however, that any such fines, penalties, disgorgement, equitable relief or other losses would have a material adverse effect on our financial condition or liquidity.

An unexpected adverse resolution of one or more of these items, however, could have a material adverse effect on our financial condition, results of operations or liquidity in that particular period.

### Item 4. Mine Safety Disclosures.

Not applicable.

### Executive Officers of the Registrant.

The names, ages and biographies of our executive officers, as of February 18, 2020, are set forth below. The term of office of each officer is until the meeting of the Board of Directors following the next annual shareholders' meeting (May 5, 2020).

<u>Name</u>	<u>Age</u>	<u>Position</u>
Luther C. Kissam IV	55	Chairman, President and Chief Executive Officer
Karen G. Narwold	60	Executive Vice President, Chief Administrative Officer, Corporate Secretary
Scott A. Tozier	54	Executive Vice President, Chief Financial Officer
John C. Barichivich III	52	Vice President, Corporate Controller, Chief Accounting Officer
Raphael Crawford	44	President, Catalysts Global Business Unit
Netha Johnson	49	President, Bromine Specialties Global Business Unit
DeeAnne Marlow	54	Senior Vice President, Chief Human Resources Officer
Eric Norris	53	President, Lithium Global Business Unit
David Ryan	50	Vice President, Corporate Strategy and Investor Relations

**Luther C. Kissam IV** was elected as Chairman of the Board of Directors in November 2016. Mr. Kissam was first elected to our Board of Directors effective November 2011. He was elected as Chief Executive Officer effective September

2011 and as our President effective March 2010. Previously, Mr. Kissam served as Executive Vice President, Manufacturing, Law and HS&E from May 2009 until March 2010, and as Senior Vice President, Manufacturing and Law and Corporate Secretary from January 2008 until May 2009. Mr. Kissam joined us in October 2003 and served as Vice President, General Counsel and Corporate Secretary from that time until December 2005, when he was promoted to Senior Vice President, General Counsel and Corporate Secretary. Before joining us, Mr. Kissam served as Vice President, General Counsel and Secretary of Merisant Company (manufacturer and marketer of sweetener and consumer food products), having previously served as Associate General Counsel of Monsanto Company (provider of agricultural products and solutions). Mr. Kissam joined the Specialty Products Advisory Committee in April 2018 and has served as an ex-officio member of the DowDuPont Board since that time. Mr. Kissam was appointed to the Board of Directors of DuPont in June 2019. On February 4, 2020, Mr. Kissam advised the Board of Directors that he will retire from his roles as an officer and director of Albemarle effective June 2020, for health reasons.

**Karen G. Narwold** joined us in September of 2010 and currently serves as Executive Vice President, Chief Administrative Officer, General Counsel and Corporate Secretary. Ms. Narwold has over 25 years of legal, management and business experience with global industrial and chemical companies. After five years in private practice, she served as Vice President, General Counsel, Human Resources and Secretary of GrafTech International Ltd., a global graphite and carbon manufacturer and former subsidiary of Union Carbide. She then served as Vice President and Strategic Counsel of Barzel Industries, a North American steel processor and distributor. Ms. Narwold resigned from Barzel in November 2009, after Barzel reached an agreement to sell substantially all of its assets in a planned transaction that was consummated in a sale pursuant to Section 363 of the U.S. Bankruptcy Code. Prior to joining Albemarle, Ms. Narwold 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. Ms. Narwold was appointed as a member of the Board of Directors of Ingevity Corporation on February 20, 2019.

**Scott A. Tozier** was elected as our Executive Vice President and Chief Financial Officer effective January 2011. Mr. Tozier also served as our Chief Accounting Officer from January 2013 until February 2014. Mr. Tozier has over 25 years of diversified international financial management experience. Following four years of assurance services with the international firm Ernst & Young, LLP, Mr. Tozier joined Honeywell International, Inc., where his 16 year career spanned senior financial positions in the U.S., Australia and Europe. His roles of increasing responsibilities included management of financial planning, analysis and reporting, global credit and treasury services and Chief Financial Officer of Honeywell's Transportation Systems, Turbo Technologies and Building Solutions divisions. Most recently, Mr. Tozier served as Vice President of Finance, Operations and Transformation of Honeywell International, Inc. Mr. Tozier has served as a member of the board of directors of Garrett Motion Inc. since October 2018.

**John C. Barichivich III** was elected Vice President, Corporate Controller and Chief Accounting Officer effective November 2019. Mr. Barichivich has worked for the Company for over 12 years holding various staff and leadership positions of increasing responsibility. Most recently, Mr. Barichivich served as Chief Financial Officer Vice President Finance, Purchasing, and S&OP Catalysts GBU since February 2019. Between January 2016 and February 2019, Mr. Barichivich acted as Vice President - Finance, Bromine Specialties global business unit, and he previously served as Vice President of Finance, Catalysts global business unit from September 2012 until December 2015. Mr. Barichivich was also the Director of Finance for the Albemarle shared service centers and he started his career with Albemarle as the Operations Controller for the Polymer Solutions business. Prior to Albemarle, Mr. Barichivich held a number of positions, including Director of Finance at the Home Depot, CFO Sensors SBE at PerkinElmer, and Manager of FP&A at General Electric. Mr. Barichivich began his 27 year career at Georgia Pacific, where he worked as an internal auditor and was a financial analyst supporting the restructuring of the Distribution Division.

**Raphael Crawford** was appointed President, Catalysts Global Business Unit in 2018. Mr. Crawford joined Albemarle in 2012 as Vice President of the Performance Catalysts Solutions unit, and the additional responsibility of Managing Director for Rockwood Lithium GbmH after the Rockwood acquisition. In 2015, Mr. Crawford was appointed President of the Bromine Specialties business unit until being named to his current role. Prior to Albemarle, Mr. 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, Mr. 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. Mr. 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.

**Netha Johnson** joined Albemarle as President, Bromine Global Business Unit in 2018. Mr. Johnson has more than 20 years of diverse leadership experience, both domestically and internationally, including having worked extensively in Singapore, Malaysia, Taiwan, Japan and Germany. Prior to joining Albemarle, Mr. 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, Mr. Johnson served as a U.S. Naval Officer.

**DeeAnne Marlow** joined Albemarle in 2018 as Senior Vice President, 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, Ms. 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, Ms. 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.

**Eric Norris** was appointed President, Lithium Global Business Unit in August 2018. Mr. 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, Mr. 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, Mr. 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, Mr. Norris founded and led an internet-based firm offering formulation and design tools to the chemical industry. Previously, he served in a variety of roles for Rohm and Haas Company including sales, marketing, strategic planning and investor relations.

**David Ryan** was appointed Vice President, Corporate Strategy and Investor Relations in 2018. 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.

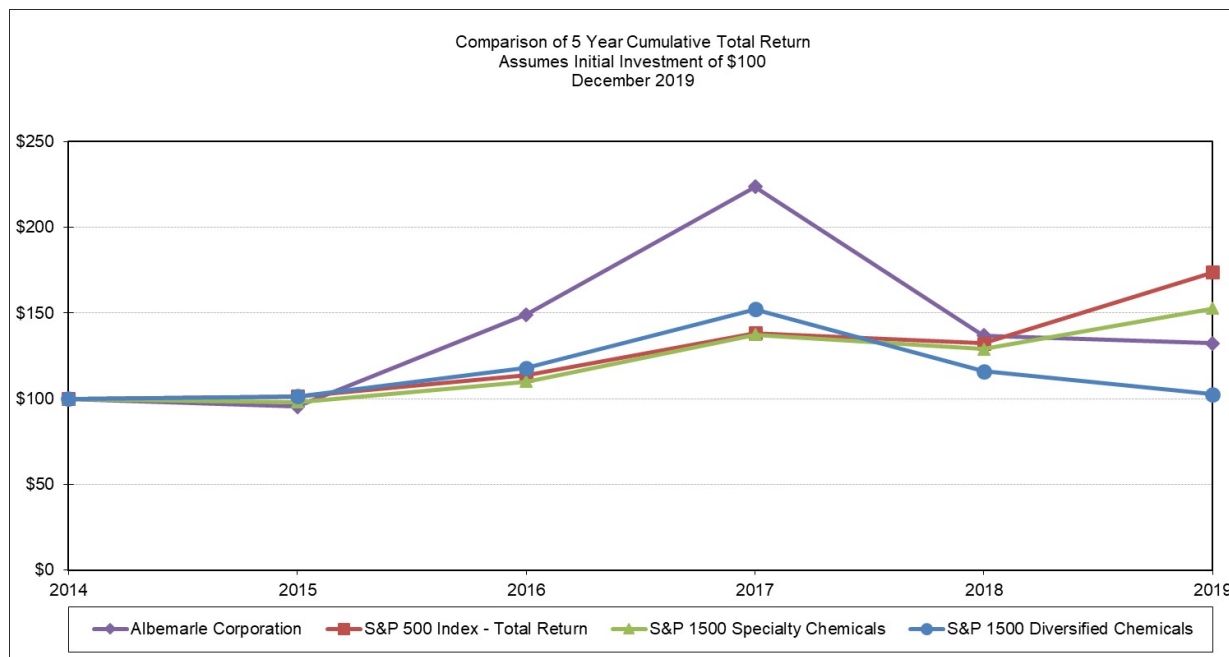
## PART II

### Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock trades on the New York Stock Exchange ("NYSE") under the symbol "ALB." There were 106,206,157 shares of common stock held by 2,349 shareholders of record as of February 18, 2020. We expect to continue to declare and pay dividends to our shareholders in the future, however, dividends are declared solely at the discretion of our Board of Directors and there is no guarantee that the Board of Directors will continue to declare dividends in the future.

#### Stock Performance Graph

The graph below shows the cumulative total shareholder return assuming the investment of \$100 in our common stock on December 31, 2014 and the reinvestment of all dividends thereafter. The information contained in the graph below is furnished and therefore not to be considered "filed" with the SEC, and is not incorporated by reference into any document that incorporates this Annual Report on Form 10-K by reference.



**Item 6. Selected Financial Data.**

The information for the five years ended December 31, 2019, is contained in the “Five-Year Summary” included in Part IV, Item 15, Exhibit 99.1 and incorporated herein by reference.

**Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.**

**Forward-looking Statements**

Some of the information presented in this Annual Report on Form 10-K, including the documents incorporated by reference, may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are based on our current expectations, which are in turn based on assumptions that we believe are reasonable based on our current knowledge of our business and operations. We have used words such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “should,” “would,” “will” and variations of such words and similar expressions to identify such forward-looking statements.

These forward-looking statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control. There can be no assurance that our actual results will not differ materially from the results and expectations expressed or implied in the forward-looking statements. Factors that could cause actual results to differ materially from the outlook expressed or implied in any forward-looking statement include, without limitation, information related to:

- 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;
- hazards associated with chemicals manufacturing;
- the inability to maintain current levels of product or premises liability insurance or the denial of such coverage;
- 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 through 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.

We assume no obligation to provide revisions to any forward-looking statements should circumstances change, except as otherwise required by securities and other applicable laws. The following discussion should be read together with our consolidated financial statements and related notes included in this Annual Report on Form 10-K.

The following is a discussion and analysis of our results of operations for the years ended December 31, 2019, 2018 and 2017. A discussion of our consolidated financial condition and sources of additional capital is included under a separate heading “Financial Condition and Liquidity.”

## Overview

We are a leading global developer, manufacturer and marketer of highly-engineered specialty chemicals that are designed to meet our customers’ needs across a diverse range of end markets. The end markets we serve include energy storage, petroleum refining, consumer electronics, construction, automotive, lubricants, pharmaceuticals, crop protection and custom chemistry services. We believe that our commercial and geographic diversity, technical expertise, innovative capability, flexible, low-cost global manufacturing base, experienced management team and strategic focus on our core base technologies will enable us to maintain leading market positions in those areas of the specialty chemicals industry in which we operate.

Secular trends favorably impacting demand within the end markets that we serve combined with our diverse product portfolio, broad geographic presence and customer-focused solutions will continue to be key drivers of our future earnings growth. We continue to build upon our existing green solutions portfolio and our ongoing mission to provide innovative, yet commercially viable, clean energy products and services to the marketplace to contribute to our sustainable revenue. For example, our Lithium business contributes to the growth of clean miles driven with electric miles and more efficient use of renewable energy through grid storage; Bromine Specialties enables the prevention of fires starting in electronic equipment, greater fuel efficiency from rubber tires and the reduction of emissions from coal fired power plants; and the Catalysts business creates efficiency of natural resources through more usable products from a single barrel of oil, enables safer, greener production of alkylates used to produce more environmentally-friendly fuels, and reduced emissions through cleaner transportation fuels. We believe our disciplined cost reduction efforts and ongoing productivity improvements, among other factors, position us well to take advantage of strengthening economic conditions as they occur, while softening the negative impact of the current challenging global economic environment.

## 2019 Highlights

- In the first quarter, we increased our quarterly dividend for the 25th consecutive year, to \$0.3675 per share. As a result, in February 2020, we were recognized by being named to the S&P 500 Dividend Aristocrats Index.

- On August 14, 2019, the Company entered into a \$1.2 billion unsecured credit facility with several banks and other financial institutions. Borrowings under this facility bear interest at variable rates based on an average London inter-bank offered rate (“LIBOR”), plus an applicable margin that depends on certain credit ratings of the Company. Upon the closing of the credit facility, the applicable margin over LIBOR was 1.125%. In October 2019, we borrowed \$1.0 billion under this credit facility to fund the cash portion of the acquisition of a 60% interest in the Wodgina Project. This balance was repaid in full with proceeds from notes issued in November 2019 (see below for further details).
- On October 31, 2019, we completed the acquisition of a 60% interest in MRL’s Wodgina Project and formed a 60%-40% unincorporated joint venture with MRL to operate the mine and battery-grade lithium hydroxide production facilities. Albemarle paid \$820 million in cash and transferred a 40% interest in certain lithium hydroxide conversion assets being built in Kemerton, Western Australia.
- On November 25, 2019, we closed the offerings on notes totaling \$500.0 million and €1.0 billion. Net proceeds from these offerings were used to repay 1) the \$1.0 billion balance of the credit facility entered into on August 14, 2019, 2) a large portion of approximately \$370 million of commercial paper notes and 3) the remaining balance of \$175.2 million of the senior notes issued in December 2010, and for general corporate purposes.
- In collaboration with ExxonMobil, we created the Galexia™ platform, a transformative hydroprocessing suite of catalyst and service solutions for the refining industry. The platform enables an improved way of doing business, ensuring customer demands are better addressed at every stage throughout the value chain.
- Announced a cost-reduction program expected to deliver a run rate of over \$100 million in sustainable savings by the end of 2021.
- We achieved earnings of \$533.2 million during 2019 as compared to \$693.6 million for 2018. Cash flows from operations in 2019 were \$719.4 million up 32% from 2018. Earnings for 2018 included a \$169.9 million after-tax gain from the Polyolefin Catalysts Divestiture. In addition, earnings for 2019 includes pension and other postretirement benefit (“OPEB”) actuarial losses of \$21.1 million after income taxes, compared to pension and OPEB actuarial losses of \$10.6 million after income taxes in 2018.

## Outlook

The current global business environment presents a diverse set of opportunities and challenges in the markets we serve. In particular, the market for lithium battery and energy storage continues to accelerate, providing the opportunity to continue to develop high quality and innovative products while managing the high cost of expanding capacity. The other markets we serve continue to present various opportunities for value and growth as we have positioned ourselves to manage the impact on our business of changing global conditions, such as slow and uneven global growth, currency exchange volatility, crude oil price fluctuation, a dynamic pricing environment, an ever-changing landscape in electronics, the continuous need for cutting edge catalysts and technology by our refinery customers and increasingly stringent environmental standards. Amidst these dynamics, we believe our business fundamentals are sound and that we are strategically well-positioned as we remain focused on increasing sales volumes, optimizing and improving the value of our portfolio primarily through pricing and product development, managing costs and delivering value to our customers and shareholders. We believe that our businesses remain well-positioned to capitalize on new business opportunities and long-term trends driving growth within our end markets and to respond quickly to changes in economic conditions in these markets.

**Lithium:** We expect results to decline year-over-year during 2020 in Lithium, due mainly to pricing pressure in certain markets, partially offset by productivity enhancements across our business. In addition, there is no new capacity coming online during 2020 to drive significant additional volume. While we completed the acquisition of 60% interest in the Wodgina Project, we have made the decision to idle production of spodumene until demand supports bringing the mine back into production.

On a longer-term basis, we believe that demand for lithium will continue to grow as new lithium applications advance and the use of plug-in hybrid electric vehicles and full battery electric vehicles increases. This demand for lithium is supported by a favorable backdrop of steadily declining lithium ion battery costs, increasing battery performance and favorable global public policy toward e-mobility/renewable energy usage. Our outlook is also bolstered by long-term supply agreements with key strategic customers, reflecting our standing as a preferred global lithium partner, highlighted by our scale, access to geographically diverse, low-cost resources and long-term track record of reliability of supply and operating execution.

**Bromine Specialties:** We expect to see modest growth in net sales in 2020 driven by continued strong demand in flame retardants, drilling completion fluids, and other derivatives. We expect profitability to be flat to slightly down due to lower overall average selling prices as global bromine supply and demand comes into balance in 2020.

On a longer-term basis, we continue to believe that improving global standards of living, widespread digitization, increasing demand for data management capacity and the potential for increasingly stringent fire safety regulations in developing markets are likely to drive continued demand for fire safety products. Absent an increase in regulatory pressure on offshore drilling, we would expect this business to follow a long-term growth trajectory once oil prices recover from prevailing levels as we expect that deep-water drilling will continue to increase around the world. We are focused on profitably growing our globally competitive bromine and derivatives production network to serve all major bromine consuming products and markets. The combination of our solid, long-term business fundamentals, strong cost position, product innovations and effective management of raw material costs will enable us to manage our business through end-market challenges and to capitalize on opportunities that are expected with favorable market trends in select end markets.

**Catalysts:** We expect to see modest sales growth in net sales and flat to modest growth in profitability in 2020, driven by FCC growth, partially offset by lower HPC results. We believe increased global demand for transportation fuels, new refinery start-ups and ongoing adoption of cleaner fuels will be the primary drivers of growth in our Catalysts business. We believe delivering superior end-use performance continues to be the most effective way to create sustainable value in the refinery catalysts industry. We believe our technologies continue to provide significant performance and financial benefits to refiners challenged to meet tighter regulations around the world, including those managing new contaminants present in North America tight oil, and those in the Middle East and Asia seeking to use heavier feedstock while pushing for higher propylene yields. Longer-term, we believe that the global crude supply will get heavier and more sour, a trend that bodes well for our catalysts portfolio. With superior technology and production capacities, and expected growth in end market demand, we believe that Catalysts remains well-positioned for the future. In PCS, we expect growth on a longer-term basis in our organometallic business due to growing global demand for plastics driven by rising standards of living and infrastructure spending. In 2019, we announced that we have begun to pursue opportunities to divest PCS, with the expectation that a divestiture will be completed in 2020.

**All Other:** The fine chemistry services business is reported outside the Company's reportable segments as it does not fit in the Company's core businesses. We expect the near future prospects for the fine chemistry services business to be impacted by a challenging agriculture industry environment and the timing of customer orders in pharmaceuticals. In addition, in 2019, we announced that we have begun to pursue opportunities to divest our fine chemistry services business, with the expectation that a divestiture will be completed in 2020.

**Corporate:** We continue to focus on cash generation, working capital management and process efficiencies. We expect our global effective tax rate for 2020 to be between 18.5% and 19.5%; however, our rate will vary based on the locales in which income is actually earned and remains subject to potential volatility from changing legislation in the U.S., including the Tax Cuts and Jobs Act ("TCJA"), and other tax jurisdictions.

Actuarial gains and losses related to our defined benefit pension and OPEB plan obligations are reflected in Corporate as a component of non-operating pension and OPEB plan costs under mark-to-market accounting. Results for the year ended December 31, 2019 include an actuarial loss of \$29.3 million (\$21.1 million after income taxes), as compared to a loss of \$14.0 million (\$10.6 million after income taxes) for the year ended December 31, 2018.

We remain committed to evaluating the merits of any opportunities that may arise for acquisitions or other business development activities that will complement our business footprint. Additional information regarding our products, markets and financial performance is provided at our web site, [www.albemarle.com](http://www.albemarle.com). Our web site is not a part of this document nor is it incorporated herein by reference.

## Results of Operations

The following data and discussion provides an analysis of certain significant factors affecting our results of operations during the periods included in the accompanying consolidated statements of income.

Discussion of our results of operations for the year ended December 31, 2018 compared to the year ended December 31, 2017 can be found in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2018.



**Comparison of 2019 to 2018****Selected Financial Data****Net Sales**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Net sales	3,589,427	3,374,950	214,477	6%

- \$213.1 million of higher sales volume, driven primarily by Lithium, Bromine Specialties and Fine Chemistry Services, and \$76.5 million of favorable pricing impacts across all businesses
- \$48.1 million of unfavorable currency exchange resulting from a stronger U.S. Dollar against various currencies
- \$27.1 million related to the Polyolefin Catalysts Divestiture

**Gross Profit**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Gross profit	\$ 1,257,778	\$ 1,217,256	\$ 40,522	3%
Gross profit margin	35.0%	36.1%		

- Higher sales volume, driven primarily by Lithium, Bromine Specialties and Fine Chemistry Services, and favorable pricing impacts across all businesses
- Higher input costs in our Lithium segment, resulting from increased toll feedstock, higher tolled volume and investments in operational excellence
- Higher raw material costs, primarily in our Lithium and Bromine Specialties segments
- \$10.7 million related to the Polyolefin Catalysts Divestiture
- Unfavorable currency exchange impacts resulting from the stronger U.S. Dollar against various currencies
- Charges of \$8.8 million related to non-routine labor and compensation related costs in Chile that are outside normal compensation arrangements and \$4.9 million for the write-off of fixed assets in our Jordanian joint venture in 2018

**Selling, General and Administrative Expenses**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Selling, general and administrative expenses	\$ 533,368	\$ 446,090	\$ 87,278	20%
Percentage of Net sales	14.9%	13.2%		

- \$64.8 million of stamp duties levied on assets purchased related to the Wodgina Project in 2019
- Higher professional fees to support planned projects
- \$7.4 million of increased acquisition and integration related costs, driven by the Wodgina Project, and increased severance payments as part of a business reorganization plan
- \$16.2 million of charitable contributions in 2018 beyond the Company's ordinary, recurring charitable contributions

**Research and Development Expenses**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Research and development expenses	\$ 58,287	\$ 70,054	\$ (11,767)	(17)%
Percentage of Net sales	1.6%	2.1%		

- Lower spend in our Lithium and Catalysts segments, including the impact of the Polyolefin Catalysts Divestiture

**Gain on Sale of Business**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Gain on sale of business	\$ —	\$ (210,428)	\$ 210,428	(100)%

- Gain related to the Polyolefin Catalysts Divestiture, which closed in the second quarter of 2018

**Interest and Financing Expenses**

<i>In thousands</i>	<u>2019</u>	<u>2018</u>	<u>\$ Change</u>	<u>% Change</u>
Interest and financing expenses	\$ (57,695)	\$ (52,405)	\$ (5,290)	10%

- Increased debt balance in 2019, primarily related to the funding of the Wodgina Project acquisition
- 2019 included a loss on early extinguishment of debt of \$4.8 million representing the tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of the senior notes issued in 2010
- The increase was partially offset by higher capitalized interest from an increase in capital expenditures in 2019

**Other Expenses, Net**

<i>In thousands</i>	<u>2019</u>	<u>2018</u>	<u>\$ Change</u>	<u>% Change</u>
Other expenses, net	\$ (45,478)	\$ (64,434)	\$ 18,956	(29)%

- \$11.1 million gain related to the sale of land in Pasadena, Texas in 2019
- \$27.0 million of legal expenses in 2018, related to products that Albemarle no longer manufactures and a previously disposed business
- \$15.6 million in 2018 related to environmental charges related to a site formerly owned by Albemarle
- Decrease of \$16.5 million in losses related to adjustments to indemnification liabilities of previously disposed businesses
- Decrease in interest income of \$5.4 million from lower cash balances
- Increase in foreign exchange losses of \$15.3 million
- \$4.4 million decrease from the remeasurement of the fair value of our investment in private equity securities
- \$27.0 million of pension and OPEB costs (including mark-to-market actuarial losses of \$29.3 million) as compared to \$5.3 million of pension and OPEB costs (including mark-to-market actuarial losses of \$14.0 million) in 2018
  - The mark-to-market actuarial loss in 2019 is primarily attributable to a decrease in the weighted-average discount rate to 3.56% from 4.59% for our U.S. pension plans and to 1.33% from 2.15% for our foreign pension plans to reflect market conditions as of the December 31, 2019 measurement date. This was partially offset by a higher return on pension plan assets in 2019 than was expected, as a result of overall market and investment portfolio performance. The weighted-average actual return on our U.S. and foreign pension plan assets was 15.82% versus an expected return of 6.72%.
  - The mark-to-market actuarial loss in 2018 is primarily attributable to a lower return on pension plan assets in 2018 than was expected, as a result of overall market and investment portfolio performance. The weighted-average actual return on our U.S. and foreign pension plan assets was (4.55%) versus an expected return of 6.73%. This was partially offset by an increase in the weighted-average discount rate to 4.59% from 4.03% for our U.S. pension plans and to 2.15% from 1.94% for our foreign pension plans to reflect market conditions as of the December 31, 2018 measurement date.

**Income Tax Expense**

	<u>2019</u>	<u>2018</u>	<u>\$ Change</u>	<u>% Change</u>
Income Tax Expense	\$ 88,161	\$ 144,826	\$ (56,665)	(39)%
Effective income tax rate	15.7 %	18.2 %		

- Change in geographic mix of earnings, mainly attributable to our share of income of our JBC joint venture, a Free Zones company under the laws of the Hashemite Kingdom of Jordan and tax discretions
- The discrete net tax benefits in 2019 of \$15.0 million related to uncertain tax positions, primarily from seeking treaty relief from the competent authority to prevent double taxation

**Equity in Net Income of Unconsolidated Investments**

<i>In thousands</i>	<u>2019</u>	<u>2018</u>	<u>\$ Change</u>	<u>% Change</u>
Equity in net income of unconsolidated investments	\$ 129,568	\$ 89,264	\$ 40,304	45%

- Higher equity income reported by our Lithium segment joint venture, Windfield Holdings Pty. Ltd. and certain Catalyst segment joint ventures
- \$17.3 million charge representing our 49% share of a tax settlement between our Windfield Holdings joint venture and an Australian taxing authority, offset in Income tax expense
- Approximately \$2.0 million of foreign currency losses

**Net Income Attributable to Noncontrolling Interests**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Net income attributable to noncontrolling interests	\$ (71,129)	\$ (45,577)	\$ (25,552)	56%

- Increase in consolidated income related to our JBC joint venture resulting from the full year impact of the Tetrabrom expansion completed in second quarter 2018.

**Net Income Attributable to Albemarle Corporation**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Net income attributable to Albemarle Corporation	\$ 533,228	\$ 693,562	\$ (160,334)	(23)%
Percentage of Net Sales	14.9%	20.6%		
Basic earnings per share	\$ 5.03	\$ 6.40	\$ (1.37)	(21)%
Diluted earnings per share	\$ 5.02	\$ 6.34	\$ (1.32)	(21)%

- Decrease primarily due to gain related to the Polyolefin Catalysts Divestiture in 2018 and increased charges resulting from the acquisition of a 60% interest in the Wodgina Project during 2019, as well as other items noted above.

**Other Comprehensive Loss, Net of Tax**

<i>In thousands</i>	<b>2019</b>	<b>2018</b>	<b>\$ Change</b>	<b>% Change</b>
Other comprehensive loss, net of tax	\$ (45,520)	\$ (125,195)	\$ 79,675	(64)%
• Foreign currency translation	\$ (62,031)	\$ (150,258)	\$ 88,227	(59)%
• 2019 included unfavorable movements in the Euro of approximately \$52 million, the Chinese Renminbi of approximately \$6 million, the Brazilian Real of approximately \$4 million and a net unfavorable variance in various other currencies totaling approximately less than \$1 million				
• 2018 included unfavorable movements in the Euro of approximately \$114 million, the Chinese Renminbi of approximately \$14 million, the Brazilian Real of approximately \$12 million, the Korean Won of approximately \$5 million and a net unfavorable variance in various other currencies totaling approximately \$5 million				
• Net investment hedge	\$ 8,441	\$ 25,786	\$ (17,345)	(67)%

**Segment Information Overview.** We have identified three reportable segments according to the nature and economic characteristics of our products as well as the manner in which the information is used internally by the Company's chief operating decision maker to evaluate performance and make resource allocation decisions. Our reportable business segments consist of: (1) Lithium, (2) Bromine Specialties and (3) Catalysts.

Summarized financial information concerning our reportable segments is shown in the following tables. The "All Other" category includes only the fine chemistry services business, that does not fit into any of our core businesses.

The Corporate category is not considered to be a segment and includes corporate-related items not allocated to the operating segments. Pension and OPEB service cost (which represents the benefits earned by active employees during the period) and amortization of prior service cost or benefit are allocated to the reportable segments, All Other, and Corporate, whereas the remaining components of pension and OPEB benefits cost or credit ("Non-operating pension and OPEB items") are included in Corporate. Segment data includes intersegment transfers of raw materials at cost and allocations for certain corporate costs.

The Company's chief operating decision maker uses adjusted EBITDA (as defined below) to assess the ongoing performance of the Company's business segments and to allocate resources. The Company defines adjusted EBITDA as earnings before interest, taxes, depreciation and amortization, as adjusted on a consistent basis for certain non-recurring or unusual items in a balanced manner and on a segment basis. These non-recurring or unusual items may include acquisition and integration related costs, gains or losses on sales of businesses, restructuring charges, facility divestiture charges, non-operating pension and OPEB items and other significant non-recurring items. In addition, management uses adjusted EBITDA for business planning purposes and as a significant component in the calculation of performance-based compensation for management and other employees. The Company has reported adjusted EBITDA because management believes it provides transparency to investors and enables period-to-period comparability of financial performance. Adjusted EBITDA is a financial

measure that is not required by, or presented in accordance with, U.S. GAAP. Adjusted EBITDA should not be considered as an alternative to Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with U.S. GAAP, or any other financial measure reported in accordance with U.S. GAAP.

	Year Ended December 31,				Percentage Change
	2019	%	2018	%	2019 vs. 2018
(In thousands, except percentages)					
<b>Net sales:</b>					
Lithium	\$ 1,358,170	37.8 %	\$ 1,228,171	36.4 %	11 %
Bromine Specialties	1,004,216	28.0 %	917,880	27.2 %	9 %
Catalysts	1,061,817	29.6 %	1,101,554	32.6 %	(4)%
All Other	165,224	4.6 %	127,186	3.8 %	30 %
Corporate	—	— %	159	— %	(100)%
Total net sales	<u>\$ 3,589,427</u>	<u>100.0 %</u>	<u>\$ 3,374,950</u>	<u>100.0 %</u>	<u>6 %</u>
<b>Adjusted EBITDA:</b>					
Lithium	\$ 524,934	50.6 %	\$ 530,773	52.7 %	(1)%
Bromine Specialties	328,457	31.7 %	288,116	28.6 %	14 %
Catalysts	270,624	26.1 %	284,307	28.3 %	(5)%
All Other	49,628	4.8 %	14,091	1.4 %	252 %
Corporate	(136,862)	(13.2)%	(110,623)	(11.0)%	24 %
Total adjusted EBITDA	<u>\$ 1,036,781</u>	<u>100.0 %</u>	<u>\$ 1,006,664</u>	<u>100.0 %</u>	<u>3 %</u>

See below for a reconciliation of adjusted EBITDA, the non-GAAP financial measure, from Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with U.S. GAAP, (in thousands):

	Lithium	Bromine Specialties	Catalysts	Reportable Segments Total	All Other	Corporate	Consolidated Total
<b>2019</b>							
Net income (loss) attributable to Albemarle Corporation	\$ 341,767	\$ 279,945	\$ 219,686	\$ 841,398	\$ 41,188	\$ (349,358)	\$ 533,228
Depreciation and amortization	99,424	47,611	50,144	197,179	8,440	7,865	213,484
Restructuring and other <sup>(a)</sup>	—	—	—	—	—	5,877	5,877
Acquisition and integration related costs <sup>(b)</sup>	—	—	—	—	—	20,684	20,684
Gain on sale of property <sup>(c)</sup>	—	—	—	—	—	(14,411)	(14,411)
Interest and financing expenses <sup>(d)</sup>	—	—	—	—	—	57,695	57,695
Income tax expense	—	—	—	—	—	88,161	88,161
Non-operating pension and OPEB items	—	—	—	—	—	26,970	26,970
Stamp duty <sup>(e)</sup>	64,766	—	—	64,766	—	—	64,766
Windfield tax settlement <sup>(f)</sup>	17,292	—	—	17,292	—	—	17,292
Other <sup>(g)</sup>	1,685	901	794	3,380	—	19,655	23,035
Adjusted EBITDA	<u>\$ 524,934</u>	<u>\$ 328,457</u>	<u>\$ 270,624</u>	<u>\$ 1,124,015</u>	<u>\$ 49,628</u>	<u>\$ (136,862)</u>	<u>\$ 1,036,781</u>
<b>2018</b>							
Net income (loss) attributable to Albemarle Corporation	\$ 428,212	\$ 246,509	\$ 445,604	\$ 1,120,325	\$ 6,018	\$ (432,781)	\$ 693,562
Depreciation and amortization	95,193	41,607	49,131	185,931	8,073	6,694	200,698
Restructuring and other <sup>(a)</sup>	—	—	—	—	—	3,838	3,838
Gain on sale of business <sup>(h)</sup>	—	—	(210,428)	(210,428)	—	—	(210,428)
Acquisition and integration related costs <sup>(b)</sup>	—	—	—	—	—	19,377	19,377
Interest and financing expenses	—	—	—	—	—	52,405	52,405
Income tax expense	—	—	—	—	—	144,826	144,826
Non-operating pension and OPEB items	—	—	—	—	—	5,285	5,285
Legal accrual <sup>(i)</sup>	—	—	—	—	—	27,027	27,027
Environmental accrual <sup>(j)</sup>	—	—	—	—	—	15,597	15,597
Albemarle Foundation contribution <sup>(k)</sup>	—	—	—	—	—	15,000	15,000
Indemnification adjustments <sup>(l)</sup>	—	—	—	—	—	25,240	25,240
Other <sup>(m)</sup>	7,368	—	—	7,368	—	6,869	14,237
Adjusted EBITDA	<u>\$ 530,773</u>	<u>\$ 288,116</u>	<u>\$ 284,307</u>	<u>\$ 1,103,196</u>	<u>\$ 14,091</u>	<u>\$ (110,623)</u>	<u>\$ 1,006,664</u>

- (a) Severance payments as part of a business reorganization plan, \$5.9 million recorded in Selling, general and administrative expenses for the year ended December 31, 2019 and \$0.1 million and \$3.7 million recorded in Cost of goods sold and Selling, general and administrative expenses for the year ended December 31, 2018.
- (b) Included amounts for the years ended December 31, 2019 and 2018 recorded in (1) Cost of goods sold of \$1.0 million and \$3.7 million, respectively; and (2) Selling, general and administrative expenses of \$19.7 million and \$15.7 million, respectively, relating to various significant projects, including the acquisition of the 60% interest Wodgina Project.
- (c) Gain of \$3.3 million recorded in Selling, general and administrative expenses related to the release of liabilities as part of the sale of a property and \$11.1 million gain recorded in Other expenses, net related to the sale of land in Pasadena, Texas not used as part of our operations.
- (d) Included in Interest and financing expenses is a loss on early extinguishment of debt of \$4.8 million. See Note 14, "Long-Term Debt," to our consolidated financial statements included in Part II, Item 8 of this report for additional information.
- (e) See "Selling, general and administrative expenses" on page 32 for a description of these costs.
- (f) Represents our 49% share of a tax settlement between our Windfield joint venture and an Australian taxing authority, recorded in Equity in net income of unconsolidated investments (net of tax).
- (g) Included amounts for the year ended December 31, 2019 recorded in:
- Cost of goods sold - \$0.7 million related to non-routine labor and compensation related costs in Chile that are outside normal compensation arrangements.

- Selling, general and administrative expenses - \$1.8 million of shortfall contributions for our multiemployer plan financial improvement plan, \$0.9 million of a write off of uncollectable accounts receivable from a terminated distributor in the Bromine Specialties segment, \$1.0 million related to the settlement of terminated agreements, primarily in the Catalysts segment, and \$0.8 million related to the settlement of an ongoing audit in the Lithium segment.
  - Other expenses, net - \$3.1 million of unrecoverable vendor costs outside the operations of the business related to the construction of the future Kemerton production facility, \$9.8 million of a net loss primarily resulting from the adjustment of indemnifications and other liabilities related to previously disposed businesses or purchase accounting, \$3.6 million of asset retirement obligation charges related to the update of an estimate at a site formerly owned by Albemarle, and \$1.2 million of non-operating pension costs from our 50% interest in JBC.
- (h) See “Gain on Sale of Business” on page 32 for a description of this gain.
- (i) Included in Other expenses, net is a \$16.2 million expense resulting from a jury rendered verdict against Albemarle related to certain business concluded under a 2014 sales agreement for products that Albemarle no longer manufactures and a \$10.8 million expense resulting from a settlement of a legal matter related to guarantees from a previously disposed business.
- (j) Increase in environmental reserve to indemnify the buyer of a formerly owned site recorded in Other expenses, net. As defined in the agreement of sale, this indemnification has a set cutoff date in 2024, at which point we will no longer be required to provide financial coverage.
- (k) Included in Selling, general and administrative expenses is a charitable contribution, using a portion of the proceeds received from the Polyolefin Catalysts Divestiture, to the Albemarle Foundation, a non-profit organization that sponsors grants, health and social projects, educational initiatives, disaster relief, matching gift programs, scholarships and other charitable initiatives in locations where our employees live and operate. This contribution is in addition to the ordinary annual contribution made to the Albemarle Foundation by the Company, and is significant in size and nature in that it is intended to provide more long-term benefits in the communities where we live and operate.
- (l) Included in Other expenses, net is \$19.7 million related to the proposed settlement of an ongoing audit of a previously disposed business in Germany, and \$5.5 million related to the adjustment of indemnifications previously recorded from disposed businesses.
- (m) Included amounts for the year ended December 31, 2018 recorded in:
- Cost of goods sold - \$4.9 million for the write-off of fixed assets related to a major capacity expansion in our Jordanian joint venture and \$8.8 million related to non-routine labor and compensation related costs in Chile that are outside normal compensation arrangements.
  - Selling, general and administrative expenses - \$2.3 million of shortfall contributions for our multiemployer plan financial improvement plan and a \$1.2 million contribution, using a portion of the proceeds received from the Polyolefin Catalysts Divestiture, to schools in the state of Louisiana for qualified tuition purposes. This contribution is significant in size and is intended to provide long-term benefits for families in the Louisiana community. This was partially offset by a \$1.5 million gain related to a refund from Chilean authorities due to an overpayment made in a prior year.
  - Other expenses, net - \$1.5 million gain related to the reversal of previously recorded liabilities of disposed businesses.

## Lithium

<i>In thousands</i>	2019	2018	\$ Change	% Change
Net sales	\$ 1,358,170	\$ 1,228,171	\$ 129,999	11 %
<ul style="list-style-type: none"> <li>• \$151.6 million in higher sales volume, primarily in battery-grade lithium hydroxide due to continued strong demand</li> <li>• Pricing was effectively flat due to favorable price/mix in battery-grade hydroxide, offset by the impact of lower prices in China on battery-grade and technical- grade sales</li> <li>• \$22.5 million of unfavorable currency translation resulting from the stronger U.S. Dollar against various currencies</li> </ul>				
Adjusted EBITDA	\$ 524,934	\$ 530,773	\$ (5,839)	(1)%
<ul style="list-style-type: none"> <li>• Increased cost of goods sold, mainly related to higher tolled product volumes to meet customer commitments</li> <li>• Higher sales volume, primarily in battery-grade lithium hydroxide</li> <li>• \$8.7 million of favorable currency translation resulting from a weaker Chilean Peso</li> </ul>				

## Bromine Specialties

<i>In thousands</i>	2019	2018	\$ Change	% Change
Net sales	\$ 1,004,216	\$ 917,880	\$ 86,336	9%
<ul style="list-style-type: none"> <li>• \$46.7 million in higher sales volume and \$48.5 million in favorable pricing impacts in flame retardants and other bromine derivatives due to continued strong demand</li> <li>• \$8.8 million of unfavorable currency translation resulting from the stronger U.S. Dollar against various currencies</li> </ul>				
Adjusted EBITDA	\$ 328,457	\$ 288,116	\$ 40,341	14%
<ul style="list-style-type: none"> <li>• Higher sales volume and favorable pricing impacts</li> <li>• Higher production and raw material costs</li> <li>• \$5.8 million of unfavorable currency translation</li> </ul>				

**Catalysts**

<i>In thousands</i>	2019	2018	\$ Change	% Change
Net sales	\$ 1,061,817	\$ 1,101,554	\$ (39,737)	(4)%
<ul style="list-style-type: none"> <li>\$27.1 million impact of the Polyolefin Catalysts Divestiture</li> <li>\$16.9 million of unfavorable currency translation resulting from the stronger U.S. Dollar against various currencies</li> <li>\$21.4 million of lower sales volume, primarily related to delays in the start-up of new FCC units and the loss of certain customers in PCS, partially offset by sales volume increases in CFT</li> <li>\$25.4 million of favorable pricing impacts, primarily in FCC and CFT</li> </ul>				
Adjusted EBITDA	\$ 270,624	\$ 284,307	\$ (13,683)	(5)%
<ul style="list-style-type: none"> <li>\$10.9 million impact of the Polyolefin Catalysts Divestiture</li> <li>Higher raw material costs in our CFT division, as well as lower sales volume in FCC and PCS</li> <li>\$10.9 million of unfavorable currency translation resulting from the stronger U.S. Dollar against various currencies</li> <li>Favorable pricing impacts</li> <li>Partial insurance claim reimbursement of \$4.2 million received in 2018</li> </ul>				

**All Other**

<i>In thousands</i>	2019	2018	\$ Change	% Change
Net sales	\$ 165,224	\$ 127,186	\$ 38,038	30%
<ul style="list-style-type: none"> <li>Higher sales volume and favorable pricing impacts in our fine chemistry services business</li> </ul>				
Adjusted EBITDA	\$ 49,628	\$ 14,091	\$ 35,537	252%
<ul style="list-style-type: none"> <li>Higher sales volume and favorable pricing impacts in our fine chemistry services business</li> <li>\$4.4 million decrease from the remeasurement of the fair value of our investment in private equity securities</li> </ul>				

**Corporate**

<i>In thousands</i>	2019	2018	\$ Change	% Change
Adjusted EBITDA	\$ (136,862)	\$ (110,623)	\$ (26,239)	24%
<ul style="list-style-type: none"> <li>Higher selling, general and administrative spending related to professional fees to support planned projects</li> <li>\$18.9 million of unfavorable currency exchange impacts</li> </ul>				

**Summary of Critical Accounting Policies and Estimates****Estimates, Assumptions and Reclassifications**

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. Listed below are the estimates and assumptions that we consider to be critical in the preparation of our financial statements.

**Property, Plant and Equipment.** We assign the useful lives of our property, plant and equipment based upon our internal engineering estimates which are reviewed periodically. The estimated useful lives of our property, plant and equipment range from two to sixty years and depreciation is recorded on the straight-line method, with the exception of our mineral rights and reserves, which are depleted on a units-of-production method. We evaluate the recovery of our property, plant and equipment by comparing the net carrying value of the asset group to the undiscounted net cash flows expected to be generated from the use and eventual disposition of that asset group when events or changes in circumstances indicate that its carrying amount may not be recoverable. If the carrying amount of the asset group is not recoverable, the fair value of the asset group is measured and if the carrying amount exceeds the fair value, an impairment loss is recognized.

**Acquisition Method of Accounting.** We recognize the identifiable assets acquired, the liabilities assumed and any noncontrolling interest in the acquiree at their estimated fair values on the date of acquisition for acquired businesses. Determining the fair value of these items requires management's judgment and the utilization of independent valuation specialists and involves the use of significant estimates and assumptions with respect to the timing and amounts of future cash flows and discount rates, among other items. When acquiring mineral reserves, the fair value is estimated using an excess earnings approach, which requires management to estimate future cash flows, net of capital investments in the specific operation. Management's cash flow projections involved the use of significant estimates and assumptions with respect to the expected production of the mine over the estimated time period, sales prices, shipment volumes, and expected profit margins.

The present value of the projected net cash flows represents the preliminary fair value assigned to mineral reserves. The discount rate is a significant assumption used in the valuation model. The judgments made in the determination of the estimated fair value assigned to the assets acquired, the liabilities assumed and any noncontrolling interest in the investee, as well as the estimated useful life of each asset and the duration of each liability, can materially impact the financial statements in periods after acquisition, such as through depreciation and amortization expense. For more information on our acquisitions and application of the acquisition method, see Note 2, "Acquisitions," to our consolidated financial statements included in Part II, Item 8 of this report.

*Income Taxes.* We assume the deductibility of certain costs in our income tax filings, and we estimate the future recovery of deferred tax assets, uncertain tax positions and indefinite investment assertions.

*Environmental Remediation Liabilities.* We estimate and accrue the costs required to remediate a specific site depending on site-specific facts and circumstances. Cost estimates to remediate each specific site are developed by assessing (i) the scope of our contribution to the environmental matter, (ii) the scope of the anticipated remediation and monitoring plan and (iii) the extent of other parties' share of responsibility.

Actual results could differ materially from the estimates and assumptions that we use in the preparation of our financial statements.

### **Revenue Recognition**

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services, and is recognized when performance obligations are satisfied under the terms of contracts with our customers. A performance obligation is deemed to be satisfied when control of the product or service is transferred to our customer. The transaction price of a contract, or the amount we expect to receive upon satisfaction of all performance obligations, is determined by reference to the contract's terms and includes adjustments, if applicable, for any variable consideration, such as customer rebates, noncash consideration or consideration payable to the customer, although these adjustments are generally not material. Where a contract contains more than one distinct performance obligation, the transaction price is allocated to each performance obligation based on the standalone selling price of each performance obligation, although these situations do not occur frequently and are generally not built into our contracts. Any unsatisfied performance obligations are not material. Standalone selling prices are based on prices we charge to our customers, which in some cases is based on established market prices. Sales and other similar taxes collected from customers on behalf of third parties are excluded from revenue. Our payment terms are generally between 30 to 90 days, however, they vary by market factors, such as customer size, creditworthiness, geography and competitive environment.

All of our revenue is derived from contracts with customers, and almost all of our contracts with customers contain one performance obligation for the transfer of goods where such performance obligation is satisfied at a point in time. Control of a product is deemed to be transferred to the customer upon shipment or delivery. Significant portions of our sales are sold free on board shipping point or on an equivalent basis, while delivery terms of other transactions are based upon specific contractual arrangements. Our standard terms of delivery are generally included in our contracts of sale, order confirmation documents and invoices, while the timing between shipment and delivery generally ranges between 1 and 45 days. Costs for shipping and handling activities, whether performed before or after the customer obtains control of the goods, are accounted for as fulfillment costs.

The Company currently utilizes the following practical expedients, as permitted by Accounting Standards Codification ("ASC") 606, *Revenue from Contracts with Customers*:

- All sales and other pass-through taxes are excluded from contract value;
- In utilizing the modified retrospective transition method, no adjustment was necessary for contracts that did not cross over the reporting year;
- We will not consider the possibility of a contract having a significant financing component (which would effectively attribute a portion of the sales price to interest income) unless, if at contract inception, the expected payment terms (from time of delivery or other relevant criterion) are more than one year;
- If our right to customer payment is directly related to the value of our completed performance, we recognize revenue consistent with the invoicing right; and
- We expense as incurred all costs of obtaining a contract incremental to any costs/compensation attributable to individual product sales/shipments for contracts where the amortization period for such costs would otherwise be one year or less.



Certain products we produce are made to our customer's specifications where such products have no alternative use or would need significant rework costs in order to be sold to another customer. In management's judgment, control of these arrangements is transferred to the customer at a point in time (upon shipment or delivery) and not over the time they are produced. Therefore revenue is recognized upon shipment or delivery of these products.

Costs incurred to obtain contracts with customers are not significant and are expensed immediately as the amortization period would be one year or less. When the Company incurs pre-production or other fulfillment costs in connection with an existing or specific anticipated contract and such costs are recoverable through margin or explicitly reimbursable, such costs are capitalized and amortized to Cost of goods sold on a systematic basis that is consistent with the pattern of transfer to the customer of the goods or services to which the asset relates, which is less than one year. We record bad debt expense in specific situations when we determine the customer is unable to meet its financial obligation.

#### ***Goodwill and Other Intangible Assets***

We account for goodwill and other intangibles acquired in a business combination in conformity with current accounting guidance which requires goodwill and indefinite-lived intangible assets to not be amortized.

We test goodwill for impairment by comparing the estimated fair value of our reporting units to the related carrying value. Our reporting units are either our operating business segments or one level below our operating business segments for which discrete financial information is available and for which operating results are regularly reviewed by the business management. We estimate the fair value based on present value techniques involving future cash flows. Future cash flows include assumptions about sales volumes, selling prices, raw material prices, labor and other employee benefit costs, capital additions, income taxes, working capital, and other economic or market-related factors. Significant management judgment is involved in estimating these variables, and they include inherent uncertainties since they are forecasting future events. We perform a sensitivity analysis by using a range of inputs to confirm the reasonableness of these estimates being used in the goodwill impairment analysis. We use a Weighted Average Cost of Capital ("WACC") approach to determine our discount rate for goodwill recoverability testing. Our WACC calculation incorporates industry-weighted average returns on debt and equity from a market perspective. The factors in this calculation are largely external to the Company and, therefore, are beyond our control. We test our recorded goodwill for impairment in the fourth quarter of each year or upon the occurrence of events or changes in circumstances that would more likely than not reduce the fair value of our reporting units below their carrying amounts. The Company performed its annual goodwill impairment test as of October 31, 2019 and concluded there was no impairment as of that date. In addition, no material indications of impairment in any of our reporting units were indicated by the sensitivity analysis.

We assess our indefinite-lived intangible assets, which include trade names and trademarks, for impairment annually and between annual tests if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. The indefinite-lived intangible asset impairment standard allows us to first assess qualitative factors to determine if a quantitative impairment test is necessary. Further testing is only required if we determine, based on the qualitative assessment, that it is more likely than not that the indefinite-lived intangible asset's fair value is less than its carrying amount. If we determine based on the qualitative assessment that it is more likely than not that the asset is impaired, an impairment test is performed by comparing the fair value of the indefinite-lived intangible asset to its carrying amount.

Definite-lived intangible assets, such as purchased technology, patents and customer lists, are amortized over their estimated useful lives generally for periods ranging from five to twenty-five years. Except for customer lists and relationships associated with the majority of our Lithium business, which are amortized using the pattern of economic benefit method, definite-lived intangible assets are amortized using the straight-line method. We evaluate the recovery of our definite-lived intangible assets by comparing the net carrying value of the asset group to the undiscounted net cash flows expected to be generated from the use and eventual disposition of that asset group when events or changes in circumstances indicate that its carrying amount may not be recoverable. If the carrying amount of the asset group is not recoverable, the fair value of the asset group is measured and if the carrying amount exceeds the fair value, an impairment loss is recognized. See Note 12, "Goodwill and Other Intangibles," to our consolidated financial statements included in Part II, Item 8 of this report.

#### ***Resource Development Expenses***

We incur costs in resource exploration, evaluation and development during the different phases of our resource development projects. Exploration costs incurred before obtaining legal rights to explore an area are generally expensed as incurred. After obtaining legal rights, exploration costs are expensed in areas where we have uncertainty about obtaining proven resources. In areas where we have substantial knowledge about the area and consider it probable to obtain commercially viable proven resources, exploration and evaluation costs are capitalized.

If technical feasibility studies have been obtained, resource evaluation expenses are capitalized when the study demonstrates proven or probable resources for which future economic returns are expected, while costs for projects that are not considered viable are expensed. Development costs that are necessary to bring the property to commercial production or increase the capacity or useful life are capitalized. Costs to maintain the production capacity in a property under production are expensed as incurred.

Capitalized resource costs are depleted using the units-of-production method. Our resource development assets are evaluated for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable.

### **Pension Plans and Other Postretirement Benefits**

Under authoritative accounting standards, assumptions are made regarding the valuation of benefit obligations and the performance of plan assets. As required, we recognize a balance sheet asset or liability for each of our pension and OPEB plans equal to the plan's funded status as of the measurement date. The primary assumptions are as follows:

- **Discount Rate**—The discount rate is used in calculating the present value of benefits, which is based on projections of benefit payments to be made in the future.
- **Expected Return on Plan Assets**—We project the future return on plan assets based on prior performance and future expectations for the types of investments held by the plans as well as the expected long-term allocation of plan assets for these investments. These projected returns reduce the net benefit costs recorded currently.
- **Rate of Compensation Increase**—For salary-related plans, we project employees' annual pay increases, which are used to project employees' pension benefits at retirement.
- **Mortality Assumptions**—Assumptions about life expectancy of plan participants are used in the measurement of related plan obligations.

Actuarial gains and losses are recognized annually in our consolidated statements of income in the fourth quarter and whenever a plan is determined to qualify for a remeasurement during a fiscal year. The remaining components of pension and OPEB plan expense, primarily service cost, interest cost and expected return on assets, are recorded on a monthly basis. The market-related value of assets equals the actual market value as of the date of measurement.

During 2019, we made changes to assumptions related to discount rates and expected rates of return on plan assets. We consider available information that we deem relevant when selecting each of these assumptions.

Our U.S. defined benefit plans for non-represented employees are closed to new participants, with no additional benefits accruing under these plans as participants' accrued benefits have been frozen. In selecting the discount rates for the U.S. plans, we consider expected benefit payments on a plan-by-plan basis. As a result, the Company uses different discount rates for each plan depending on the demographics of participants and the expected timing of benefit payments. For 2019, the discount rates were calculated using the results from a bond matching technique developed by Milliman, which matched the future estimated annual benefit payments of each respective plan against a portfolio of bonds of high quality to determine the discount rate. We believe our selected discount rates are determined using preferred methodology under authoritative accounting guidance and accurately reflect market conditions as of the December 31, 2019 measurement date.

In selecting the discount rates for the foreign plans, we look at long-term yields on AA-rated corporate bonds when available. Our actuaries have developed yield curves based on the yields of constituent bonds in the various indices as well as on other market indicators such as swap rates, particularly at the longer durations. For the Eurozone, we apply the Aon Hewitt yield curve to projected cash flows from the relevant plans to derive the discount rate. For the U.K., the discount rate is determined by applying the Aon Hewitt yield curve for typical schemes of similar duration to projected cash flows of Albemarle's U.K. plan. In other countries where there is not a sufficiently deep market of high-quality corporate bonds, we set the discount rate by referencing the yield on government bonds of an appropriate duration.

At December 31, 2019, the weighted-average discount rate for the U.S. and foreign pension plans decreased to 3.56% and 1.33%, respectively, from 4.59% and 2.15%, respectively, at December 31, 2018 to reflect market conditions as of the December 31, 2019 measurement date. The discount rate for the OPEB plans at December 31, 2019 and 2018 was 3.53% and 4.55%, respectively.

In estimating the expected return on plan assets, we consider past performance and future expectations for the types of investments held by the plan as well as the expected long-term allocations of plan assets to these investments. For the years 2019 and 2018, the weighted-average expected rate of return on U.S. pension plan assets was 6.89%, and the weighted-average expected rate of return on foreign pension plan assets was 5.51% and 5.52%, respectively. Effective January 1, 2020, the weighted-average expected rate of return on U.S. and foreign pension plan assets is 6.88% and 4.07%, respectively.

In projecting the rate of compensation increase, we consider past experience in light of movements in inflation rates. At December 31, 2019 and 2018, the assumed weighted-average rate of compensation increase was 3.72% and 3.63%, respectively, for our foreign pension plans.

In October 2018, the Society of Actuaries (“SOA”) published an updated Mortality Improvement Scale, MP-2018. The updated Improvement Scale incorporates an additional year of mortality data (2016). We utilized the same base mortality, SOA RP-2014 Adjusted to 2006 Total Dataset Mortality, but we revised our mortality assumption to incorporate the MP-2018 Mortality Improvement Scale for purposes of measuring our U.S. pension and OPEB obligations at December 31, 2018. In October 2019, the SOA published the Pri-2012 Mortality Tables and an updated Improvement Scale, MP-2019. The Pri-2012 Mortality Tables are an update to the RP-2014 Adjusted to 2006 Total Dataset Mortality while the updated improvement scale incorporates an additional year of mortality data (2017). We revised both the base mortality tables and mortality improvement assumption by incorporating both the Pri-2012 Mortality Tables and MP-2019 Mortality Improvement Scale for purpose of measuring our U.S. pension and OPEB obligations at December 31, 2019.

At December 31, 2019, the assumed rate of increase in the pre-65 and post-65 per capita cost of covered health care benefits for U.S. retirees was zero as the employer-paid premium caps (pre-65 and post-65) were met starting January 1, 2013.

A variance in the assumptions discussed above would have an impact on the projected benefit obligations, the accrued OPEB liabilities, and the annual net periodic pension and OPEB cost. The following table reflects the sensitivities associated with a hypothetical change in certain assumptions, primarily in the U.S. (in thousands):

	(Favorable) Unfavorable			
	1% Increase		1% Decrease	
	Increase (Decrease) in Benefit Obligation	Increase (Decrease) in Benefit Cost	Increase (Decrease) in Benefit Obligation	Increase (Decrease) in Benefit Cost
<b>Actuarial Assumptions</b>				
<b>Discount Rate:</b>				
Pension	\$ (103,167)	\$ 4,733	\$ 125,286	\$ (6,286)
Other postretirement benefits	\$ (5,070)	\$ 289	\$ 6,058	\$ (363)
<b>Expected return on plan assets:</b>				
Pension	*	\$ (6,183)	*	\$ 6,183
Other postretirement benefits	*	\$ —	*	\$ —

\* Not applicable.

Of the \$638.1 million total pension and postretirement assets at December 31, 2019, \$73.8 million, or approximately 12%, are measured using the net asset value as a practical expedient. Gains or losses attributable to these assets are recognized in the consolidated balance sheets as either an increase or decrease in plan assets. See Note 15, “Pension Plans and Other Postretirement Benefits,” to our consolidated financial statements included in Part II, Item 8 of this report.

### Income Taxes

We use the liability method for determining our income taxes, under which current and deferred tax liabilities and assets are recorded in accordance with enacted tax laws and rates. Under this method, the amounts of deferred tax liabilities and assets at the end of each period are determined using the tax rate expected to be in effect when taxes are actually paid or recovered. Future tax benefits are recognized to the extent that realization of such benefits is more likely than not. In order to record deferred tax assets and liabilities, we are following guidance under ASU 2015-17, which requires deferred tax assets and liabilities to be classified as noncurrent on the balance sheet, along with any related valuation allowance. Tax effects are released from Accumulated Other Comprehensive Income using either the specific identification approach or the portfolio approach based on the nature of the underlying item.

Deferred income taxes are provided for the estimated income tax effect of temporary differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities. Deferred tax assets are also provided for operating losses, capital losses and certain tax credit carryovers. A valuation allowance, reducing deferred tax assets, is established when it is more likely than not that some portion or all of the deferred tax assets will not be realized. The realization of such deferred tax assets is dependent upon the generation of sufficient future taxable income of the appropriate character. Although realization is not assured, we do not establish a valuation allowance when we believe it is more likely than not that a net deferred tax asset will be realized.

We only recognize a tax benefit after concluding that it is more likely than not that the benefit will be sustained upon audit by the respective taxing authority based solely on the technical merits of the associated tax position. Once the recognition threshold is met, we recognize a tax benefit measured as the largest amount of the tax benefit that, in our judgment, is greater than 50% likely to be realized. Interest and penalties related to income tax liabilities are included in Income tax expense on the consolidated statements of income.

We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Due to the statute of limitations, we are no longer subject to U.S. federal income tax audits by the Internal Revenue Service (“IRS”) for years prior to 2011. Due to the statute of limitations, we also are no longer subject to U.S. state income tax audits prior to 2011.

With respect to jurisdictions outside the U.S., several audits are in process. We have audits ongoing for the years 2011 through 2018 related to Germany, Italy, India, Belgium, and Chile, some of which are for entities that have since been divested.

While we believe we have adequately provided for all tax positions, amounts asserted by taxing authorities could be greater than our accrued position. Accordingly, additional provisions on federal and foreign tax-related matters could be recorded in the future as revised estimates are made or the underlying matters are settled or otherwise resolved.

Since the timing of resolutions and/or closure of tax audits are uncertain, it is difficult to predict with certainty the range of reasonably possible significant increases or decreases in the liability related to uncertain tax positions that may occur within the next twelve months. Our current view is that it is reasonably possible that we could record a decrease in the liability related to uncertain tax positions, relating to a number of issues, up to approximately \$9.6 million as a result of closure of tax statutes. As a result of the sale of the Chemetall Surface Treatment business in 2016, we agreed to indemnify certain income and non-income tax liabilities, including uncertain tax positions, associated with the entities sold. The associated liability is recorded in Other noncurrent liabilities. See Note 16, “Other Noncurrent Liabilities,” and Note 21, “Income Taxes,” for further details.

We have designated the undistributed earnings of a portion of our foreign operations as indefinitely reinvested and as a result we do not provide for deferred income taxes on the unremitted earnings of these subsidiaries. Our foreign earnings are computed under U.S. federal tax earnings and profits (“E&P”) principles. In general, to the extent our financial reporting book basis over tax basis of a foreign subsidiary exceeds these E&P amounts, deferred taxes have not been provided, as they are essentially permanent in duration. The determination of the amount of such unrecognized deferred tax liability is not practicable. We provide for deferred income taxes on our undistributed earnings of foreign operations that are not deemed to be indefinitely invested. We will continue to evaluate our permanent investment assertion taking into consideration all relevant and current tax laws.

On December 22, 2017, the TCJA was signed into law in the U.S. The TCJA contains several key tax provisions including, among other things, the reduction of the corporate income tax rate from 35% to 21% effective January 1, 2018, the requirement of companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, and the creation of new taxes on certain foreign sourced earnings such as global intangible low-taxed income (“GILTI”). A company can elect an accounting policy to account for GILTI as a period charge in the future period the tax arises or as part of deferred taxes related to the investment or subsidiary. The Company has elected to account for GILTI as a period cost.

## **Financial Condition and Liquidity**

### **Overview**

The principal uses of cash in our business generally have been capital investments and resource development costs, funding working capital and service of debt. We also make contributions to our defined benefit pension plans, pay dividends to our shareholders and repurchase shares of our common stock. Historically, cash to fund the needs of our business has been principally provided by cash from operations, debt financing and equity issuances.

We are continually focused on working capital efficiency particularly in the areas of accounts receivable and inventory. We anticipate that cash on hand, cash provided by operating activities, proceeds from divestitures and borrowings will be sufficient to pay our operating expenses, satisfy debt service obligations, fund capital expenditures and other investing activities, fund pension contributions and pay dividends for the foreseeable future.

### **Cash Flow**

Our cash and cash equivalents were \$613.1 million at December 31, 2019 as compared to \$555.3 million at December 31, 2018. Cash provided by operating activities was \$719.4 million, \$546.2 million and \$304.0 million during the years ended December 31, 2019, 2018 and 2017, respectively.

The increase in cash provided by operating activities in 2019 versus 2018 was primarily due to lower working capital outflow, including a reduction in inventory build-up in Lithium and Catalysts. In addition, we received increased dividends from unconsolidated investments and recorded higher cash earnings, particularly in Bromine Specialties. This was partially offset by timing on payables and higher cash taxes paid. The increase in cash provided by operating activities in 2018 versus 2017 was primarily due to higher income tax payments in 2017, including approximately \$257 million of income taxes from the gain on sale of the Chemetall Surface Treatment business. In addition, 2018 benefited from increased earnings in each of our reportable segments, increased dividends received from unconsolidated investments and lower interest payments. This was partially offset by increased receivables from higher net sales during 2018 and the build-up of inventory in our Lithium and Catalysts segments due to higher forecasted sales.

During 2019, cash on hand, cash provided by operations and proceeds from borrowings of \$1.60 billion funded \$851.8 million of capital expenditures for plant, machinery and equipment, dividends to shareholders of \$152.2 million, the repayment of \$175.2 million of senior notes, and pension and postretirement contributions of \$16.5 million. During 2018, cash on hand, cash provided by operations and \$413.6 million of net proceeds from divestitures funded \$114.7 million of commercial paper repayments, net of borrowings, \$500.0 million of accelerated share repurchase programs, \$700.0 million of capital expenditures for plant, machinery and equipment, and mining resource development, dividends to shareholders of \$144.6 million, and pension and postretirement contributions of \$15.2 million. During 2017, cash on hand, cash provided by operations and net borrowings of \$138.8 million funded \$778.2 million of debt repayments, \$317.7 million of capital expenditures for plant, machinery and equipment, a \$250.0 million accelerated share repurchase program, dividends to shareholders of \$140.6 million, and pension and postretirement contributions of \$13.3 million. In addition, during the years ended December 31, 2019, 2018 and 2017, our consolidated joint venture, JBC, paid dividends of approximately \$224.9 million, \$40.0 million and \$102.5 million, respectively, which resulted in dividends to noncontrolling interests of \$83.2 million, \$14.8 million and \$36.8 million, respectively.

On October 31, 2019, we completed the acquisition of a 60% interest in the Wodgina Project for a total purchase price of \$1.3 billion. The purchase price is comprised of \$820 million in cash, subject to certain adjustments capped at \$22.5 million, and the transfer of 40% interest in certain lithium hydroxide conversion assets being built by Albemarle in Kemerton, Western Australia, valued at approximately \$480 million. The cash consideration was funded by the unsecured credit facility entered into on August 14, 2019.

In November 2019, we issued notes totaling \$500.0 million and €1.0 billion. The net proceeds from the issuance of these notes were used to repay the \$1.0 billion balance of the unsecured credit facility entered into on August 14, 2019, a large portion of approximately \$370 million of commercial paper notes, the remaining balance of \$175.2 million of the senior notes issued on December 10, 2010 ("2010 Senior Notes"), and for general corporate purposes. During the year ended December 31, 2019, we recorded a loss on early extinguishment of debt of \$4.8 million in Interest and financing expenses, representing the tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of the 2010 Senior Notes.

On April 3, 2018, we completed the Polyolefin Catalysts Divestiture to W.R. Grace & Co. for net cash proceeds of approximately \$413.6 million and recorded a gain of \$210.4 million before income taxes in 2018 related to the sale of this business. The transaction included Albemarle's Product Development Center located in Baton Rouge, Louisiana, and operations at our Yeosu, South Korea site. The sale did not include the organometallics or curatives portion of the PCS business. The Polyolefin Catalysts Divestiture reflects our commitment to investing in the future growth of our high priority businesses and returning capital to our shareholders.

In the first quarter of 2017, using a portion of the proceeds from the sale of the Chemetall Surface Treatment business, we repaid the 3.00% Senior notes in full, €307.0 million of the 1.875% Senior notes and \$174.7 million of the 4.50% Senior notes, as well as related tender premiums of \$45.2 million. As a result, Interest and financing expenses on the consolidated statements of income includes a loss on early extinguishment of debt of \$52.8 million for the year ended December 31, 2017, representing the tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of these senior notes.

Capital expenditures were \$851.8 million, \$700.0 million and \$317.7 million for the years ended December 31, 2019, 2018 and 2017, respectively, and were incurred mainly for plant, machinery and equipment, and mining resource development. The increase in capital expenditures during the year ended December 31, 2019 was primarily driven by expansion in our Lithium business. We expect our capital expenditures to be between \$1.0 billion and \$1.1 billion in 2020 for Lithium growth and capacity increases, as well as productivity and continuity of operations projects in all segments. Of the total capital expenditures, our projects related to the continuity of operations is expected to remain in the range of 5-7% of net sales, similar to prior years.

During 2019, we incurred \$20.7 million of acquisition and integration related costs related to various significant projects, including the acquisition of the Wodgina Project, primarily consisting of professional services and advisory fees. During 2018, we incurred \$19.4 million of acquisition and integration related costs related to various significant projects. During 2017, we incurred \$33.9 million of acquisition and integration related costs related to various significant projects, including the Jiangli New Materials acquisition, which contains non-routine compensation related costs negotiated specifically as a result of this acquisition that are outside of the Company's ordinary course compensation arrangements.

The Company is permitted to repurchase up to a maximum of 15,000,000 shares under a share repurchase program authorized by our Board of Directors. Under this share repurchase program, the Company repurchased approximately 5.3 million shares and 2.3 million shares of our common stock during 2018 and 2017, respectively, which reduced the Company's weighted average shares outstanding for purposes of calculating basic and diluted earnings per share. All of the shares repurchased in 2018 and 2017 were repurchased pursuant to the terms of accelerated share repurchase agreements with major financial institutions. There were no shares of our common stock repurchased during 2019. At December 31, 2019, there were 7,396,263 remaining shares available for repurchase under the Company's authorized share repurchase program.

Net current assets decreased to approximately \$816.1 million at December 31, 2019 from \$815.2 million at December 31, 2018, with the decrease being largely due to the 40% interest in our Kemerton assets being constructed to be transferred to MRL in the next twelve months, which is recorded in Accrued expenses. This is partially offset by the increase in Cash and cash equivalents and repayment of commercial paper notes resulting from the issuance of approximately \$1.6 billion of new notes in November 2019. Additional changes in the components of net current assets are primarily due to the timing of the sale of goods and other ordinary transactions leading up to the balance sheet dates and are not the result of any policy changes by the Company, and do not reflect any change in either the quality of our net current assets or our expectation of success in converting net working capital to cash in the ordinary course of business.

At December 31, 2019 and 2018, our cash and cash equivalents included \$565.6 million and \$525.8 million, respectively, held by our foreign subsidiaries. The majority of these foreign cash balances are associated with earnings that we have asserted are indefinitely reinvested and which we plan to use to support our continued growth plans outside the U.S. through funding of capital expenditures, acquisitions, research, operating expenses or other similar cash needs of our foreign operations. From time to time, we repatriate cash associated with earnings from our foreign subsidiaries to the U.S. for normal operating needs through intercompany dividends, but only from subsidiaries whose earnings we have not asserted to be indefinitely reinvested or whose earnings qualify as "previously taxed income" as defined by the Internal Revenue Code. For the years ended December 31, 2019, 2018 and 2017, we repatriated approximately \$351.9 million, \$621.8 million and \$20.5 million of cash, respectively, as part of these foreign earnings cash repatriation activities.

While we continue to closely monitor our cash generation, working capital management and capital spending in light of continuing uncertainties in the global economy, we believe that we will continue to have the financial flexibility and capability to opportunistically fund future growth initiatives. Additionally, we anticipate that future capital spending including business acquisitions, share repurchases and other cash outlays, should be financed primarily with cash flow provided by operations and cash on hand, with additional cash needed, if any, provided by borrowings. The amount and timing of any additional borrowings will depend on our specific cash requirements.

### Long-Term Debt

We currently have the following notes outstanding:

Issue Month/Year	Principal (in millions)	Interest Rate	Interest Payment Dates	Maturity Date
November 2019	€500.0	1.125%	November 25	November 25, 2025
November 2019	€500.0	1.625%	November 25	November 25, 2028
November 2019 <sup>(a)</sup>	\$300.0	3.45%	May 15 and November 15	November 15, 2029
November 2019 <sup>(b)</sup>	\$200.0	Floating Rate	February 15, May 15, August 15 and November 15	November 15, 2022
December 2014 <sup>(a)</sup>	€393.0	1.875%	December 8	December 8, 2021
November 2014 <sup>(a)</sup>	\$425.0	4.15%	June 1 and December 1	December 1, 2024
November 2014 <sup>(a)</sup>	\$350.0	5.45%	June 1 and December 1	December 1, 2044

(a) Denotes senior notes.

- (b) Borrowings bear interest at a floating rate based on the 3-month LIBOR plus 105 basis points. The floating interest rate for the initial interest period is 2.9595%, with the interest rate reset on each interest payment date.

Our senior notes and the floating rate note are senior unsecured obligations and rank equally with all our other senior unsecured indebtedness from time to time outstanding. These notes are effectively subordinated to any of our existing or future secured indebtedness and to the existing and future indebtedness of our subsidiaries. As is customary for such long-term debt instruments, each of these notes outstanding has terms that allow us to redeem the notes before its maturity, in whole at any time or in part from time to time, at a redemption price equal to the greater of (i) 100% of the principal amount of these notes to be redeemed, or (ii) the sum of the present values of the remaining scheduled payments of principal and interest thereon (exclusive of interest accrued to the date of redemption) discounted to the redemption date on a semi-annual basis using the comparable government rate (as defined in the indentures governing these notes) plus between 25 and 40 basis points, depending on the note, plus, in each case, accrued interest thereon to the date of redemption. Holders may require us to purchase such notes at 101% upon a change of control triggering event, as defined in the indentures. These notes are subject to typical events of default, including bankruptcy and insolvency events, nonpayment and the acceleration of certain subsidiary indebtedness of \$40 million or more caused by a nonpayment default.

Our Euro notes issued in 2019 are unsecured and unsubordinated obligations and rank equally in right of payment to all our other unsecured senior obligations. As is customary for such long-term debt instruments, each of these notes outstanding has terms that allow us to redeem the notes before its maturity, in whole at any time or in part from time to time, at a redemption price equal to the greater of (i) 100% of the principal amount of the notes to be redeemed and (ii) the sum of the present values of the remaining scheduled payments of principal thereof and interest thereon (exclusive of interest accrued to, but excluding, the date of redemption) discounted to the redemption date on an annual basis using the bond rate (as defined in the indentures governing these notes) plus between 25 and 35 basis points, depending on the note, plus, in each case, accrued and unpaid interest on the principal amount being redeemed to, but excluding, the date of redemption. Holders may require us to purchase such notes at 101% upon a change of control triggering event, as defined in the indentures. These notes are subject to typical events of default, including bankruptcy and insolvency events, nonpayment and the acceleration of certain subsidiary indebtedness exceeding \$100 million caused by a nonpayment default.

Our revolving, unsecured credit agreement dated as of June 21, 2018, as amended on August 14, 2019 (the "2018 Credit Agreement"), currently provides for borrowings of up to \$1.0 billion and matures on August 9, 2024. Borrowings under the 2018 Credit Agreement bear interest at variable rates based on an average LIBOR for deposits in the relevant currency plus an applicable margin which ranges from 0.910% to 1.500%, depending on the Company's credit rating from Standard & Poor's Rating Services LLC ("S&P"), Moody's Investors Services, Inc. ("Moody's") and Fitch Ratings, Inc. ("Fitch"). The applicable margin on the facility was 1.125% as of December 31, 2019. There were no borrowings outstanding under the 2018 Credit Agreement as of December 31, 2019.

On August 14, 2019, the Company entered into a \$1.2 billion unsecured credit facility (the "2019 Credit Facility") with several banks and other financial institutions. The lenders' commitment to provide loans under the 2019 Credit Facility terminates on August 11, 2020, with each such loan maturing one year after the funding of such loan. The Company can request that the maturity date of loans be extended for an additional period of up to four additional years, but any such extension is subject to the approval of the lenders. Borrowings under the 2019 Credit Facility bear interest at variable rates based on an average LIBOR for deposits in the relevant currency plus an applicable margin which ranges from 0.875% to 1.625%, depending on the Company's credit rating from S&P, Moody's and Fitch. The applicable margin on the credit facility was 1.125% as of December 31, 2019. In October 2019, we borrowed \$1.0 billion under this credit facility to fund the cash portion of the October 31, 2019 acquisition of a 60% interest in MRL's Wodgina Project and for general corporate purposes, and such amount was repaid in full in November 2019 using a portion of the proceeds received from the notes issued in 2019 (see above for further details). Following the repayment of the amounts borrowed, the Company had \$200 million remaining to borrow under this credit facility. There were no borrowings outstanding under the 2019 Credit Facility as of December 31, 2019.

Borrowings under the 2019 Credit Facility and 2018 Credit Agreement (together "the Credit Agreements") are conditioned upon satisfaction of certain conditions precedent, including the absence of defaults. The Company is subject to one financial covenant, as well as customary affirmative and negative covenants. The financial covenant requires that the Company's consolidated funded debt to consolidated EBITDA ratio (as such terms are defined in the Credit Agreements) to be less than or equal to 3.50:1.00, subject to adjustments in accordance with the terms of the Credit Agreements relating to a consummation of an acquisition where the consideration includes cash proceeds from issuance of funded debt in excess of \$500 million. The Credit Agreements also contain customary default provisions, including defaults for non-payment, breach of representations and warranties, insolvency, non-performance of covenants and cross-defaults to other material indebtedness. The occurrence of an event of default under the Credit Agreements could result in all loans and other obligations becoming immediately due and payable and the credit facility being terminated. Certain representations, warranties and covenants under

the 2018 Credit Agreement were conformed to those under the 2019 Credit Facility following an amendment entered into on August 14, 2019.

On May 29, 2013, we entered into agreements to initiate a commercial paper program on a private placement basis under which we may issue unsecured commercial paper notes (the “Commercial Paper Notes”) from time-to-time up to a maximum aggregate principal amount outstanding at any time of \$750.0 million. The proceeds from the issuance of the Commercial Paper Notes are expected to be used for general corporate purposes, including the repayment of other debt of the Company. The Credit Agreements are available to repay the Commercial Paper Notes, if necessary. Aggregate borrowings outstanding under the Credit Agreements and the Commercial Paper Notes will not exceed the \$1.2 billion current maximum amount available under the Credit Agreements. The Commercial Paper Notes will be sold at a discount from par, or alternatively, will be sold at par and bear interest at rates that will vary based upon market conditions at the time of issuance. The maturities of the Commercial Paper Notes will vary but may not exceed 397 days from the date of issue. The definitive documents relating to the commercial paper program contain customary representations, warranties, default and indemnification provisions. At December 31, 2019, we had \$186.7 million of Commercial Paper Notes outstanding bearing a weighted-average interest rate of approximately 2.01% and a weighted-average maturity of 39 days. The Commercial Paper Notes are classified as Current portion of long-term debt in our consolidated balance sheets at December 31, 2019 and 2018.

The non-current portion of our long-term debt amounted to \$2.86 billion at December 31, 2019, compared to \$1.40 billion at December 31, 2018. In addition, at December 31, 2019, we had the ability to borrow \$1.01 billion under our commercial paper program and the Credit Agreements, and \$283.4 million under other existing lines of credit, subject to various financial covenants under our Credit Agreements. We have the ability and intent to refinance our borrowings under our other existing credit lines with borrowings under the Credit Agreements, as applicable. Therefore, the amounts outstanding under those credit lines, if any, are classified as long-term debt. We believe that as of December 31, 2019 we were, and currently are, in compliance with all of our debt covenants. For additional information about our long-term debt obligations, see Note 14, “Long-Term Debt,” to our consolidated financial statements included in Part II, Item 8 of this report.

### Off-Balance Sheet Arrangements

In the normal course of business with customers, vendors and others, we have entered into off-balance sheet arrangements, including bank guarantees and letters of credit, which totaled approximately \$82.3 million at December 31, 2019. None of these off-balance sheet arrangements has, or is likely to have, a material effect on our current or future financial condition, results of operations, liquidity or capital resources.

### Other Obligations

The following table summarizes our contractual obligations for capital projects, various take or pay and throughput agreements, long-term debt, operating leases and other commitments as of December 31, 2019 (in thousands):

	2020	2021	2022	2023	2024	Thereafter
Long-term debt obligations <sup>(a)</sup>	\$ 187,336	\$ 436,072	\$ 200,000	\$ —	\$ 425,000	\$ 1,825,984
Expected interest payments on long-term debt obligations <sup>(b)</sup>	76,515	76,515	68,134	62,215	60,745	473,065
Operating lease obligations (rental)	28,333	15,306	13,153	12,433	11,850	94,002
Take or pay / throughput agreements <sup>(c)</sup>	62,568	20,860	7,690	5,628	4,830	10,907
Letters of credit and guarantees	49,152	11,383	1,303	1,190	—	19,305
Transition tax on foreign earnings <sup>(d)</sup>	10,540	30,442	30,442	44,578	67,177	130,850
Capital projects	500,975	96,343	3,473	—	—	—
Total	\$ 915,419	\$ 686,921	\$ 324,195	\$ 126,044	\$ 569,602	\$ 2,554,113

(a) Amounts represent the expected principal payments of our long-term debt and do not include any fair value adjustments, premiums or discounts. Obligations in 2020 include our outstanding Commercial Paper Notes of \$186.7 million with a weighted average maturity of 39 days.

(b) Interest on our fixed rate borrowings was calculated based on the stated rates of such borrowings. A weighted average interest rate of approximately 2.87% was used for our remaining long-term debt obligations.

(c) These amounts primarily relate to contracts entered into with certain third party vendors in the normal course of business to secure raw materials for our production processes. In order to secure materials, sometimes for long durations, these contracts mandate a minimum amount of product to be purchased at predetermined rates over a set timeframe.



- (d) In December 2017, the TCJA was signed into law imposing a one-time transition tax on foreign earnings, payable over an eight-year period. The one-time transition tax imposed by the TCJA is based on our total post-1986 earnings and profits that we previously deferred from U.S. income taxes.

Amounts in the table above exclude required employer pension contributions. Contributions to our domestic and foreign qualified and nonqualified pension plans, including our supplemental executive retirement plan (“SERP”), are expected to approximate \$13 million in 2020. We may choose to make additional pension contributions in excess of this amount. We made contributions of approximately \$13.4 million to our domestic and foreign pension plans (both qualified and nonqualified) during the year ended December 31, 2019.

The liability related to uncertain tax positions, including interest and penalties, recorded in Other noncurrent liabilities totaled \$21.2 million and \$22.9 million at December 31, 2019 and 2018, respectively. Related assets for corresponding offsetting benefits recorded in Other assets totaled \$26.1 million and \$13.0 million at December 31, 2019 and 2018, respectively. We cannot estimate the amounts of any cash payments during the next twelve months associated with these liabilities and are unable to estimate the timing of any such cash payments in the future at this time.

### **Liquidity Outlook**

We anticipate that cash on hand and cash provided by operating activities, divestitures and borrowings will be sufficient to pay our operating expenses, satisfy debt service obligations, fund any capital expenditures and share repurchases, make acquisitions, make pension contributions and pay dividends for the foreseeable future. Our main focus over the next three years, in terms of uses of cash, will be investing in growth of the businesses and the return of value to shareholders. Additionally, we will continue to evaluate the merits of any opportunities that may arise for acquisitions of businesses or assets, which may require additional liquidity. In 2019, we announced that we have begun to pursue opportunities to divest our PCS and fine chemistry services businesses, with the expectation that each divestiture will be completed in 2020.

Our cash flows from operations may be negatively affected by adverse consequences to our customers and the markets in which we compete as a result of moderating global economic conditions and reduced capital availability.

While we maintain business relationships with a diverse group of financial institutions, an adverse change in their credit standing could lead them to not honor their contractual credit commitments, decline funding under existing but uncommitted lines of credit, not renew their extensions of credit or not provide new financing. While the global corporate bond and bank loan markets remain strong, periods of elevated uncertainty related to global economic and/or geopolitical concerns may limit efficient access to such markets for extended periods of time. If such concerns heighten, we may incur increased borrowing costs and reduced credit capacity as our various credit facilities mature. When the U.S. Federal Reserve or similar national reserve banks in other countries decide to tighten the monetary supply in response, for example, to improving economic conditions, we may incur increased borrowing costs as interest rates increase on our variable rate credit facilities, as our various credit facilities mature or as we refinance any maturing fixed rate debt obligations, although these cost increases would be partially offset by increased income rates on portions of our cash deposits.

Overall, with generally strong cash-generative businesses and no significant long-term debt maturities before 2021, we believe we have, and will maintain, a solid liquidity position.

As previously reported in 2018, following receipt of information regarding potential improper payments being made by third party sales representatives of our Refining Solutions business, within our Catalysts segment, we promptly retained outside counsel and forensic accountants to investigate potential violations of the Company’s Code of Conduct, the FCPA, and other potentially applicable laws. Based on this internal investigation, we have voluntarily self-reported potential issues relating to the use of third party sales representatives in our Refining Solutions business, within our Catalysts segment, to the DOJ, the SEC, and the DPP, and are cooperating with the DOJ, the SEC, and DPP in their review of these matters. In connection with our internal investigation, we have implemented, and are continuing to implement, appropriate remedial measures.

At this time, we are unable to predict the duration, scope, result or related costs associated with the investigations by the DOJ, the SEC, or DPP. We are unable to predict what, if any, action may be taken by the DOJ, the SEC, or DPP, or what penalties or remedial actions they may seek to impose. Any determination that our operations or activities are not in compliance with existing laws or regulations could result in the imposition of fines, penalties, disgorgement, equitable relief, or other losses. We do not believe, however, that any such fines, penalties, disgorgement, equitable relief or other losses would have a material adverse effect on our financial condition or liquidity.

We had cash and cash equivalents totaling \$613.1 million as of December 31, 2019, of which \$565.6 million is held by our foreign subsidiaries. This cash represents an important source of our liquidity and is invested in bank accounts or money

market investments with no limitations on access. The cash held by our foreign subsidiaries is intended for use outside of the U.S. We anticipate that any needs for liquidity within the U.S. in excess of our cash held in the U.S. can be readily satisfied with borrowings under our existing U.S. credit facilities or our commercial paper program.

### **Safety and Environmental Matters**

We are subject to federal, state, local and foreign requirements regulating the handling, manufacture and use of materials (some of which may be classified as hazardous or toxic by one or more regulatory agencies), the discharge of materials into the environment and the protection of the environment. To our knowledge, we are currently complying and expect to continue to comply in all material respects with applicable environmental laws, regulations, statutes and ordinances. Compliance with existing federal, state, local and foreign environmental protection laws is not expected to have a material effect on capital expenditures, earnings or our competitive position, but the costs associated with increased legal or regulatory requirements could have an adverse effect on our operating results.

Among other environmental requirements, we are subject to the federal Superfund law, and similar state laws, under which we may be designated as a PRP, and may be liable for a share of the costs associated with cleaning up various hazardous waste sites. Management believes that in cases in which we may have liability as a PRP, our liability for our share of cleanup is de minimis. Further, almost all such sites represent environmental issues that are quite mature and have been investigated, studied and in many cases settled. In de minimis situations, our policy generally is to negotiate a consent decree and to pay any apportioned settlement, enabling us to be effectively relieved of any further liability as a PRP, except for remote contingencies. In other than de minimis PRP matters, our records indicate that unresolved PRP exposures should be immaterial. We accrue and expense our proportionate share of PRP costs. Because management has been actively involved in evaluating environmental matters, we are able to conclude that the outstanding environmental liabilities for unresolved PRP sites should not have a material adverse effect upon our results of operations or financial condition.

Our environmental and safety operating costs charged to expense were \$48.0 million, \$42.9 million and \$40.1 million in 2019, 2018 and 2017, respectively, excluding depreciation of previous capital expenditures, and are expected to be in the same range in the next few years. Costs for remediation have been accrued and payments related to sites are charged against accrued liabilities, which at December 31, 2019 totaled approximately \$42.6 million, a decrease of \$7.0 million from \$49.6 million at December 31, 2018. See Note 17, "Commitments and Contingencies" to our consolidated financial statements included in Part II, Item 8 of this report for a reconciliation of our environmental liabilities for the years ended December 31, 2019, 2018 and 2017.

We believe that any sum we may be required to pay in connection with environmental remediation and asset retirement obligation matters in excess of the amounts recorded should occur over a period of time and should not have a material adverse effect upon our results of operations, financial condition or cash flows on a consolidated annual basis, although any such sum could have a material adverse impact on our results of operations, financial condition or cash flows in a particular quarterly reporting period.

Capital expenditures for pollution-abatement and safety projects, including such costs that are included in other projects, were approximately \$44.4 million, \$47.3 million and \$28.1 million in 2019, 2018 and 2017, respectively. In the future, capital expenditures for these types of projects may increase due to more stringent environmental regulatory requirements and our efforts in reaching sustainability goals. Management's estimates of the effects of compliance with governmental pollution-abatement and safety regulations are subject to (a) the possibility of changes in the applicable statutes and regulations or in judicial or administrative construction of such statutes and regulations and (b) uncertainty as to whether anticipated solutions to pollution problems will be successful, or whether additional expenditures may prove necessary.

### **Recently Issued Accounting Pronouncements**

See Note 1, "Summary of Significant Accounting Policies" to our consolidated financial statements included in Part II, Item 8 of this report for a discussion of our Recently Issued Accounting Pronouncements.

### **Item 7A. Quantitative and Qualitative Disclosures About Market Risk.**

The primary currencies to which we have foreign currency exchange rate exposure are the Euro, Japanese Yen, Chinese Renminbi, Australian Dollar and Chilean Peso. In response to greater fluctuations in foreign currency exchange rates in recent periods, we have increased the degree of exposure risk management activities to minimize the potential impact on earnings.

We manage our foreign currency exposures by balancing certain assets and liabilities denominated in foreign currencies and through the use, from time to time, of foreign currency forward contracts. The principal objective of such contracts is to

minimize the financial impact of changes in foreign currency exchange rates. The counterparties to these contractual agreements are major financial institutions with which we generally have other financial relationships. We are exposed to credit loss in the event of nonperformance by these counterparties. However, we do not anticipate nonperformance by the counterparties. We do not utilize financial instruments for trading or other speculative purposes.

The primary method we use to reduce foreign currency exposure is to identify natural hedges, in which the operating activities denominated in respective currencies across various subsidiaries balance in respect to timing and the underlying exposures. In the event a natural hedge is not available, we may employ a forward contract to reduce exposure, generally expiring within one year. While these contracts are subject to fluctuations in value, such fluctuations are intended to offset the changes in the value of the underlying exposures being hedged. In the fourth quarter of 2019, we entered into a foreign currency forward contract to hedge the cash flow exposure of non-functional currency purchases during the construction of the Kemerton plant in Australia. This contract has been designated as an effective hedging instrument, and beginning the date of designation, gains or losses on the revaluation of this contract to our reporting currency have been and will be recorded in Accumulated other comprehensive loss. All other gains and losses on foreign currency forward contracts not designated as an effective hedging instrument are recognized in Other expenses, net, and generally do not have a significant impact on results of operations.

At December 31, 2019, our financial instruments subject to foreign currency exchange risk consisted of foreign currency forward contracts with an aggregate notional value of \$1.63 billion and with a fair value representing a net asset position of \$3.8 million. Fluctuations in the value of these contracts are intended to offset the changes in the value of the underlying exposures being hedged. We conducted a sensitivity analysis on the fair value of our foreign currency hedge portfolio assuming an instantaneous 10% change in select foreign currency exchange rates from their levels as of December 31, 2019, with all other variables held constant. A 10% appreciation of the U.S. Dollar against foreign currencies that we hedge would result in a decrease of approximately \$35.4 million in the fair value of our foreign currency forward contracts. A 10% depreciation of the U.S. Dollar against these foreign currencies would result in an increase of approximately \$43.8 million in the fair value of our foreign currency forward contracts. The sensitivity of the fair value of our foreign currency hedge portfolio represents changes in fair values estimated based on market conditions as of December 31, 2019, without reflecting the effects of underlying anticipated transactions. When those anticipated transactions are realized, actual effects of changing foreign currency exchange rates could have a material impact on our earnings and cash flows in future periods.

On December 18, 2014, the carrying value of our 1.875% Euro-denominated senior notes was designated as an effective hedge of our net investment in foreign subsidiaries where the Euro serves as the functional currency, and beginning on the date of designation, gains or losses on the revaluation of these senior notes to our reporting currency have been and will be recorded in Accumulated other comprehensive loss. In January 2017, we repaid €307.0 million of these senior notes using proceeds from the sale of the Chemetall Surface Treatment business. This repayment did not impair the designated hedge of our net investment in foreign subsidiaries where the Euro serves as the functional currency.

We are exposed to changes in interest rates that could impact our results of operations and financial condition. We manage global interest rate and foreign exchange exposure as part of our regular operational and financing strategies. We had variable interest rate borrowings of \$394.0 million and \$313.8 million outstanding at December 31, 2019 and 2018, respectively. These borrowings represented 13% and 18% of total outstanding debt and bore average interest rates of 2.46% and 2.85% at December 31, 2019 and 2018, respectively. A hypothetical 10% increase (approximately 25 basis points) in the average interest rate applicable to these borrowings would change our annualized interest expense by approximately \$1.0 million as of December 31, 2019. We may enter into interest rate swaps, collars or similar instruments with the objective of reducing interest rate volatility relating to our borrowing costs.

Our raw materials are subject to price volatility caused by weather, supply conditions, political and economic variables and other unpredictable factors. Historically, we have not used futures, options or swap contracts to manage the volatility related to the above exposures. However, the refinery catalysts business has used financing arrangements to provide long-term protection against changes in metals prices. We seek to limit our exposure by entering into long-term contracts when available, and we seek price increase limitations through contracts. These contracts do not have a significant impact on our results of operations.

**Item 8. Financial Statements and Supplementary Data.**

**MANAGEMENT’S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) and 15d-15(f). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States, and that receipts and expenditures of the Company are being made only in accordance with management’s and our directors’ authorizations; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria for effective internal control over financial reporting described in the *Internal Control—Integrated Framework 2013* set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States. The concept of reasonable assurance is based on the recognition that there are inherent limitations in all systems of internal control. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management’s assessment of internal control over financial reporting as of December 31, 2019 excludes the 60% ownership interest in the MARBL Lithium Joint Venture because it was formed as part of a purchase business combination of 60% ownership interest in Mineral Resources Limited’s (“MRL”) Wodgina hard rock lithium mine project (“Wodgina Project”) during 2019. The MARBL Lithium Joint Venture is consolidated at our proportionate share, whose proportionate assets represent 18% of the related consolidated financial statement amounts as of December 31, 2019.

The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

/s/ LUTHER C. KISSAM IV

Luther C. Kissam IV  
Chairman, President and Chief Executive Officer  
(principal executive officer)  
February 26, 2020

## Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Albemarle Corporation:

### ***Opinions on the Financial Statements and Internal Control over Financial Reporting***

We have audited the accompanying consolidated balance sheets of Albemarle Corporation and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the COSO.

### ***Change in Accounting Principle***

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and the manner in which it accounts for revenues with contracts from customers in 2018.

### ***Basis for Opinions***

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management’s Report on Internal Control over Financial Reporting, management has excluded the MARBL joint venture from its assessment of internal control over financial reporting as of December 31, 2019, because it was formed as part of a purchase business combination of 60% ownership interest in Mineral Resources Limited’s (“MRL”) Wodgina hard rock lithium mine project (“Wodgina Project”) during 2019. We have also excluded the MARBL joint venture from our audit of internal control over financial reporting. The MARBL joint venture is a 60% owned subsidiary whose proportionate assets excluded from management’s assessment and our audit of internal control over financial reporting represent 18% of the related consolidated financial statement amount as of December 31, 2019.

### ***Definition and Limitations of Internal Control over Financial Reporting***

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

### ***Critical Audit Matters***

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

### ***Valuation of Acquired Mineral Reserves***

As described in Notes 1 and 2 to the consolidated financial statements, on October 31, 2019, the Company completed the acquisition of a 60% ownership interest in MRL's Wodgina Project creating a joint venture named MARBL for net consideration of \$1,324 million, resulting in approximately \$1,005 million of mineral reserves being recorded. The fair value of the mineral reserves is determined using an excess earnings approach, which requires management to estimate future cash flows, net of capital investments in the specific operation. Management's cash flow projections involved the use of significant estimates and assumptions with respect to the expected production of the mine over the estimated time period, sales prices, shipment volumes, and expected profit margins. The present value of the projected net cash flows represents the preliminary fair value assigned to mineral reserves. The discount rate is a significant assumption used in the valuation model.

The principal considerations for our determination that performing procedures relating to the valuation of acquired mineral reserves is a critical audit matter are (i) there was a high degree of auditor judgment and subjectivity in applying procedures relating to the fair value measurement of acquired mineral reserves due to the significant amount of judgment by management when developing the estimate; (ii) significant audit effort was required in evaluating the significant assumptions relating to the estimate, such as the expected production of the mine over the estimated time period, sales prices, shipment volumes, expected profit margins and the discount rate; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of the mineral reserves, including the assumptions relating to the expected production of the mine over the estimated time period, sales prices, shipment volumes, expected profit margins and the discount rate. These procedures also included (i) comparing expected production of the mine and shipment volumes to geologist reports related to the ore reserve estimates and information supporting management's expected extraction of these reserves over the estimated time period; (ii) comparing estimated sales prices to industry projections and other forecast information prepared by the Company; and (iii) comparing expected profit margins to information used by management to support these inputs and assumptions such as benchmarking data, comparisons to other similar operations within the Company, and analysis of specific contracts to determine whether operating expenses were based on supportable costs. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of the Company's discounted cash flow model and the reasonableness of certain significant assumptions, including the discount rate.

/s/ PricewaterhouseCoopers LLP  
Charlotte, North Carolina  
February 26, 2020

We have served as the Company's auditor since 1994.

**CONSOLIDATED STATEMENTS OF INCOME***(In Thousands, Except Per Share Amounts)*

<b>Year Ended December 31</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
Net sales	\$ 3,589,427	\$ 3,374,950	\$ 3,071,976
Cost of goods sold	2,331,649	2,157,694	1,965,700
Gross profit	1,257,778	1,217,256	1,106,276
Selling, general and administrative expenses	533,368	446,090	450,286
Research and development expenses	58,287	70,054	84,330
Gain on sale of business	—	(210,428)	—
Operating profit	666,123	911,540	571,660
Interest and financing expenses	(57,695)	(52,405)	(115,350)
Other expenses, net	(45,478)	(64,434)	(9,512)
Income before income taxes and equity in net income of unconsolidated investments	562,950	794,701	446,798
Income tax expense	88,161	144,826	431,817
Income before equity in net income of unconsolidated investments	474,789	649,875	14,981
Equity in net income of unconsolidated investments (net of tax)	129,568	89,264	84,487
Net income	604,357	739,139	99,468
Net income attributable to noncontrolling interests	(71,129)	(45,577)	(44,618)
Net income attributable to Albemarle Corporation	\$ 533,228	\$ 693,562	\$ 54,850
Basic earnings per share	\$ 5.03	\$ 6.40	\$ 0.49
Diluted earnings per share	\$ 5.02	\$ 6.34	\$ 0.49
Weighted-average common shares outstanding—basic	105,949	108,427	110,914
Weighted-average common shares outstanding—diluted	106,321	109,458	112,380

See accompanying notes to the consolidated financial statements.



**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME***(In Thousands)*

<b>Year Ended December 31</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
Net income	\$ 604,357	\$ 739,139	\$ 99,468
Other comprehensive (loss) income, net of tax:			
Foreign currency translation	(62,031)	(150,258)	227,439
Pension and postretirement benefits	632	(138)	(97)
Net investment hedge	8,441	25,786	(41,827)
Cash flow hedge	4,847	—	—
Interest rate swap	2,591	(585)	2,116
Total other comprehensive (loss) income, net of tax	(45,520)	(125,195)	187,631
Comprehensive income	558,837	613,944	287,099
Comprehensive income attributable to noncontrolling interests	(70,662)	(45,396)	(45,505)
Comprehensive income attributable to Albemarle Corporation	\$ 488,175	\$ 568,548	\$ 241,594

See accompanying notes to the consolidated financial statements.

Albemarle Corporation and Subsidiaries  
**CONSOLIDATED BALANCE SHEETS**

(In Thousands)

<b>December 31</b>	<b>2019</b>	<b>2018</b>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 613,110	\$ 555,320
Trade accounts receivable, less allowance for doubtful accounts (2019—\$3,711; 2018—\$4,460)	612,651	605,712
Other accounts receivable	67,551	52,059
Inventories	768,984	700,540
Other current assets	162,813	84,790
Total current assets	2,225,109	1,998,421
Property, plant and equipment, at cost	6,817,843	4,799,063
Less accumulated depreciation and amortization	1,908,370	1,777,979
Net property, plant and equipment	4,909,473	3,021,084
Investments	579,813	528,722
Other assets	213,061	80,135
Goodwill	1,578,785	1,567,169
Other intangibles, net of amortization	354,622	386,143
Total assets	\$ 9,860,863	\$ 7,581,674
<b>Liabilities and Equity</b>		
Current liabilities:		
Accounts payable	\$ 574,138	\$ 522,516
Accrued expenses	553,160	257,323
Current portion of long-term debt	187,336	307,294
Dividends payable	38,764	35,169
Current operating lease liability	23,137	—
Income taxes payable	32,461	60,871
Total current liabilities	1,408,996	1,183,173
Long-term debt	2,862,921	1,397,916
Postretirement benefits	50,899	46,157
Pension benefits	292,073	285,396
Other noncurrent liabilities	754,536	526,942
Deferred income taxes	397,858	382,982
Commitments and contingencies (Note 17)		
Equity:		
Albemarle Corporation shareholders' equity:		
Common stock, \$.01 par value (authorized 150,000 shares), issued and outstanding — 106,040 in 2019 and 105,616 in 2018	1,061	1,056
Additional paid-in capital	1,383,446	1,368,897
Accumulated other comprehensive loss	(395,735)	(350,682)
Retained earnings	2,943,478	2,566,050
Total Albemarle Corporation shareholders' equity	3,932,250	3,585,321
Noncontrolling interests	161,330	173,787
Total equity	4,093,580	3,759,108
Total liabilities and equity	\$ 9,860,863	\$ 7,581,674

See accompanying notes to the consolidated financial statements.

## CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

*(In Thousands, Except Share Data)*

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Retained Earnings	Total Albemarle Shareholders' Equity	Noncontrolling Interests	Total Equity
	Shares	Amounts						
Balance at January 1, 2017	112,523,790	\$ 1,125	\$ 2,084,418	\$ (412,412)	\$ 2,121,931	\$ 3,795,062	\$ 147,542	\$ 3,942,604
Net income					54,850	54,850	44,618	99,468
Other comprehensive income				186,744		186,744	887	187,631
Cash dividends declared, \$1.28 per common share					(141,618)	(141,618)	(36,756)	(178,374)
Stock-based compensation			16,505			16,505		16,505
Exercise of stock options	210,432	2	8,236			8,238		8,238
Shares repurchased	(2,341,083)	(23)	(249,977)			(250,000)		(250,000)
Issuance of common stock, net	243,024	2	(2)			—		—
Termination of Tianqi Lithium Corporation option agreement			13,144			13,144	(13,144)	—
Shares withheld for withholding taxes associated with common stock issuances	(89,489)	(1)	(8,375)			(8,376)		(8,376)
Balance at December 31, 2017	110,546,674	\$ 1,105	\$ 1,863,949	\$ (225,668)	\$ 2,035,163	\$ 3,674,549	\$ 143,147	\$ 3,817,696
Balance at January 1, 2018	110,546,674	\$ 1,105	\$ 1,863,949	\$ (225,668)	\$ 2,035,163	\$ 3,674,549	\$ 143,147	\$ 3,817,696
Net income					693,562	693,562	45,577	739,139
Other comprehensive loss				(125,014)		(125,014)	(181)	(125,195)
Cash dividends declared, \$1.34 per common share					(144,601)	(144,601)	(14,756)	(159,357)
Cumulative adjustments from adoption of income tax standard updates					(18,074)	(18,074)		(18,074)
Stock-based compensation			18,506			18,506		18,506
Exercise of stock options	94,031	1	3,632			3,633		3,633
Shares repurchased	(5,262,654)	(53)	(499,947)			(500,000)		(500,000)
Issuance of common stock, net	383,974	4	(4)			—		—
Shares withheld for withholding taxes associated with common stock issuances	(145,997)	(1)	(17,239)			(17,240)		(17,240)
Balance at December 31, 2018	105,616,028	\$ 1,056	\$ 1,368,897	\$ (350,682)	\$ 2,566,050	\$ 3,585,321	\$ 173,787	\$ 3,759,108
Balance at January 1, 2019	105,616,028	\$ 1,056	\$ 1,368,897	\$ (350,682)	\$ 2,566,050	\$ 3,585,321	\$ 173,787	\$ 3,759,108
Net income					533,228	533,228	71,129	604,357
Other comprehensive loss				(45,053)		(45,053)	(467)	(45,520)
Cash dividends declared, \$1.47 per common share					(155,800)	(155,800)	(83,187)	(238,987)
Stock-based compensation			21,284			21,284		21,284
Exercise of stock options	161,909	2	4,812			4,814		4,814
Issuance of common stock, net	396,269	4	(4)			—		—
Increase in ownership interest of noncontrolling interest			(513)			(513)	68	(445)
Shares withheld for withholding taxes associated with common stock issuances	(133,991)	(1)	(11,030)			(11,031)		(11,031)
Balance at December 31, 2019	106,040,215	\$ 1,061	\$ 1,383,446	\$ (395,735)	\$ 2,943,478	\$ 3,932,250	\$ 161,330	\$ 4,093,580

See accompanying notes to the consolidated financial statements.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands)

Year Ended December 31	2019	2018	2017
Cash and cash equivalents at beginning of year	\$ 555,320	\$ 1,137,303	\$ 2,269,756
Cash flows from operating activities:			
Net income	604,357	739,139	99,468
Adjustments to reconcile net income to cash flows from operating activities:			
Depreciation and amortization	213,484	200,698	196,928
Gain on acquisition	—	—	(6,221)
Gain on sale of business	—	(210,428)	—
Gain on sale of property	(14,411)	—	—
Stock-based compensation and other	19,680	15,228	19,404
Equity in net income of unconsolidated investments (net of tax)	(129,568)	(89,264)	(84,487)
Dividends received from unconsolidated investments and nonmarketable securities	71,746	57,415	39,386
Pension and postretirement expense (benefit)	31,515	10,410	(12,436)
Pension and postretirement contributions	(16,478)	(15,236)	(13,341)
Unrealized gain on investments in marketable securities	(2,809)	(527)	(3,135)
Loss on early extinguishment of debt	4,829	—	52,801
Deferred income taxes	14,394	49,164	(41,941)
Changes in current assets and liabilities, net of effects of acquisitions and divestitures:			
(Increase) in accounts receivable	(18,220)	(97,448)	(74,545)
(Increase) in inventories	(46,304)	(124,067)	(101,545)
(Increase) in other current assets	(32,941)	(2,181)	(213)
(Decrease) increase in accounts payable	(12,234)	73,730	53,421
(Decrease) in accrued expenses and income taxes payable	(4,640)	(1,999)	(269,381)
Other, net	36,974	(58,469)	449,816
Net cash provided by operating activities	719,374	546,165	303,979
Cash flows from investing activities:			
Acquisitions, net of cash acquired	(820,000)	(11,403)	(44,367)
Capital expenditures	(851,796)	(699,991)	(317,703)
Cash proceeds from divestitures, net	—	413,569	6,857
Proceeds from sale of property and equipment	10,356	—	—
Sales of (investments in) marketable securities, net	384	(270)	(275)
Repayments from joint ventures	—	—	1,250
Investments in equity and other corporate investments	(2,569)	(5,600)	(3,565)
Net cash used in investing activities	(1,663,625)	(303,695)	(357,803)
Cash flows from financing activities:			
Proceeds from borrowings of other long-term debt	1,597,807	—	27,000
Repayments of long-term debt	(175,215)	—	(778,209)
Other (repayments) borrowings, net	(126,364)	(113,567)	138,751
Fees related to early extinguishment of debt	(4,419)	—	(46,959)
Dividends paid to shareholders	(152,204)	(144,596)	(140,557)
Dividends paid to noncontrolling interests	(83,187)	(14,756)	(36,756)
Repurchases of common stock	—	(500,000)	(250,000)
Proceeds from exercise of stock options	4,814	3,633	8,238
Withholding taxes paid on stock-based compensation award distributions	(11,031)	(17,240)	(8,376)
Debt financing costs	(7,514)	—	—
Net cash provided by (used in) financing activities	1,042,687	(786,526)	(1,086,868)
Net effect of foreign exchange on cash and cash equivalents	(40,646)	(37,927)	8,239
Increase (decrease) in cash and cash equivalents	57,790	(581,983)	(1,132,453)
Cash and cash equivalents at end of year	\$ 613,110	\$ 555,320	\$ 1,137,303

See accompanying notes to the consolidated financial statements.

**NOTE 1—Summary of Significant Accounting Policies:***Basis of Consolidation*

The consolidated financial statements include the accounts and operations of Albemarle Corporation and our wholly owned, majority owned and controlled subsidiaries. Unless the context otherwise indicates, the terms “Albemarle,” “we,” “us,” “our” or “the Company” mean Albemarle Corporation and its consolidated subsidiaries. For entities that we control and are the primary beneficiary, but own less than 100%, we record the minority ownership as noncontrolling interest, except as noted below. We apply the equity method of accounting for investments in which we have an ownership interest from 20% to 50% or where we exercise significant influence over the related investee’s operations. All significant intercompany accounts and transactions are eliminated in consolidation.

As described further in Note 2, “Acquisitions,” we completed the acquisition of a 60% ownership interest in Mineral Resources Limited’s (“MRL”) Wodgina hard rock lithium mine project (“Wodgina Project”) on October 31, 2019 creating a joint venture named MARBL Lithium Joint Venture (“MARBL”). The consolidated financial statements contained herein include our proportionate share of the results of operations of the Wodgina Project, commencing on November 1, 2019. We are entitled to a pro rata portion of 60% of all minerals (other than iron ore and tantalum) recovered from the tenements and produced by the joint venture. The joint venture is unincorporated with each investor holding an undivided interest in each asset and proportionately liable for each liability; therefore our proportionate share of assets, liabilities, revenue and expenses are included in the appropriate classifications in the consolidated financial statements.

*Estimates, Assumptions and Reclassifications*

The preparation of financial statements in conformity with generally accepted accounting principles (“GAAP”) in the United States (“U.S.”) requires management to make estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

*Revenue Recognition*

Effective January 1, 2018, we adopted Accounting Standards Update (“ASU”) No. 2014-09, “Revenue from Contracts with Customers” and all related amendments using the modified retrospective method. There was no material impact to our results of operations or financial position upon adoption, and no adjustment was made to Retained earnings in our consolidated balance sheets because such adjustment was determined to be immaterial. In addition, new presentation requirements, including separate disclosure of net sales from sources other than customers on our consolidated statements of income and separate disclosures of contract assets or liabilities on our consolidated balance sheets, generally did not have a material impact. However, business circumstances, including the nature of customer contracts, can change and as such, we have expanded processes and controls to recognize such changes, and as necessary, consider whether any of these currently immaterial items might differ in the future.

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services, and is recognized when performance obligations are satisfied under the terms of contracts with our customers. A performance obligation is deemed to be satisfied when control of the product or service is transferred to our customer. The transaction price of a contract, or the amount we expect to receive upon satisfaction of all performance obligations, is determined by reference to the contract’s terms and includes adjustments, if applicable, for any variable consideration, such as customer rebates, noncash consideration or consideration payable to the customer, although these adjustments are generally not material. Where a contract contains more than one distinct performance obligation, the transaction price is allocated to each performance obligation based on the standalone selling price of each performance obligation, although these situations do not occur frequently and are generally not built into our contracts. Any unsatisfied performance obligations are not material. Standalone selling prices are based on prices we charge to our customers, which in some cases is based on established market prices. Sales and other similar taxes collected from customers on behalf of third parties are excluded from revenue. Our payment terms are generally between 30 to 90 days, however, they vary by market factors, such as customer size, creditworthiness, geography and competitive environment.

All of our revenue is derived from contracts with customers, and almost all of our contracts with customers contain one performance obligation for the transfer of goods where such performance obligation is satisfied at a point in time. Control of a product is deemed to be transferred to the customer upon shipment or delivery. Significant portions of our sales are sold free on board shipping point or on an equivalent basis, while delivery terms of other transactions are based upon specific contractual arrangements. Our standard terms of delivery are generally included in our contracts of sale, order confirmation documents and invoices, while the timing between shipment and delivery generally ranges between 1 and 45 days. Costs for shipping and

handling activities, whether performed before or after the customer obtains control of the goods, are accounted for as fulfillment costs.

The Company currently utilizes the following practical expedients, as permitted by Accounting Standards Codification (“ASC”) 606, *Revenue from Contracts with Customers*:

- All sales and other pass-through taxes are excluded from contract value;
- In utilizing the modified retrospective transition method, no adjustment was necessary for contracts that did not cross over the reporting year;
- We will not consider the possibility of a contract having a significant financing component (which would effectively attribute a portion of the sales price to interest income) unless, if at contract inception, the expected payment terms (from time of delivery or other relevant criterion) are more than one year;
- If our right to customer payment is directly related to the value of our completed performance, we recognize revenue consistent with the invoicing right; and
- We expense as incurred all costs of obtaining a contract incremental to any costs/compensation attributable to individual product sales/shipments for contracts where the amortization period for such costs would otherwise be one year or less.

Certain products we produce are made to our customer’s specifications where such products have limited alternative use or would need significant rework costs in order to be sold to another customer. In management’s judgment, control of these arrangements is transferred to the customer at a point in time (upon shipment or delivery) and not over the time they are produced. Therefore revenue is recognized upon shipment or delivery of these products.

Costs incurred to obtain contracts with customers are not significant and are expensed immediately as the amortization period would be one year or less. When the Company incurs pre-production or other fulfillment costs in connection with an existing or specific anticipated contract and such costs are recoverable through margin or explicitly reimbursable, such costs are capitalized and amortized to Cost of goods sold on a systematic basis that is consistent with the pattern of transfer to the customer of the goods or services to which the asset relates, which is less than one year. We record bad debt expense in specific situations when we determine the customer is unable to meet its financial obligation.

Included in Trade accounts receivable at December 31, 2019 and 2018 is approximately \$602.1 million and \$590.3 million, respectively, arising from contracts with customers. The remaining balance of Trade accounts receivable at December 31, 2019 and 2018 primarily includes value-added taxes collected from customers on behalf of various taxing authorities.

#### *Cash and Cash Equivalents*

Cash and cash equivalents include cash and money market investments with insignificant interest rate risks and no limitations on access.

#### *Inventories*

Inventories are stated at lower of cost and net realizable value with cost determined primarily on the first-in, first-out basis. Cost is determined on the weighted-average basis for a small portion of our inventories at foreign plants and our stores, supplies and other inventory. A portion of our domestic produced finished goods and raw materials are determined on the last-in, first-out basis.

#### *Property, Plant and Equipment*

Property, plant and equipment include costs of assets constructed, purchased or leased under a finance lease, related delivery and installation costs and interest incurred on significant capital projects during their construction periods. Expenditures for renewals and betterments also are capitalized, but expenditures for normal repairs and maintenance are expensed as incurred. Costs associated with yearly planned major maintenance are generally deferred and amortized over 12 months or until the same major maintenance activities must be repeated, whichever is shorter. The cost and accumulated depreciation applicable to assets retired or sold are removed from the respective accounts, and gains or losses thereon are included in income.

We assign the useful lives of our property, plant and equipment based upon our internal engineering estimates which are reviewed periodically. The estimated useful lives of our property, plant and equipment range from two to sixty years and

depreciation is recorded on the straight-line method, with the exception of our mineral rights and reserves, which are depleted on a units-of-production method.

We evaluate the recovery of our property, plant and equipment by comparing the net carrying value of the asset group to the undiscounted net cash flows expected to be generated from the use and eventual disposition of that asset group when events or changes in circumstances indicate that its carrying amount may not be recoverable. If the carrying amount of the asset group is not recoverable, the fair value of the asset group is measured and if the carrying amount exceeds the fair value, an impairment loss is recognized.

#### *Leases*

Effective January 1, 2019, we adopted Accounting Standards Update (“ASU”) No. 2016-02, “Leases” and all related amendments using the modified retrospective method. Adoption of the new standard resulted in the recording of additional net lease assets and lease liabilities of \$139.1 million as of January 1, 2019. Comparative periods have not been restated and are reported in accordance with our historical accounting. The standard did not have an impact on our consolidated Net income or cash flows. In addition, as a result of the adoption of this new standard, we have implemented internal controls and system changes to prepare the financial information.

As part of this adoption, we have elected the practical expedient relief package allowed by the new standard, which does not require the reassessment of (1) whether existing contracts contain a lease, (2) the lease classification or (3) unamortized initial direct costs for existing leases; and have elected to apply hindsight to the existing leases. Additionally, we have made accounting policy elections such as exclusion of short-term leases (leases with a term of 12 months or less and which do not include a purchase option that we are reasonably certain to exercise) from the balance sheet presentation, use of portfolio approach in determination of discount rate and accounting for non-lease components in a contract as part of a single lease component for all asset classes, except specific mining operation equipment.

We determine if an arrangement is a lease at inception. Right-of-use (“ROU”) assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As an implicit rate for most of our leases is not determinable, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. The lease payments for the initial measurement of lease ROU assets and lease liabilities include fixed and variable payments based on an index or a rate. Variable lease payments that are not index or rate based are recorded as expenses when incurred. Our variable lease payments typically include real estate taxes, insurance costs and common-area maintenance. The operating lease ROU asset also includes any lease payments made, net of lease incentives. The lease term is the non-cancelable period of the lease, including any options to extend, purchase or terminate the lease when it is reasonably certain that we will exercise that option. We amortize the operating lease ROU assets on a straight-line basis over the period of the lease and the finance lease ROU assets on a straight-line basis over the shorter of their estimated useful lives or the lease terms. Leases with an initial term of 12 months or less are not recorded on the balance sheet, and we recognize lease expense for these leases on a straight-line basis over the lease term.

#### *Resource Development Expenses*

We incur costs in resource exploration, evaluation and development during the different phases of our resource development projects. Exploration costs incurred before obtaining legal rights to explore an area are generally expensed as incurred. After obtaining legal rights, exploration costs are expensed in areas where we have uncertainty about obtaining proven resources. In areas where we have substantial knowledge about the area and consider it probable to obtain commercially viable proven resources, exploration and evaluation costs are capitalized.

If technical feasibility studies have been obtained, resource evaluation expenses are capitalized when the study demonstrates proven or probable resources for which future economic returns are expected, while costs for projects that are not considered viable are expensed. Development costs that are necessary to bring the property to commercial production or increase the capacity or useful life are capitalized. Costs to maintain the production capacity in a property under production are expensed as incurred.

Capitalized resource costs are depleted using the units-of-production method. Our resource development assets are evaluated for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable.

### *Investments*

Investments are accounted for using the equity method of accounting if the investment gives us the ability to exercise significant influence, but not control, over the investee. Significant influence is generally deemed to exist if we have an ownership interest in the voting stock of the investee between 20% and 50%, although other factors, such as representation on the investee's board of directors and the impact of commercial arrangements, are considered in determining whether the equity method of accounting is appropriate. Under the equity method of accounting, we record our investments in equity-method investees in the consolidated balance sheets as Investments and our share of investees' earnings or losses together with other-than-temporary impairments in value as Equity in net income of unconsolidated investments in the consolidated statements of income. We evaluate our equity method investments for impairment whenever events or changes in circumstances indicate that the carrying amounts of such investments may be impaired. If a decline in the value of an equity method investment is determined to be other than temporary, a loss is recorded in earnings in the current period.

Certain mutual fund investments are accounted for as trading equities and are marked-to-market on a periodic basis through the consolidated statements of income. Investments in joint ventures and nonmarketable securities of immaterial entities are estimated based upon the overall performance of the entity where financial results are not available on a timely basis.

### *Environmental Compliance and Remediation*

Environmental compliance costs include the cost of purchasing and/or constructing assets to prevent, limit and/or control pollution or to monitor the environmental status at various locations. These costs are capitalized and depreciated based on estimated useful lives. Environmental compliance costs also include maintenance and operating costs with respect to pollution prevention and control facilities and other administrative costs. Such operating costs are expensed as incurred. Environmental remediation costs of facilities used in current operations are generally immaterial and are expensed as incurred. We accrue for environmental remediation costs and post-remediation costs that relate to existing conditions caused by past operations at facilities or off-plant disposal sites in the accounting period in which responsibility is established and when the related costs are estimable. In developing these cost estimates, we evaluate currently available facts regarding each site, with consideration given to existing technology, presently enacted laws and regulations, prior experience in remediation of contaminated sites, the financial capability of other potentially responsible parties and other factors, subject to uncertainties inherent in the estimation process. If the amount and timing of the cash payments for a site are fixed or reliably determinable, the liability is discounted, if the calculated discount is material. Additionally, these estimates are reviewed periodically, with adjustments to the accruals recorded as necessary.

### *Research and Development Expenses*

Our research and development expenses related to present and future products are expensed as incurred. These expenses consist primarily of personnel-related costs and other overheads, as well as outside service and consulting costs incurred for specific programs. Our U.S. facilities in Michigan, Pennsylvania, Texas and Louisiana and our global facilities in the Netherlands, Germany, Belgium and Korea form the capability base for our contract research and custom manufacturing businesses. These business areas provide research and scale-up services primarily to innovative life science companies.

### *Goodwill and Other Intangible Assets*

We account for goodwill and other intangibles acquired in a business combination in conformity with current accounting guidance that requires that goodwill and indefinite-lived intangible assets not be amortized.

We test goodwill for impairment by comparing the estimated fair value of our reporting units to the related carrying value. Our reporting units are either our operating business segments or one level below our operating business segments for which discrete financial information is available and for which operating results are regularly reviewed by the business management. We estimate the fair value based on present value techniques involving future cash flows. Future cash flows include assumptions about sales volumes, selling prices, raw material prices, labor and other employee benefit costs, capital additions, income taxes, working capital, and other economic or market-related factors. Significant management judgment is involved in estimating these variables and they include inherent uncertainties since they are forecasting future events. We perform a sensitivity analysis by using a range of inputs to confirm the reasonableness of these estimates being used in the goodwill impairment analysis. We use a Weighted Average Cost of Capital ("WACC") approach to determine our discount rate for goodwill recoverability testing. Our WACC calculation incorporates industry-weighted average returns on debt and equity from a market perspective. The factors in this calculation are largely external to the Company and, therefore, are beyond our control. We test our recorded goodwill for impairment in the fourth quarter of each year or upon the occurrence of events or changes in circumstances that would more likely than not reduce the fair value of our reporting units below their carrying



amounts. The Company performed its annual goodwill impairment test as of October 31, 2019 and concluded there was no impairment as of that date. In addition, no material indications of impairment in any of our reporting units were indicated by the sensitivity analysis.

We assess our indefinite-lived intangible assets, which include trade names and trademarks, for impairment annually and between annual tests if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. The indefinite-lived intangible asset impairment standard allows us to first assess qualitative factors to determine if a quantitative impairment test is necessary. Further testing is only required if we determine, based on the qualitative assessment, that it is more likely than not that the indefinite-lived intangible asset's fair value is less than its carrying amount. If we determine based on the qualitative assessment that it is more likely than not that the asset is impaired, an impairment test is performed by comparing the fair value of the indefinite-lived intangible asset to its carrying amount.

Definite-lived intangible assets, such as purchased technology, patents and customer lists, are amortized over their estimated useful lives generally for periods ranging from five to twenty-five years. Except for customer lists and relationships associated with the majority of our Lithium business, which are amortized using the pattern of economic benefit method, definite-lived intangible assets are amortized using the straight-line method. We evaluate the recovery of our definite-lived intangible assets by comparing the net carrying value of the asset group to the undiscounted net cash flows expected to be generated from the use and eventual disposition of that asset group when events or changes in circumstances indicate that its carrying amount may not be recoverable. If the carrying amount of the asset group is not recoverable, the fair value of the asset group is measured and if the carrying amount exceeds the fair value, an impairment loss is recognized. See Note 12, "Goodwill and Other Intangibles."

#### *Pension Plans and Other Postretirement Benefits*

Under authoritative accounting standards, assumptions are made regarding the valuation of benefit obligations and the performance of plan assets. As required, we recognize a balance sheet asset or liability for each of our pension and other postretirement benefit ("OPEB") plans equal to the plan's funded status as of the measurement date. The primary assumptions are as follows:

- **Discount Rate**—The discount rate is used in calculating the present value of benefits, which is based on projections of benefit payments to be made in the future.
- **Expected Return on Plan Assets**—We project the future return on plan assets based on prior performance and future expectations for the types of investments held by the plans, as well as the expected long-term allocation of plan assets for these investments. These projected returns reduce the net benefit costs recorded currently.
- **Rate of Compensation Increase**—For salary-related plans, we project employees' annual pay increases, which are used to project employees' pension benefits at retirement.
- **Mortality Assumptions**—Assumptions about life expectancy of plan participants are used in the measurement of related plan obligations.

Actuarial gains and losses are recognized annually in our consolidated statements of income in the fourth quarter and whenever a plan is determined to qualify for a remeasurement during a fiscal year. The remaining components of pension and OPEB plan expense, primarily service cost, interest cost and expected return on assets, are recorded on a monthly basis. The market-related value of assets equals the actual market value as of the date of measurement.

During 2019, we made changes to assumptions related to discount rates and expected rates of return on plan assets. We consider available information that we deem relevant when selecting each of these assumptions.

In selecting the discount rates for the U.S. plans, we consider expected benefit payments on a plan-by-plan basis. As a result, the Company uses different discount rates for each plan depending on the demographics of participants and the expected timing of benefit payments. For 2019, the discount rates were calculated using the results from a bond matching technique developed by Milliman, which matched the future estimated annual benefit payments of each respective plan against a portfolio of bonds of high quality to determine the discount rate. We believe our selected discount rates are determined using preferred methodology under authoritative accounting guidance and accurately reflect market conditions as of the December 31, 2019 measurement date.

In selecting the discount rates for the foreign plans, we look at long-term yields on AA-rated corporate bonds when available. Our actuaries have developed yield curves based on the yields on the constituent bonds in the various indices as well as on other market indicators such as swap rates, particularly at the longer durations. For the Eurozone, we apply the Aon Hewitt yield curve to projected cash flows from the relevant plans to derive the discount rate. For the United Kingdom ("U.K."), the discount rate is determined by applying the Aon Hewitt yield curve for typical schemes of similar duration to

projected cash flows of Albemarle's U.K. plan. In other countries where there is not a sufficiently deep market of high-quality corporate bonds, we set the discount rate by referencing the yield on government bonds of an appropriate duration.

In estimating the expected return on plan assets, we consider past performance and future expectations for the types of investments held by the plan as well as the expected long-term allocation of plan assets to these investments. In projecting the rate of compensation increase, we consider past experience in light of movements in inflation rates.

In October 2018, the Society of Actuaries ("SOA") published an updated Mortality Improvement Scale, MP-2018. The updated improvement scale incorporates an additional year of mortality data (2016). We utilized the same base mortality, SOA RP-2014 Adjusted to 2006 Total Dataset Mortality, but we revised our mortality assumption to incorporate the MP-2018 Mortality Improvement Scale for purposes of measuring our U.S. pension and OPEB obligations at December 31, 2018. In October 2019, the SOA published the Pri-2012 Mortality Tables and an updated Improvement Scale, MP-2019. The Pri-2012 Mortality Tables are an update to the RP-2014 Adjusted to 2006 Total Dataset Mortality while the updated improvement scale incorporates an additional year of mortality data (2017). We revised both the base mortality tables and mortality improvement assumption by incorporating both the Pri-2012 Mortality Tables and MP-2019 Mortality Improvement Scale for purpose of measuring our U.S. pension and OPEB obligations at December 31, 2019.

#### *Stock-based Compensation Expense*

The fair value of restricted stock awards, restricted stock unit awards and performance unit awards with a service condition are determined based on the number of shares or units granted and the quoted price of our common stock on the date of grant, and the fair value of stock options is determined using the Black-Scholes valuation model. The fair value of performance unit awards with a service condition and a market condition are estimated on the date of grant using a Monte Carlo simulation model. The fair value of these awards is determined after giving effect to estimated forfeitures. Such value is recognized as expense over the service period, which is generally the vesting period of the equity grant. To the extent restricted stock awards, restricted stock unit awards, performance unit awards and stock options are forfeited prior to vesting in excess of the estimated forfeiture rate, the corresponding previously recognized expense is reversed as an offset to operating expenses.

#### *Income Taxes*

We use the liability method for determining our income taxes, under which current and deferred tax liabilities and assets are recorded in accordance with enacted tax laws and rates. Under this method, the amounts of deferred tax liabilities and assets at the end of each period are determined using the tax rate expected to be in effect when taxes are actually paid or recovered. Future tax benefits are recognized to the extent that realization of such benefits is more likely than not. In order to record deferred tax assets and liabilities, we are following guidance under Financial Accounting Standards Board ("FASB") ASU 2015-17, which requires deferred tax assets and liabilities to be classified as noncurrent on the balance sheet, along with any related valuation allowance. Tax effects are released from Accumulated Other Comprehensive Income using either the specific identification approach or the portfolio approach based on the nature of the underlying item.

Deferred income taxes are provided for the estimated income tax effect of temporary differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities. Deferred tax assets are also provided for operating losses, capital losses and certain tax credit carryovers. A valuation allowance, reducing deferred tax assets, is established when it is more likely than not that some portion or all of the deferred tax assets will not be realized. The realization of such deferred tax assets is dependent upon the generation of sufficient future taxable income of the appropriate character. Although realization is not assured, we do not establish a valuation allowance when we believe it is more likely than not that a net deferred tax asset will be realized.

We only recognize a tax benefit after concluding that it is more likely than not that the benefit will be sustained upon audit by the respective taxing authority based solely on the technical merits of the associated tax position. Once the recognition threshold is met, we recognize a tax benefit measured as the largest amount of the tax benefit that, in our judgment, is greater than 50% likely to be realized. Under current accounting guidance for uncertain tax positions, interest and penalties related to income tax liabilities are included in Income tax expense on the consolidated statements of income.

We have designated the undistributed earnings of a portion of our foreign operations as indefinitely reinvested and as a result we do not provide for deferred income taxes on the unremitted earnings of these subsidiaries. Our foreign earnings are computed under U.S. federal tax earnings and profits, or E&P, principles. In general, to the extent our financial reporting book basis over tax basis of a foreign subsidiary exceeds these E&P amounts, deferred taxes have not been provided as they are essentially permanent in duration. The determination of the amount of such unrecognized deferred tax liability is not practicable. We provide for deferred income taxes on our undistributed earnings of foreign operations that are not deemed to be

indefinitely invested. We will continue to evaluate our permanent investment assertion taking into consideration all relevant and current tax laws.

On December 22, 2017, the Tax Cuts and Jobs Act (“TCJA”) was signed into law in the U.S. The TCJA contains several key tax provisions including, among other things, the reduction of the corporate income tax rate from 35% to 21% effective January 1, 2018, the requirement of companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, and the creation of new taxes on certain foreign sourced earnings such as global intangible low-taxed income (“GILTI”). A company can elect an accounting policy to account for GILTI as a period charge in the future period the tax arises or as part of deferred taxes related to the investment or subsidiary. The Company has elected to account for GILTI as a period cost.

#### *Accumulated Other Comprehensive Loss*

Accumulated other comprehensive loss comprises principally foreign currency translation adjustments, amounts related to the revaluation of our euro-denominated senior notes which were designated as a hedge of our net investment in foreign operations in 2014, a realized loss on a forward starting interest rate swap entered into in 2014 which was designated as a cash flow hedge, gains or losses on foreign currency cash flow hedges designated as effective hedging instruments, and deferred income taxes related to the aforementioned items.

#### *Foreign Currency Translation*

The assets and liabilities of all foreign subsidiaries were prepared in their respective functional currencies and translated into U.S. Dollars based on the current exchange rate in effect at the balance sheet dates, while income and expenses were translated at average exchange rates for the periods presented. Translation adjustments are reflected as a separate component of equity.

Foreign exchange transaction and revaluation losses were \$27.4 million, \$10.5 million and \$11.1 million for the years ended December 31, 2019, 2018 and 2017, respectively, and are included in Other expenses, net, in our consolidated statements of income, with the unrealized portion included in Other, net, in our consolidated statements of cash flows.

#### *Derivative Financial Instruments*

We manage our foreign currency exposures by balancing certain assets and liabilities denominated in foreign currencies and through the use of foreign currency forward contracts from time to time, which generally expire within one year. The principal objective of such contracts is to minimize the financial impact of changes in foreign currency exchange rates. While these contracts are subject to fluctuations in value, such fluctuations are generally expected to be offset by changes in the value of the underlying foreign currency exposures being hedged. Gains or losses under foreign currency forward contracts that have been designated as an effective hedging instrument under ASC 815, *Derivatives and Hedging* will be recorded in Accumulated other comprehensive loss beginning on the date of designation. All other gains and losses on foreign currency forward contracts not designated as an effective hedging instrument are recognized currently in Other expenses, net, and generally do not have a significant impact on results of operations.

We may also enter into interest rate swaps, collars or similar instruments from time to time, with the objective of reducing interest rate volatility relating to our borrowing costs.

The counterparties to these contractual agreements are major financial institutions with which we generally have other financial relationships. We are exposed to credit loss in the event of nonperformance by these counterparties. However, we do not anticipate nonperformance by the counterparties. We do not utilize financial instruments for trading or other speculative purposes. In the fourth quarter of 2019, we entered into a foreign currency forward contract to hedge the cash flow exposure of non-functional currency purchases during the construction of the Kemerton plant in Australia and designated it as an effective hedging instrument under ASC 815, *Derivatives and Hedging*. All other foreign currency forward contracts outstanding at December 31, 2019 and 2018 have not been designated as hedging instruments under ASC 815, *Derivatives and Hedging*.

#### *Recently Issued Accounting Pronouncements*

In February 2016, the FASB issued accounting guidance that requires assets and liabilities arising from leases to be recorded on the balance sheet. Additional disclosures are required regarding the amount, timing, and uncertainty of cash flows from leases. In July 2018, the FASB issued an amendment which would allow entities to initially apply this new standard at the adoption date and recognize a cumulative effect adjustment to the opening balance of Retained earnings. The Company adopted this standard on January 1, 2019 using this transition method. See Note 18, “Leases,” for further details.

In June 2016, the FASB issued accounting guidance that, among other things, changes the way entities recognize impairment of financial assets by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of the financial asset. Additional disclosures are required regarding an entity's assumptions, models and methods for estimating the expected credit loss. This guidance will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years, and is to be applied using a modified retrospective approach. Early adoption is permitted. We adopted this guidance on January 1, 2020 and it did not have a significant impact on our consolidated financial statements.

In January 2017, the FASB issued accounting guidance to simplify the accounting for goodwill impairment. The guidance removes Step 2 of the goodwill impairment test, which requires a reporting unit to calculate the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit has been acquired in a business combination. A goodwill impairment will now be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. All other goodwill impairment guidance will remain unchanged. Entities will continue to have the option to perform a qualitative assessment to determine if a quantitative impairment test is necessary. This guidance will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years, and is to be applied on a prospective basis. Early adoption is permitted for goodwill impairment tests performed after January 1, 2017. We adopted this guidance on January 1, 2020 and it did not have a significant impact on our consolidated financial statements.

In August 2017, the FASB issued accounting guidance to better align an entity's risk management activities with hedge accounting, simplify the application of hedge accounting, and increase transparency as to the scope and results of hedging programs. This guidance will make more financial and nonfinancial hedging strategies eligible for hedge accounting. It also amends the presentation and disclosure requirements and changes how companies assess effectiveness. In October 2018, the FASB issued additional guidance that permits the use of the Overnight Index Swap Rate based on the Secured Overnight Financing Rate as a U.S. benchmark interest rate for hedge accounting purposes under ASC 815, *Derivatives and Hedging*. These new requirements became effective on January 1, 2019 and did not have a significant impact on our consolidated financial statements.

In August 2018, the FASB issued accounting guidance that requires implementation costs incurred in a cloud computing arrangement that is a service contract to be capitalized. Entities will be required to recognize the capitalized implementation costs to expense over the noncancellable term of the cloud computing arrangement. As allowed by its provisions, we early-adopted this new guidance in the first quarter of 2019. The adoption of this new guidance did not have a significant impact on our consolidated financial statements.

#### **NOTE 2—Acquisitions:**

On October 31, 2019 (the "Acquisition Closing Date"), we completed the previously announced acquisition of a 60% interest in MRL's Wodgina Project for a total purchase price of approximately \$1.3 billion. The purchase price is comprised of \$820 million in cash, subject to certain adjustments capped at \$22.5 million, and the transfer of 40% interest in certain lithium hydroxide conversion assets being built by Albemarle in Kemerton, Western Australia, valued at \$480 million. The cash consideration was initially funded by the 2019 Credit Facility entered into on August 14, 2019; see Note 14, "Long-Term Debt," for further details.

In addition, we have formed an unincorporated joint venture with MRL, MARBL, for the exploration, development, mining, processing and production of lithium and other minerals (other than iron ore and tantalum) from the Wodgina Project and for the operation of the Kemerton assets. We are entitled to a pro rata portion of 60% of all minerals (other than iron ore and tantalum) recovered from the tenements and produced by the joint venture. The joint venture is unincorporated with each investor holding an undivided interest in each asset and proportionately liable for each liability; therefore our proportionate share of assets, liabilities, revenue and expenses are included in the appropriate classifications in the consolidated financial statements. As part of this acquisition, MARBL Lithium Operations Pty. Ltd. (the "Manager"), an incorporated joint venture, has been formed to manage the Wodgina Project. We will consolidate our 60% ownership interest in the Manager in our consolidated financial statements.

This acquisition provides access to a high-quality hard rock lithium source, further diversifying our global lithium resource base, and strengthens our position by increasing capacity to support future market demand. In the short-term, we will idle production of the Wodgina Project until market conditions support production economics.

The results of our 60% ownership interest in MARBL are reported within the Lithium segment. Included in Net income attributable to Albemarle Corporation for the year ended December 31, 2019 is a loss of approximately \$73.0 million

attributable to the joint venture from November 1, 2019 through December 31, 2019. There were no net sales attributable to the joint venture during this period. Included in Cost of goods sold and Selling, general and administrative expenses on our consolidated statements of income for the year ended December 31, 2019 is \$1.0 million and \$7.5 million, respectively, of costs directly related to this acquisition, primarily consisting of professional services and advisory fees, and \$64.8 million of costs, included in Selling, general and administrative expenses, related to stamp duties levied on the assets purchased, with the unpaid balance recorded in Accrued expenses as of December 31, 2019. Pro forma financial information of the combined entities for periods prior to the acquisition is not presented due to the immaterial impact of the Net Sales and Net Income of the Wodgina Project on our consolidated statements of income.

#### *Preliminary Purchase Price Allocation*

The aggregate purchase price noted above was allocated to the major categories of assets and liabilities acquired based upon their estimated fair values at the Acquisition Closing Date, which were based, in part, upon third-party appraisals for certain assets. The excess of the purchase price over the preliminary estimated fair value of the net assets acquired was approximately \$31.8 million and was recorded as Goodwill.

The following table summarizes the consideration paid for the joint venture and the amounts of the assets acquired and liabilities assumed as of the acquisition date, which have been allocated on a preliminary basis (in thousands):

<b>Total purchase price:</b>	
Cash paid	\$ 820,000
Fair value of 40% interest in Kemerton assets	480,000
Purchase agreement completion adjustment and other adjustments	23,566
Total purchase price	<u>\$ 1,323,566</u>
<b>Net assets acquired:</b>	
Inventories	\$ 33,900
Other current assets	10,695
Property, plant and equipment:	
Buildings and improvements	22,200
Machinery and equipment	163,806
Mineral rights and reserves	1,046,300
Construction in progress	103,700
Other assets	1,000
Current liabilities	(10,695)
Long-term debt <sup>(a)</sup>	(55,806)
Other noncurrent liabilities	(23,296)
Total identifiable net assets	<u>1,291,804</u>
Goodwill	31,762
Total net assets acquired	<u>\$ 1,323,566</u>

(a) Represents 60% ownership interest in finance lease acquired. See Note 18, "Leases," for further information on the Company's leases.

The allocation of the purchase price to the assets acquired and liabilities assumed, including the residual amount allocated to Goodwill, is based upon preliminary information and is subject to change within the measurement-period (up to one year from the acquisition date) as additional information concerning final asset and liability valuations is obtained. The primary areas of the preliminary purchase price allocation that are not yet finalized relate to the fair value of Mineral rights and reserves and Goodwill. The fair value of the assets acquired and liabilities assumed are based on management's preliminary estimates and assumptions, as well as other information compiled by management, including valuations that utilize customary valuation procedures and techniques. The fair value of the mineral reserves of \$1,005.3 million is determined using an excess earnings approach, which requires management to estimate future cash flows, net of capital investments in the specific operation. Management's cash flow projections involved the use of significant estimates and assumptions with respect to the expected production of the mine over the estimated time period, sales prices, shipment volumes, and expected profit margins. The present value of the projected net cash flows represents the preliminary fair value assigned to mineral reserves. The discount rate is a significant assumption used in the valuation model.

While the Company believes that such preliminary estimates provide a reasonable basis for estimating the fair value of assets acquired and liabilities assumed, it will evaluate any necessary information prior to finalization of the amounts. During the measurement-period, the Company will adjust assets or liabilities if new information is obtained about facts and circumstances that existed as of the acquisition date that, if known, would have resulted in revised estimated values of those assets or liabilities as of that date. The effect of measurement-period adjustments to the estimated fair values will be recognized in the reporting period in which they are determined. The impact of all changes that do not qualify as measurement-period adjustments will be included in current period earnings. If the actual results differ from the estimates and judgments used in these fair values, the amounts recorded in the consolidated financial statements could be subject to possible impairment.

Goodwill arising from the acquisition consists largely of anticipated synergies and economies of scale from the combined companies and overall strategic importance of the acquired businesses to Albemarle. The goodwill attributable to the acquisition will not be amortizable or deductible for tax purposes.

#### Other Acquisitions

On February 1, 2017, the Company acquired the remaining 50% interest in the Sales de Magnesio Ltda. (“Salmag”) joint venture in Chile from SQM Salar S.A. for approximately \$8.3 million, net of cash acquired. In connection with the acquisition, the Company recorded a gain of \$6.2 million, calculated based on the difference between the purchase price and the book value of the investment in Other expenses, net on the consolidated statements of income for the year ended December 31, 2017.

Acquisition and integration related costs for the year ended December 31, 2019 of \$1.0 million and \$19.7 million were included in Cost of goods sold and Selling, general and administrative expenses, respectively, on our consolidated statements of income relating to various significant projects, including the acquisition of the Wodgina Project. Included in acquisition and integration related costs on our consolidated statements of income for the years ended December 31, 2018 and 2017 is \$3.7 million and \$14.3 million, respectively, in Cost of goods sold and \$15.7 million and \$19.6 million, respectively, in Selling, general and administrative expenses. These acquisition and integration related costs relate to various significant projects, including the Jiangxi Jiangli New Materials Science and Technology Co. Ltd. (“Jiangli New Materials”) acquisition, which contains non-routine compensation related costs negotiated specifically as a result of this acquisition that are outside of the Company’s ordinary compensation arrangements.

#### NOTE 3—Divestitures:

##### Polyolefin Catalysts and Components Business

On December 14, 2017, the Company signed a definitive agreement to sell the polyolefin catalysts and components portion of its Performance Catalyst Solutions (“PCS”) business (“Polyolefin Catalysts Divestiture”) to W.R. Grace & Co., with the sale closing on April 3, 2018. We received net cash proceeds of approximately \$413.6 million and have recorded a gain of \$210.4 million before income taxes in 2018 related to the sale of this business. The transaction included Albemarle’s Product Development Center located in Baton Rouge, Louisiana, and operations at its Yeosu, South Korea site. The sale did not include the Company’s organometallics or curatives portion of its PCS business. The Polyolefin Catalysts Divestiture reflects the Company’s commitment to investing in the future growth of its high priority businesses and returning capital to shareholders.

#### NOTE 4—Supplemental Cash Flow Information:

Supplemental information related to the consolidated statements of cash flows is as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
<b>Cash paid during the year for:</b>			
Income taxes (net of refunds of \$7,438, \$21,459 and \$17,522 in 2019, 2018 and 2017, respectively) <sup>(a)</sup>	\$ 170,450	\$ 157,758	\$ 320,222
Interest (net of capitalization)	\$ 45,532	\$ 49,762	\$ 61,243
<b>Supplemental non-cash disclosures related to investing activities:</b>			
Capital expenditures included in Accounts payable	\$ 199,451	\$ 134,784	\$ 89,188

(a) Includes approximately \$41 million of income taxes paid in 2018 from the gain on sale of the Polyolefin Catalysts Divestiture, and \$257 million of income taxes paid in 2017 from the gain on sale of the Chemetall Surface Treatment business.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

As part of the purchase price paid for the acquisition of a 60% interest in MRL's Wodgina Project, the Company transferred \$164.7 million of its construction in progress of the designated Kemerton assets during the year ended December 31, 2019, representing MRL's 40% interest in the assets. The cash outflow for these assets is recorded in Capital expenditures within Cash flows from investing activities on the consolidated statements of cash flows. The Company expects to transfer a total of approximately \$480 million over the construction of these assets, as defined in the purchase agreement. See Note 2, "Acquisitions," for further details.

Other, net within Cash flows from operating activities on the consolidated statements of cash flows for the years ended December 31, 2019 and 2018 included \$14.3 million and \$28.4 million, respectively, representing the reclassification of the current portion of the one-time transition tax resulting from the enactment of the TCJA, from Other noncurrent liabilities to Income taxes payable within current liabilities. Included in Other, net for the year ended December 31, 2017 is \$394.9 million related to the noncurrent portion of the one-time transition tax resulting from the enactment of the TCJA. For additional information, see Note 21, "Income Taxes." In addition, included in Other, net for the years ended December 31, 2019, 2018 and 2017 is \$27.4 million, \$10.5 million and \$11.1 million, respectively, related to losses on fluctuations in foreign currency exchange rates.

**NOTE 5—Earnings Per Share:**

Basic and diluted earnings per share are calculated as follows (in thousands, except per share amounts):

	Year Ended December 31,		
	2019	2018	2017
<b>Basic earnings per share</b>			
Numerator:			
Net income attributable to Albemarle Corporation	\$ 533,228	\$ 693,562	\$ 54,850
Denominator:			
Weighted-average common shares for basic earnings per share	105,949	108,427	110,914
Basic earnings per share	\$ 5.03	\$ 6.40	\$ 0.49
<b>Diluted earnings per share</b>			
Numerator:			
Net income attributable to Albemarle Corporation	\$ 533,228	\$ 693,562	\$ 54,850
Denominator:			
Weighted-average common shares for basic earnings per share	105,949	108,427	110,914
Incremental shares under stock compensation plans	372	1,031	1,466
Weighted-average common shares for diluted earnings per share	106,321	109,458	112,380
Diluted earnings per share	\$ 5.02	\$ 6.34	\$ 0.49

At December 31, 2019, there were 214,904 common stock equivalents not included in the computation of diluted earnings per share because their effect would have been anti-dilutive.

Included in the calculation of basic earnings per share are unvested restricted stock awards that contain nonforfeitable rights to dividends. At December 31, 2019, there were 18,100 unvested shares of restricted stock awards outstanding.

We have the authority to issue 15 million shares of preferred stock in one or more classes or series. As of December 31, 2019, no shares of preferred stock have been issued.

In November 2016, our Board of Directors authorized an increase in the number of shares the Company is permitted to repurchase under our share repurchase program, pursuant to which the Company is now permitted to repurchase up to a maximum of 15 million shares, including those previously authorized but not yet repurchased.

Under our existing Board authorized share repurchase program, during 2018, the Company entered into two separate accelerated share repurchase ("ASR") agreements with financial institutions. Under each ASR agreement, the Company paid \$250 million from available cash on hand. Under the terms of the first ASR agreement, which was completed on September 28, 2018, the Company received and retired a total of 2,680,704 shares, calculated based on the daily Rule 10b-18 volume-weighted average prices of the Company's common stock over the term of the ASR agreement, less an agreed discount. Under the terms of the second ASR agreement, which was completed on December 7, 2018, the company received and retired a total of 2,581,950 shares, calculated based on the daily Rule 10b-18 weighted average prices of the Company's common stock over

the terms of the ASR agreement, less an agreed discount. The Company determined that each ASR agreement met the criteria to be accounted for as a forward contract indexed to its stock and was therefore treated as an equity instrument. In total, we received and retired 5,262,654 shares under these agreements, which reduced the Company's weighted average shares outstanding for purposes of calculating basic and diluted earnings per share for the year ended December 31, 2018.

Under our existing Board authorized share repurchase program, the Company entered into an ASR agreement with a financial institution on March 1, 2017. Under the ASR agreement, in March 2017, the Company paid \$250 million from available cash on hand and received and retired an initial delivery of 1,948,178 shares of our common stock. Under the terms of the ASR agreement, on June 16, 2017, the transaction was completed and we received and retired a final settlement of 392,905 shares, calculated based on the daily Rule 10b-18 volume-weighted average prices of the Company's common stock over the term of the ASR agreement, less an agreed discount. The Company determined that the ASR agreement met the criteria to be accounted for as a forward contract indexed to its stock and was therefore treated as an equity instrument. In total, we received and retired 2,341,083 shares under the ASR agreement, which reduced the Company's weighted average shares outstanding for purposes of calculating basic and diluted earnings per share for the year ended December 31, 2017.

There were no shares of the Company's common stock repurchased during the year ended December 31, 2019. As of December 31, 2019, there were 7,396,263 remaining shares available for repurchase under the Company's authorized share repurchase program.

#### NOTE 6—Other Accounts Receivable:

Other accounts receivable consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Value added tax/consumption tax	\$ 52,059	\$ 40,480
Other	15,492	11,579
<b>Total</b>	<b>\$ 67,551</b>	<b>\$ 52,059</b>

#### NOTE 7—Inventories:

The following table provides a breakdown of inventories at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Finished goods <sup>(a)</sup>	\$ 495,639	\$ 482,355
Raw materials and work in process <sup>(b)</sup>	205,781	158,290
Stores, supplies and other	67,564	59,895
<b>Total</b>	<b>\$ 768,984</b>	<b>\$ 700,540</b>

(a) Included \$44.3 million and \$104.3 million at December 31, 2019 and 2018, respectively, of chemical grade spodumene in our Lithium segment, most of which is converted to battery-grade products either internally or through our tolling agreements.

(b) Included \$109.3 million and \$71.4 million at December 31, 2019 and 2018, respectively, of work in process in our Lithium segment.

Approximately 10% of our inventories are valued using the last-in, first-out ("LIFO") method at December 31, 2019 and 2018. The portion of our domestic inventories stated on the LIFO basis amounted to \$78.7 million and \$69.2 million at December 31, 2019 and 2018, respectively, which are below replacement cost by approximately \$30.8 million and \$32.8 million, respectively.



**NOTE 8—Other Current Assets:**

Other current assets consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Income tax receivables	\$ 72,246	\$ 40,116
Prepaid expenses	83,637	43,172
Other	6,930	1,502
Total	<u>\$ 162,813</u>	<u>\$ 84,790</u>

**NOTE 9—Property, Plant and Equipment:**

Property, plant and equipment, at cost, consist of the following at December 31, 2019 and 2018 (in thousands):

	Useful Lives (Years)	December 31,	
		2019	2018
Land	—	\$ 116,728	\$ 123,518
Land improvements	10 – 30	83,256	63,349
Buildings and improvements	10 – 50	337,728	251,980
Machinery and equipment <sup>(a)</sup>	2 – 45	3,355,519	2,780,478
Mineral rights and reserves	7 – 60	1,764,067	696,033
Construction in progress	—	1,160,545	883,705
Total		<u>\$ 6,817,843</u>	<u>\$ 4,799,063</u>

- (a) Consists primarily of (1) short-lived production equipment components, office and building equipment and other equipment with estimated lives ranging 2 – 7 years, (2) production process equipment (intermediate components) with estimated lives ranging 8 – 19 years, (3) production process equipment (major unit components) with estimated lives ranging 20 – 29 years, and (4) production process equipment (infrastructure and other) with estimated lives ranging 30 – 45 years.

The cost of property, plant and equipment is depreciated generally by the straight-line method. Depletion of mineral rights is based on the units-of-production method. Depreciation expense, including depletion, amounted to \$183.3 million, \$170.0 million and \$169.5 million during the years ended December 31, 2019, 2018 and 2017, respectively. Interest capitalized on significant capital projects in 2019, 2018 and 2017 was \$30.2 million, \$19.3 million and \$7.4 million, respectively.

**NOTE 10—Investments:**

Investments include our share of unconsolidated joint ventures, nonmarketable securities and marketable equity securities. The following table details our investment balances at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Joint ventures	\$ 534,430	\$ 486,032
Nonmarketable securities	11,746	9,177
Marketable equity securities	33,637	33,513
Total	<u>\$ 579,813</u>	<u>\$ 528,722</u>

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Our ownership positions in significant unconsolidated investments are shown below:

	December 31,		
	2019	2018	2017
* Windfield Holdings Pty. Ltd. - a joint venture with Sichuan Tianqi Lithium Industries, Inc., that mines lithium ore and produces lithium concentrate	49%	49%	49%
* Nippon Aluminum Alkyls - a joint venture with Mitsui Chemicals, Inc. that produces aluminum alkyls	50%	50%	50%
* Nippon Ketjen Company Limited - a joint venture with Sumitomo Metal Mining Company Limited that produces refinery catalysts	50%	50%	50%
* Eurecat S.A. - a joint venture with Axens Group for refinery catalysts regeneration services	50%	50%	50%
* Fábrica Carioca de Catalisadores S.A. - a joint venture with Petrobras Quimica S.A. - PETROQUISA that produces catalysts and includes catalysts research and product development activities	50%	50%	50%

Our investment in the significant unconsolidated joint ventures above amounted to \$513.8 million and \$466.1 million as of December 31, 2019 and 2018, respectively, and the amount included in Equity in net income of unconsolidated investments (net of tax) in the consolidated statements of income totaled \$128.0 million, \$88.8 million and \$86.8 million for the years ended December 31, 2019, 2018 and 2017, respectively. Undistributed earnings attributable to our significant unconsolidated investments represented approximately \$216.9 million and \$159.9 million of our consolidated retained earnings at December 31, 2019 and 2018, respectively. All of the unconsolidated joint ventures in which we have investments are private companies and accordingly do not have a quoted market price available.

The following summary lists the assets, liabilities and results of operations for our significant unconsolidated joint ventures presented herein (in thousands):

	December 31,	
	2019	2018
<b>Summary of Balance Sheet Information:</b>		
Current assets	\$ 473,426	\$ 476,460
Noncurrent assets	1,404,765	1,159,866
Total assets	<u>\$ 1,878,191</u>	<u>\$ 1,636,326</u>
Current liabilities	\$ 201,792	\$ 191,971
Noncurrent liabilities	583,839	422,769
Total liabilities	<u>\$ 785,631</u>	<u>\$ 614,740</u>

	Year Ended December 31,		
	2019	2018	2017
<b>Summary of Statements of Income Information:</b>			
Net sales	\$ 910,891	\$ 829,590	\$ 687,561
Gross profit	\$ 496,150	\$ 456,518	\$ 353,577
Income before income taxes	\$ 384,690	\$ 332,632	\$ 267,805
Net income	<u>\$ 229,733</u>	<u>\$ 225,791</u>	<u>\$ 184,777</u>

We have evaluated each of the unconsolidated investments pursuant to current accounting guidance and none qualify for consolidation. Dividends received from our significant unconsolidated investments were \$71.0 million, \$56.4 million and \$38.1 million in 2019, 2018 and 2017, respectively.

At December 31, 2019 and 2018, the carrying amount of our investments in unconsolidated joint ventures differed from the amount of underlying equity in net assets by approximately \$15.3 million and \$0.4 million, respectively. These amounts represent the differences between the value of certain assets of the joint ventures and our related valuation on a U.S. GAAP basis.

The Company holds a 49% equity interest in Windfield Holdings Pty. Ltd. ("Windfield"), which we acquired in the Rockwood acquisition. With regards to the Company's ownership in Windfield, the parties share risks and benefits

disproportionate to their voting interests. As a result, the Company considers Windfield to be a variable interest entity (“VIE”). However, the Company does not consolidate Windfield as it is not the primary beneficiary. The carrying amount of our 49% equity interest in Windfield, which is our most significant VIE, was \$397.2 million and \$349.6 million at December 31, 2019 and December 31, 2018, respectively. The Company’s aggregate net investment in all other entities which it considers to be VIE’s for which the Company is not the primary beneficiary was \$7.6 million and \$8.1 million at December 31, 2019 and December 31, 2018, respectively. Our unconsolidated VIEs are reported in Investments in the consolidated balance sheets. The Company does not guarantee debt for, or have other financial support obligations to, these entities, and its maximum exposure to loss in connection with its continuing involvement with these entities is limited to the carrying value of the investments.

As part of the original Windfield joint venture agreement, Tianqi Lithium Corporation (“Tianqi”) was granted an option to purchase from 20% to 30% of the equity interests in Rockwood Lithium GmbH, a wholly-owned German subsidiary of Albemarle, and its subsidiaries. In February 2017, Albemarle and Tianqi terminated the option agreement, and as a result, we will retain 100% of the ownership interest in Rockwood Lithium GmbH and its subsidiaries. Following the termination of the option agreement, the \$13.1 million fair value of the option agreement originally recorded in Noncontrolling interests was reversed and recorded as an adjustment to Additional paid-in capital.

The Company holds a 50% equity interest in Jordan Bromine Company Limited (“JBC”), reported in the Bromine Specialties segment. The Company consolidates this venture as it is considered the primary beneficiary due to its operational and financial control.

On October 31, 2019, the Company completed the acquisition of 60% interest in MRL’s Wodgina Project and formed an unincorporated joint venture with MRL. The joint venture is unincorporated with each investor holding an undivided interest in each asset and proportionately liable for each liability; therefore our proportionate share of assets, liabilities, revenue and expenses are included in the appropriate classifications in the consolidated financial statements. See Note 2, “Acquisitions,” for additional information.

We maintain a Benefit Protection Trust (the “Trust”) that was created to provide a source of funds to assist in meeting the obligations of our Executive Deferred Compensation Plan (“EDCP”), subject to the claims of our creditors in the event of our insolvency. Assets of the Trust, in conjunction with our EDCP, are accounted for as trading securities in accordance with authoritative accounting guidance. The assets of the Trust consist primarily of mutual fund investments and are marked-to-market on a monthly basis through the consolidated statements of income. As of December 31, 2019 and 2018, these marketable securities amounted to \$28.7 million and \$26.3 million, respectively.

**NOTE 11—Other Assets:**

Other assets consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Deferred income taxes <sup>(a)</sup>	\$ 15,275	\$ 17,029
Assets related to unrecognized tax benefits <sup>(a)</sup>	26,127	12,984
Operating leases <sup>(b)</sup>	133,864	—
Other <sup>(c)</sup>	37,795	50,122
<b>Total</b>	<b>\$ 213,061</b>	<b>\$ 80,135</b>

(a) See Note 1, “Summary of Significant Accounting Policies” and Note 21, “Income Taxes.”

(b) See Note 18, “Leases.”

(c) As of December 31, 2019 and 2018, a \$28.7 million reserve was recorded against a note receivable on one of our European entities no longer deemed probable of collection.

**NOTE 12—Goodwill and Other Intangibles:**

The following table summarizes the changes in goodwill by reportable segment for the years ended December 31, 2019 and 2018 (in thousands):

	Lithium	Bromine Specialties	Catalysts	All Other	Total
Balance at December 31, 2017	\$ 1,389,089	\$ 20,319	\$ 194,361	\$ 6,586	\$ 1,610,355
Foreign currency translation adjustments and other	(34,310)	—	(8,876)	—	(43,186)
Balance at December 31, 2018	1,354,779	20,319	185,485	6,586	1,567,169
Acquisitions <sup>(a)</sup>	31,762	—	—	—	31,762
Foreign currency translation adjustments and other	(15,695)	—	(4,451)	—	(20,146)
Balance at December 31, 2019	<u>\$ 1,370,846</u>	<u>\$ 20,319</u>	<u>\$ 181,034</u>	<u>\$ 6,586</u>	<u>\$ 1,578,785</u>

(a) Represents preliminary purchase price adjustments for the Wodgina Project acquisition recorded for the year ended December 31, 2019. See Note 2, “Acquisitions,” for additional information.

Other intangibles consist of the following at December 31, 2019 and 2018 (in thousands):

	Customer Lists and Relationships	Trade Names and Trademarks <sup>(a)</sup>	Patents and Technology	Other	Total
<b>Gross Asset Value</b>					
Balance at December 31, 2017	\$ 439,312	\$ 18,981	\$ 61,618	\$ 37,256	\$ 557,167
Foreign currency translation adjustments and other	(10,940)	(528)	(5,817)	6,452	(10,833)
Balance at December 31, 2018	428,372	18,453	55,801	43,708	546,334
Foreign currency translation adjustments and other	(5,910)	(366)	(781)	(2,426)	(9,483)
Balance at December 31, 2019	<u>\$ 422,462</u>	<u>\$ 18,087</u>	<u>\$ 55,020</u>	<u>\$ 41,282</u>	<u>\$ 536,851</u>
<b>Accumulated Amortization</b>					
Balance at December 31, 2017	\$ (74,704)	\$ (8,295)	\$ (35,203)	\$ (17,462)	\$ (135,664)
Amortization	(23,402)	—	(1,450)	(3,127)	(27,979)
Foreign currency translation adjustments and other	2,309	119	1,405	(381)	3,452
Balance at December 31, 2018	(95,797)	(8,176)	(35,248)	(20,970)	(160,191)
Amortization	(23,020)	—	(1,388)	(2,714)	(27,122)
Foreign currency translation adjustments and other	2,068	238	439	2,339	5,084
Balance at December 31, 2019	<u>\$ (116,749)</u>	<u>\$ (7,938)</u>	<u>\$ (36,197)</u>	<u>\$ (21,345)</u>	<u>\$ (182,229)</u>
Net Book Value at December 31, 2018	<u>\$ 332,575</u>	<u>\$ 10,277</u>	<u>\$ 20,553</u>	<u>\$ 22,738</u>	<u>\$ 386,143</u>
Net Book Value at December 31, 2019	<u>\$ 305,713</u>	<u>\$ 10,149</u>	<u>\$ 18,823</u>	<u>\$ 19,937</u>	<u>\$ 354,622</u>

(a) Net Book Value includes only indefinite-lived intangible assets.

Useful lives range from 13 – 25 years for customer lists and relationships; 8 – 20 years for patents and technology; and primarily 5 – 25 years for other.

Amortization of other intangibles amounted to \$27.1 million, \$28.0 million and \$25.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. Included in amortization for the years ended December 31, 2019, 2018 and 2017 is \$19.5 million, \$19.7 million and \$17.7 million, respectively, of amortization using the pattern of economic benefit method.

Total estimated amortization expense of other intangibles for the next five fiscal years is as follows (in thousands):

	Estimated Amortization Expense
2020	\$ 25,356
2021	\$ 24,747
2022	\$ 24,153
2023	\$ 23,586
2024	\$ 22,787

**NOTE 13—Accrued Expenses:**

Accrued expenses consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Employee benefits, payroll and related taxes	\$ 82,028	\$ 77,814
Wodgina Project acquisition consideration obligation <sup>(a)</sup>	260,686	—
Other <sup>(b)</sup>	210,446	179,509
Total	<u>\$ 553,160</u>	<u>\$ 257,323</u>

(a) Represents the 40% interest in the Kemerton assets, which are under construction, expected to be transferred to MRL in the next twelve months as part of the consideration paid for the Wodgina Project acquisition, as well as the \$64.8 million of stamp duties levied on the assets purchased. See Note 2, “Acquisitions,” for further details.

(b) No individual component exceeds 5% of total current liabilities.

**NOTE 14—Long-Term Debt:**

Long-term debt consisted of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
1.125% notes, net of unamortized discount and debt issuance costs of \$5,659 at December 31, 2019	\$ 549,241	\$ —
1.625% notes, net of unamortized discount and debt issuance costs of \$5,696 at December 31, 2019	549,204	—
1.875% Senior notes, net of unamortized discount and debt issuance costs of \$1,831 at December 31, 2019 and \$2,841 at December 31, 2018	434,241	444,155
3.45% Senior notes, net of unamortized discount and debt issuance costs of \$3,533 at December 31, 2019	296,467	—
4.15% Senior notes, net of unamortized discount and debt issuance costs of \$2,398 at December 31, 2019 and \$2,884 at December 31, 2018	422,603	422,116
4.50% Senior notes, net of unamortized discount and debt issuance costs of \$589 at December 31, 2018	—	174,626
5.45% Senior notes, net of unamortized discount and debt issuance costs of \$3,850 at December 31, 2019 and \$4,004 at December 31, 2018	346,150	345,996
Floating rate notes, net of unamortized debt issuance costs of \$1,169 at December 31, 2019	198,831	—
Commercial paper notes	186,700	306,606
Variable-rate foreign bank loans	7,296	7,216
Finance lease obligations	59,524	4,495
Total long-term debt	<u>3,050,257</u>	<u>1,705,210</u>
Less amounts due within one year	<u>187,336</u>	<u>307,294</u>
Long-term debt, less current portion	<u>\$ 2,862,921</u>	<u>\$ 1,397,916</u>

Aggregate annual maturities of long-term debt as of December 31, 2019 are as follows (in millions): 2020—\$187.3; 2021—\$436.1; 2022—\$200.0; 2023—\$0.0; 2024—\$425.0; thereafter—\$1,826.0.

## 2019 Notes

On November 25, 2019, we issued a series of notes (collectively, the “2019 Notes”) as follows:

- \$200.0 million aggregate principal amount of notes, bearing interest at a floating rate payable quarterly on February 15, May 15, August 15 and November 15 of each year, beginning in 2020 (“Floating Rate Notes”), with the interest rate reset on each interest payment date. Borrowings under these notes bear interest at a floating rate based on the 3-month London inter-bank offered rate (“LIBOR”) plus 105 basis points. The floating interest rate for the initial interest period is 2.9595%. These notes mature on November 15, 2022.
- €500.0 million aggregate principal amount of notes, bearing interest at a rate of 1.125% payable annually on November 25 of each year, beginning in 2020. The effective interest rate on these notes is approximately 1.30%. These notes mature on November 25, 2025.
- €500.0 million aggregate principal amount of notes, bearing interest at a rate of 1.625% payable annually on November 25 of each year, beginning in 2020. The effective interest rate on these notes is approximately 1.74%. These notes mature on November 25, 2028.
- \$300.0 million aggregate principal amount of senior notes, bearing interest at a rate of 3.45% payable semi-annually on May 15 and November 15 of each year, beginning in 2020. The effective interest rate on these senior notes is approximately 3.58%. These senior notes mature on November 15, 2029.

The net proceeds from the issuance of the 2019 Notes were used to repay the \$1.0 billion balance of the 2019 Credit Facility (see below for further details), a large portion of approximately \$370 million of commercial paper notes, the remaining balance of \$175.2 million of the senior notes issued on December 10, 2010 (“2010 Senior Notes”), and for general corporate purposes. The 2010 Senior Notes were originally due to mature on December 15, 2020 and bore interest at a rate of 4.50%. During the year ended December 31, 2019, we recorded a loss on early extinguishment of debt of \$4.8 million in Interest and financing expenses, representing the tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of the 2010 Senior Notes.

## 2014 Senior Notes

We currently have the following senior notes outstanding, initially issued in the fourth quarter of 2014:

- €393.0 million aggregate principal amount of senior notes, issued on December 8, 2014, bearing interest at a rate of 1.875% payable annually on December 8 of each year, beginning in 2015. The effective interest rate on these senior notes is approximately 2.10%. These senior notes mature on December 8, 2021.
- \$425.0 million aggregate principal amount of senior notes, issued on November 24, 2014, bearing interest at a rate of 4.15% payable semi-annually on June 1 and December 1 of each year, beginning June 1, 2015. The effective interest rate on these senior notes is approximately 5.06%. These senior notes mature on December 1, 2024.
- \$350.0 million aggregate principal amount of senior notes, issued on November 24, 2014, bearing interest at a rate of 5.45% payable semi-annually on June 1 and December 1 of each year, beginning June 1, 2015. The effective interest rate on these senior notes is approximately 5.50%. These senior notes mature on December 1, 2044.

On January 22, 2014, we entered into a pay fixed, receive variable rate forward starting interest rate swap, with a notional amount of \$325.0 million, with J.P. Morgan Chase Bank, N.A., to be effective October 15, 2014. Our risk management objective and strategy for undertaking this hedge was to eliminate the variability in the interest rate and partial credit spread on the 20 future semi-annual coupon payments that we will pay in connection with our 4.15% senior notes. On October 15, 2014, the swap was settled, resulting in a payment to the counterparty of \$33.4 million. This amount was recorded in Accumulated other comprehensive loss and is being amortized to interest expense over the life of the 4.15% senior notes. The amount to be reclassified to interest expense from Accumulated other comprehensive loss during the next twelve months is approximately \$3.3 million.

On December 18, 2014, the carrying value of the 1.875% Euro-denominated senior notes was designated as an effective hedge of our net investment in foreign subsidiaries where the Euro serves as the functional currency, and beginning on the date of designation, gains or losses on the revaluation of these senior notes to our reporting currency have been and will be recorded in Accumulated other comprehensive loss. During the years ended December 31, 2019, 2018 and 2017, gains (losses) of \$8.4 million, \$25.8 million and (\$41.8) million (net of income taxes), respectively, were recorded in Accumulated other comprehensive loss in connection with the revaluation of these senior notes to our reporting currency.

### *Credit Agreements*

Our revolving, unsecured credit agreement dated as of June 21, 2018, as amended on August 14, 2019 (the “2018 Credit Agreement”), currently provides for borrowings of up to \$1.0 billion and matures on August 9, 2024. Borrowings under the 2018 Credit Agreement bear interest at variable rates based on an average LIBOR for deposits in the relevant currency plus an applicable margin which ranges from 0.910% to 1.500%, depending on the Company’s credit rating from Standard & Poor’s Ratings Services LLC (“S&P”), Moody’s Investors Services, Inc. (“Moody’s”) and Fitch Ratings, Inc. (“Fitch”). The applicable margin on the facility was 1.125% as of December 31, 2019. There were no borrowings outstanding under the 2018 Credit Agreement as of December 31, 2019.

On August 14, 2019, the Company entered into a \$1.2 billion unsecured credit facility (the “2019 Credit Facility”) with several banks and other financial institutions. The lenders’ commitment to provide loans under the 2019 Credit Facility terminates on August 11, 2020, with each such loan maturing one year after the funding of such loan. The Company can request that the maturity date of loans be extended for an additional period of up to four additional years, but any such extension is subject to the approval of the lenders. Borrowings under the 2019 Credit Facility bear interest at variable rates based on an average LIBOR for deposits in the relevant currency plus an applicable margin which ranges from 0.875% to 1.625%, depending on the Company’s credit rating from S&P, Moody’s and Fitch. The applicable margin on the credit facility was 1.125% as of December 31, 2019. In October 2019, we borrowed \$1.0 billion under this credit facility to fund the cash portion of the October 31, 2019 acquisition of a 60% interest in MRL’s Wodgina Project and for general corporate purposes and as noted above, such amount was repaid in full in November 2019. Following the repayment of the amounts borrowed, the Company had \$200 million remaining to borrow under this credit facility. There were no borrowings outstanding under the 2019 Credit Facility as of December 31, 2019.

In addition, on August 14, 2019, the Company entered into an amendment to its existing credit agreement, dated as of June 21, 2018 to (a) extend the maturity date to August 9, 2024 (subject to the Company’s right to request that such maturity date be further extended for an additional one-year period), and (b) conform certain representations, warranties and covenants to those under the 2019 Credit Facility.

Borrowings under the 2019 Credit Facility and 2018 Credit Agreement (together “the Credit Agreements”) are conditioned upon satisfaction of certain conditions precedent, including the absence of defaults. The Company is subject to one financial covenant, as well as customary affirmative and negative covenants. The financial covenant requires that the Company’s consolidated funded debt to consolidated EBITDA ratio (as such terms are defined in the Credit Agreements) to be less than or equal to 3.50:1.00, subject to adjustments in accordance with the terms of the Credit Agreements relating to a consummation of an acquisition where the consideration includes cash proceeds from issuance of funded debt in excess of \$500 million. The Credit Agreements also contain customary default provisions, including defaults for non-payment, breach of representations and warranties, insolvency, non-performance of covenants and cross-defaults to other material indebtedness. The occurrence of an event of default under the Credit Agreements could result in all loans and other obligations becoming immediately due and payable and the credit facility being terminated.

### *Commercial Paper Notes*

On May 29, 2013, we entered into agreements to initiate a commercial paper program on a private placement basis under which we may issue unsecured commercial paper notes (the “Commercial Paper Notes”) from time-to-time up to a maximum aggregate principal amount outstanding at any time of \$750.0 million. The proceeds from the issuance of the Commercial Paper Notes are expected to be used for general corporate purposes, including the repayment of other debt of the Company. The Credit Agreements are available to repay the Commercial Paper Notes, if necessary. Aggregate borrowings outstanding under the Credit Agreements and the Commercial Paper Notes will not exceed the \$1.2 billion current maximum amount available under the Credit Agreements. The Commercial Paper Notes will be sold at a discount from par, or alternatively, will be sold at par and bear interest at rates that will vary based upon market conditions at the time of issuance. The maturities of the Commercial Paper Notes will vary but may not exceed 397 days from the date of issue. The definitive documents relating to the commercial paper program contain customary representations, warranties, default and indemnification provisions. At December 31, 2019, we had \$186.7 million of Commercial Paper Notes outstanding bearing a weighted-average interest rate of approximately 2.01% and a weighted-average maturity of 39 days.

### *Other*

We have additional uncommitted credit lines with various U.S. and foreign financial institutions that provide for borrowings of up to approximately \$307 million at December 31, 2019. Outstanding borrowings under these agreements were

\$7.3 million and \$7.2 million at December 31, 2019 and 2018, respectively. The average interest rate on borrowings under these agreements during 2019, 2018 and 2017 was approximately 0.36%, 0.69% and 1.26%, respectively.

At December 31, 2019 and 2018, we had the ability and intent to refinance our borrowings under our other existing credit lines with borrowings under the Credit Agreements. Therefore, the amounts outstanding under those credit lines, if any, are classified as long-term debt at December 31, 2019 and 2018. At December 31, 2019, we had the ability to borrow \$1.01 billion under our commercial paper program and the Credit Agreements.

We believe that as of December 31, 2019, we were, and currently are, in compliance with all of our debt covenants.

#### NOTE 15—Pension Plans and Other Postretirement Benefits:

We maintain various noncontributory defined benefit pension plans covering certain employees, primarily in the U.S., the U.K., Germany and Japan. We also have a contributory defined benefit plan covering certain Belgian employees. The benefits for these plans are based primarily on compensation and/or years of service. Our U.S. and U.K. defined benefit plans for non-represented employees are closed to new participants, with no additional benefits accruing under these plans as participants' accrued benefits have been frozen. The funding policy for each plan complies with the requirements of relevant governmental laws and regulations. The pension information for all periods presented includes amounts related to salaried and hourly plans.

The following provides a reconciliation of benefit obligations, plan assets and funded status, as well as a summary of significant assumptions, for our defined benefit pension plans (in thousands):

	Year Ended December 31, 2019		Year Ended December 31, 2018	
	U.S. Pension Plans	Foreign Pension Plans	U.S. Pension Plans	Foreign Pension Plans
<b>Change in benefit obligations:</b>				
Benefit obligation at January 1	\$ 635,866	\$ 240,303	\$ 685,963	\$ 275,006
Service cost	730	3,680	1,043	3,919
Interest cost	28,199	4,998	26,804	5,144
Plan amendments	—	—	—	233
Actuarial loss (gain)	56,108	21,588	(36,844)	(17,885)
Benefits paid	(42,183)	(10,088)	(41,100)	(9,974)
Employee contributions	—	133	—	182
Foreign exchange gain	—	(1,772)	—	(12,632)
Settlements/curtailments	—	(398)	—	(3,628)
Other	—	(70)	—	(62)
Benefit obligation at December 31	\$ 678,720	\$ 258,374	\$ 635,866	\$ 240,303
<b>Change in plan assets:</b>				
Fair value of plan assets at January 1	\$ 513,075	\$ 70,584	\$ 580,396	\$ 79,478
Actual return on plan assets	82,926	9,417	(28,457)	(1,593)
Employer contributions	2,865	10,572	2,236	10,700
Benefits paid	(42,183)	(10,088)	(41,100)	(9,974)
Employee contributions	—	133	—	182
Foreign exchange gain (loss)	—	1,316	—	(4,519)
Settlements/curtailments	—	(398)	—	(3,628)
Other	—	(70)	—	(62)
Fair value of plan assets at December 31	\$ 556,683	\$ 81,466	\$ 513,075	\$ 70,584
Funded status at December 31	\$ (122,037)	\$ (176,908)	\$ (122,791)	\$ (169,719)



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

	December 31, 2019		December 31, 2018	
	U.S. Pension Plans	Foreign Pension Plans	U.S. Pension Plans	Foreign Pension Plans
Amounts recognized in consolidated balance sheets:				
Current liabilities (accrued expenses)	\$ (1,224)	\$ (5,648)	\$ (1,342)	\$ (5,772)
Noncurrent liabilities (pension benefits)	(120,813)	(171,260)	(121,449)	(163,947)
Net pension liability	<u>\$ (122,037)</u>	<u>\$ (176,908)</u>	<u>\$ (122,791)</u>	<u>\$ (169,719)</u>
Amounts recognized in accumulated other comprehensive (loss) income:				
Prior service benefit	\$ —	\$ 224	\$ —	\$ (409)
Net amount recognized	<u>\$ —</u>	<u>\$ 224</u>	<u>\$ —</u>	<u>\$ (409)</u>
Weighted-average assumptions used to determine benefit obligations at December 31:				
Discount rate	3.56%	1.33%	4.59%	2.15%
Rate of compensation increase	—%	3.72%	—%	3.63%

The accumulated benefit obligation for all defined benefit pension plans was \$927.6 million and \$867.4 million at December 31, 2019 and 2018, respectively.

Postretirement medical benefits and life insurance is provided for certain groups of U.S. retired employees. Medical and life insurance benefit costs have been funded principally on a pay-as-you-go basis. Although the availability of medical coverage after retirement varies for different groups of employees, the majority of employees who retire before becoming eligible for Medicare can continue group coverage by paying a portion of the cost of a monthly premium designed to cover the claims incurred by retired employees subject to a cap on payments allowed. The availability of group coverage for Medicare-eligible retirees also varies by employee group with coverage designed either to supplement or coordinate with Medicare. Retirees generally pay a portion of the cost of the coverage. Plan assets for retiree life insurance are held under an insurance contract and are reserved for retiree life insurance benefits. In 2005, the postretirement medical benefit available to U.S. employees was changed to provide that employees who are under age 50 as of December 31, 2005 would no longer be eligible for a company-paid retiree medical premium subsidy. Employees who are of age 50 and above as of December 31, 2005 and who retire after January 1, 2006 will have their retiree medical premium subsidy capped. Effective January 1, 2008, our medical insurance for certain groups of U.S. retired employees is now insured through a medical carrier.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

The following provides a reconciliation of benefit obligations, plan assets and funded status, as well as a summary of significant assumptions, for our postretirement benefit plans (in thousands):

	Year Ended December 31,	
	2019	2018
	Other Postretirement Benefits	Other Postretirement Benefits
Change in benefit obligations:		
Benefit obligation at January 1	\$ 50,390	\$ 56,647
Service cost	98	117
Interest cost	2,197	2,168
Actuarial loss (gain)	5,445	(5,661)
Benefits paid	(3,041)	(2,881)
Benefit obligation at December 31	<u>\$ 55,089</u>	<u>\$ 50,390</u>
Change in plan assets:		
Fair value of plan assets at January 1	\$ —	\$ 834
Actual return on plan assets	—	(253)
Employer contributions	3,041	2,300
Benefits paid	(3,041)	(2,881)
Fair value of plan assets at December 31	<u>\$ —</u>	<u>\$ —</u>
Funded status at December 31	<u>\$ (55,089)</u>	<u>\$ (50,390)</u>
December 31,		
	2019	2018
	Other Postretirement Benefits	Other Postretirement Benefits
Amounts recognized in consolidated balance sheets:		
Current liabilities (accrued expenses)	\$ (4,190)	\$ (4,233)
Noncurrent liabilities (postretirement benefits)	(50,899)	(46,157)
Net postretirement liability	<u>\$ (55,089)</u>	<u>\$ (50,390)</u>
Weighted-average assumptions used to determine benefit obligations at December 31:		
Discount rate	3.53%	4.55%
Rate of compensation increase	3.50%	3.50%

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

The components of pension benefits cost (credit) are as follows (in thousands):

	Year Ended December 31, 2019		Year Ended December 31, 2018		Year Ended December 31, 2017	
	U.S. Pension Plans	Foreign Pension Plans	U.S. Pension Plans	Foreign Pension Plans	U.S. Pension Plans	Foreign Pension Plans
Service cost	\$ 730	\$ 3,680	\$ 1,043	\$ 3,919	\$ 985	\$ 2,547
Interest cost	28,199	4,998	26,804	5,144	28,614	5,128
Expected return on assets	(33,926)	(3,837)	(38,621)	(4,204)	(36,243)	(4,441)
Actuarial loss (gain)	7,106	16,784	30,234	(10,833)	(13,910)	483
Amortization of prior service benefit	—	37	60	34	75	56
Total net pension benefits cost (credit)	\$ 2,109	\$ 21,662	\$ 19,520	\$ (5,940)	\$ (20,479)	\$ 3,773
Weighted-average assumption percentages:						
Discount rate	4.59%	2.15%	4.03%	1.94%	4.43%	2.00%
Expected return on plan assets	6.89%	5.51%	6.89%	5.52%	6.89%	6.16%
Rate of compensation increase	—%	3.63%	—%	3.18%	—%	3.18%

Effective January 1, 2020, the weighted-average expected rate of return on plan assets for the U.S. and foreign defined benefit pension plans is 6.88% and 4.07%, respectively.

The components of postretirement benefits cost (credit) are as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
	Other Postretirement Benefits	Other Postretirement Benefits	Other Postretirement Benefits
Service cost	\$ 98	\$ 117	\$ 121
Interest cost	2,197	2,168	2,340
Expected return on assets	—	(7)	(110)
Actuarial loss (gain)	5,449	(5,400)	2,014
Amortization of prior service benefit	—	(48)	(95)
Total net postretirement benefits cost (credit)	\$ 7,744	\$ (3,170)	\$ 4,270
Weighted-average assumption percentages:			
Discount rate	4.55%	3.99%	4.35%
Expected return on plan assets	—%	7.00%	7.00%
Rate of compensation increase	3.50%	3.50%	3.50%

All components of net benefit cost (credit), other than service cost, are included in Other expenses, net on the consolidated statements of income.

The mark-to-market actuarial loss in 2019 is primarily attributable to a decrease in the weighted-average discount rate to 3.56% from 4.59% for our U.S. pension plans and to 1.33% from 2.15% for our foreign pension plans to reflect market conditions as of the December 31, 2019 measurement date. This was partially offset by a higher return on pension plan assets in 2019 than was expected, as a result of overall market and investment portfolio performance. The weighted-average actual return on our U.S. and foreign pension plan assets was 15.82% versus an expected return of 6.72%.

The mark-to-market actuarial loss in 2018 is primarily attributable to a lower return on pension plan assets in 2018 than was expected, as a result of overall market and investment portfolio performance. The weighted-average actual return on our U.S. and foreign pension plan assets was (4.55)% versus an expected return of 6.73%. The mark-to-market actuarial loss in 2018 was partially offset by an increase in the weighted-average discount rate to 4.59% from 4.03% for our U.S. pension plans

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

and to 2.15% from 1.94% for our foreign pension plans to reflect market conditions as of the December 31, 2018 measurement date.

The mark-to-market actuarial gain in 2017 is primarily attributable to a higher return on pension plan assets in 2017 than was expected, as a result of overall market and investment portfolio performance. The weighted-average actual return on our U.S. and foreign pension plan assets was 14.31% versus an expected return of 6.73%. The mark-to-market actuarial gain in 2017 was partially offset by a decrease in the weighted-average discount rate to 4.03% from 4.43% for our U.S. pension plans and to 1.94% from 2.00% for our foreign pension plans to reflect market conditions as of the December 31, 2017 measurement date.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). The inputs used to measure fair value are classified into the following hierarchy:

Level 1	Unadjusted quoted prices in active markets for identical assets or liabilities
Level 2	Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability
Level 3	Unobservable inputs for the asset or liability

We endeavor to utilize the best available information in measuring fair value. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. Investments for which market quotations are readily available are valued at the closing price on the last business day of the year. Listed securities for which no sale was reported on such date are valued at the mean between the last reported bid and asked price. Securities traded in the over-the-counter market are valued at the closing price on the last business day of the year or at bid price. The net asset value of shares or units is based on the quoted market value of the underlying assets. The market value of corporate bonds is based on institutional trading lots and is most often reflective of bid price. Government securities are valued at the mean between bid and ask prices. Holdings in private equity securities are typically valued using the net asset valuations provided by the underlying private investment companies.

The following tables set forth the assets of our pension and postretirement plans that were accounted for at fair value on a recurring basis as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	Quoted Prices in Active Markets for Identical Items (Level 1)	Quoted Prices in Active Markets for Similar Items (Level 2)	Unobservable Inputs (Level 3)
Pension Assets:				
Domestic Equity(a)	\$ 119,842	\$ 118,255	\$ 1,587	\$ —
International Equity(b)	126,828	95,246	31,582	—
Fixed Income(c)	317,667	279,731	37,936	—
Absolute Return Measured at Net Asset Value(d)	73,777	—	—	—
Cash	35	35	—	—
Total Pension Assets	\$ 638,149	\$ 493,267	\$ 71,105	\$ —

	December 31, 2018	Quoted Prices in Active Markets for Identical Items (Level 1)	Quoted Prices in Active Markets for Similar Items (Level 2)	Unobservable Inputs (Level 3)
Pension Assets:				
Domestic Equity(a)	\$ 113,355	\$ 111,665	\$ 1,690	\$ —
International Equity(b)	114,554	90,651	23,903	—
Fixed Income(c)	254,437	219,124	35,313	—
Absolute Return Measured at Net Asset Value(d)	71,987	—	—	—
Cash	29,326	29,326	—	—
Total Pension Assets	\$ 583,659	\$ 450,766	\$ 60,906	\$ —

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- (a) Consists primarily of U.S. stock funds that track or are actively managed and measured against the S&P 500 index.
- (b) Consists primarily of international equity funds which invest in common stocks and other securities whose value is based on an international equity index or an underlying equity security or basket of equity securities.
- (c) Consists primarily of debt obligations issued by governments, corporations, municipalities and other borrowers. Also includes insurance policies.
- (d) Consists primarily of funds with holdings in private investment companies. See additional information about the Absolute Return investments below. Holdings in private investment companies are measured at fair value using the net asset value per share as a practical expedient and have not been categorized in the fair value hierarchy. The fair value amounts of \$73.8 million and \$72.0 million as of December 31, 2019 and 2018, respectively, are included in this table to permit reconciliation to the reconciliation of plan assets table above.

The Company's pension plan assets in the U.S. and U.K. represent approximately 97% of the total pension plan assets. The investment objective of these pension plan assets is to achieve solid returns while preserving capital to meet current plan cash flow requirements. Assets should participate in rising markets, with defensive action in declining markets expected to an even greater degree. Depending on market conditions, the broad asset class targets may range up or down by approximately 10%. These asset classes include but are not limited to hedge fund of funds, bonds and other fixed income vehicles, high yield fixed income securities, equities and distressed debt. At December 31, 2019 and 2018, equity securities held by our pension and OPEB plans did not include direct ownership of Albemarle common stock.

The weighted-average target allocations as of the measurement date are as follows:

	<b>Target Allocation</b>
Equity securities	42%
Fixed income	49%
Absolute return	9%

Our Absolute Return investments consist primarily of our investments in hedge fund of funds. These are holdings in private investment companies with fair values that are based on significant unobservable inputs including assumptions where there is little, if any, market activity for the investment. Investment managers or fund managers associated with these investments provide valuations of the investments on a monthly basis utilizing the net asset valuation approach for determining fair values. These valuations are reviewed by the Company for reasonableness based on applicable sector, benchmark and company performance to validate the appropriateness of the net asset values as a fair value measurement. Where available, audited financial statements are obtained and reviewed for the investments as support for the manager's investment valuation. In general, the investment objective of these funds is high risk-adjusted returns with an emphasis on preservation of capital. The investment strategies of each of the funds vary; however, the objective of our Absolute Return investments is complementary to the overall investment objective of our U.S. pension plan assets.

We made contributions to our defined benefit pension and OPEB plans of \$16.5 million, \$15.2 million and \$13.3 million during the years ended December 31, 2019, 2018 and 2017, respectively. We expect contributions to our domestic nonqualified and foreign qualified and nonqualified pension plans to approximate \$13 million in 2020. Also, we expect to pay approximately \$4 million in premiums to our U.S. postretirement benefit plan in 2020. However, we may choose to make additional voluntary pension contributions in excess of these amounts.

The current forecast of benefit payments, which reflects expected future service, amounts to (in millions):

	<b>U.S. Pension Plans</b>	<b>Foreign Pension Plans</b>	<b>Other Postretirement Benefits</b>
2020	\$ 42.3	\$ 10.6	\$ 4.2
2021	\$ 47.8	\$ 10.0	\$ 4.0
2022	\$ 48.4	\$ 9.5	\$ 3.9
2023	\$ 48.9	\$ 12.3	\$ 3.9
2024	\$ 49.0	\$ 10.4	\$ 3.8
2025-2029	\$ 240.9	\$ 54.6	\$ 17.5

We have a supplemental executive retirement plan ("SERP"), which provides unfunded supplemental retirement benefits to certain management or highly compensated employees. The SERP provides for incremental pension benefits to offset the

limitations imposed on qualified plan benefits by federal income tax regulations. Costs (credits) relating to our SERP were \$2.2 million, (\$0.8) million and \$2.6 million for the years ended December 31, 2019, 2018 and 2017, respectively. The projected benefit obligation for the SERP recognized in the consolidated balance sheets at December 31, 2019 and 2018 was \$21.3 million and \$21.9 million, respectively. The benefit expenses and obligations of this SERP are included in the tables above. Benefits of \$1.2 million are expected to be paid to SERP retirees in 2020. On October 1, 2012, our Board of Directors approved amendments to the SERP, such that effective December 31, 2014, no additional benefits shall accrue under this plan and participants' accrued benefits shall be frozen as of that date to reflect the same changes as were made under the U.S. qualified defined benefit plan.

At December 31, 2019, the assumed rate of increase in the pre-65 and post-65 per capita cost of covered health care benefits for U.S. retirees was zero as the employer-paid premium caps (pre-65 and post-65) were met starting January 1, 2013.

#### *Defined Contribution Plans*

On March 31, 2004, a new defined contribution pension plan benefit was adopted under the qualified defined contribution plan for U.S. non-represented employees hired after March 31, 2004. On October 1, 2012 our Board of Directors approved certain plan amendments, such that effective January 1, 2013, the defined contribution pension plan benefit is expanded to include non-represented employees hired prior to March 31, 2004, and revised the contribution for all participants to be based on 5% of eligible employee compensation. The employer portion of contributions to our U.S. defined contribution pension plan amounted to \$11.5 million, \$11.8 million, and \$10.3 million in 2019, 2018 and 2017, respectively.

Certain of our employees participate in our defined contribution 401(k) employee savings plan, which is generally available to all U.S. full-time salaried and non-union hourly employees and to employees who are covered by a collective bargaining agreement that provides for such participation. This U.S. defined contribution plan is funded with contributions made by the participants and us. Our contributions to the 401(k) plan amounted to \$12.6 million, \$12.7 million and \$11.3 million in 2019, 2018 and 2017, respectively.

In 2006, we formalized a new plan in the Netherlands similar to a collective defined contribution plan. The collective defined contribution plan is supported by annuity contracts through an insurance company. The insurance company unconditionally undertakes the legal obligation to provide specific benefits to specific individuals in return for a fixed amount of premiums. Our obligation under this plan is limited to a variable calculated employer match for each participant plus an additional fixed amount of contributions to assist in covering estimated cost of living and salary increases (indexing) and administrative costs for the overall plan. We paid approximately \$9.7 million, \$10.2 million and \$9.9 million in 2019, 2018 and 2017, respectively, in annual premiums and related costs pertaining to this plan.

#### *Multiemployer Plan*

Certain current and former employees participate in a multiemployer plan in Germany, the Pensionskasse Dynamit Nobel Versicherungsverein auf Gegenseitigkeit, Troisdorf ("DN Pensionskasse") that provides monthly payments in the case of disability, death or retirement. The risks of participating in a multiemployer plan are different from single-employer plans in the following ways: (a) assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers, and (b) if a participating employer stops contributing to the plan due to financial inability to provide funding, the unfunded obligation of the plan may be borne by remaining participating employers.

Some participants in the plan are subject to collective bargaining arrangements, which have no fixed expiration date. The contribution and benefit levels are not negotiated or significantly influenced by these collective bargaining arrangements. Also, the benefit levels generally are not subject to reduction. Under German insurance law, the DN Pensionskasse must be fully funded at all times. The DN Pensionskasse was fully funded as of December 31, 2018, the date of the most recently available information for the plan. This funding level would correspond to the highest funding zone status (at least 80% funded) under U.S. pension regulation. Since the plan liabilities need to be fully funded at all times according to local funding requirements, it is unlikely that the DN Pensionskasse plan will fail to fulfill its obligations, however, in such an event, the Company is liable for the benefits of its employees, and former employees of certain divested businesses, who participate in the plan. Additional information of the DN Pensionskasse is available in the public domain.

The majority of the Company's contributions are tied to employees' contributions, which are generally calculated as a percentage of base compensation, up to a certain statutory ceiling. Our normal contributions to this plan were approximately \$1.4 million in 2019 and \$1.5 million in 2018 and 2017. The Company's contributions represented more than 5% of total contributions to the DN Pensionskasse in 2019.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Effective July 1, 2016, the DN Pensionskasse is subject to a financial improvement plan which expires on December 31, 2022, with the final contribution in the second quarter of 2023. This financial improvement plan calls for increased capital reserves to avoid future underfunding risk. During the years ended December 31, 2019, 2018 and 2017, we made contributions for our employees covered under this plan of approximately \$1.8 million, \$2.3 million and \$3.3 million, respectively, recorded in Selling, general and administrative expenses, as a result of this financial improvement plan. The value of the additional funding required under the financial improvement plan each year is determined upon the completion of the annual financial statements and are payable in the second quarter of the following year. A portion of the additional funding necessary for the year will be based on an estimate prepared on September 30 of each year and payable in the fourth quarter of that same year.

**NOTE 16—Other Noncurrent Liabilities:**

Other noncurrent liabilities consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Transition tax on foreign earnings <sup>(a)</sup>	\$ 303,490	\$ 317,745
Wodgina Project acquisition consideration obligation <sup>(b)</sup>	120,800	—
Operating leases <sup>(c)</sup>	114,686	—
Liabilities related to uncertain tax positions <sup>(d)</sup>	21,169	22,877
Executive deferred compensation plan obligation	28,715	26,292
Environmental liabilities <sup>(e)</sup>	33,058	40,376
Asset retirement obligations <sup>(e)</sup>	55,848	41,489
Tax indemnification liability <sup>(f)</sup>	30,993	45,347
Other <sup>(g)</sup>	45,777	32,816
Total	<u>\$ 754,536</u>	<u>\$ 526,942</u>

(a) Noncurrent portion of one-time transition tax on foreign earnings. See Note 21, "Income Taxes," for additional information.

(b) Represents the 40% interest in the Kemerton assets, which are under construction, expected to be transferred to MRL as part of the consideration paid for the Wodgina Project acquisition. See Note 2, "Acquisitions," for further details.

(c) See Note 18, "Leases."

(d) See Note 21, "Income Taxes."

(e) See Note 17, "Commitments and Contingencies."

(f) Indemnification of certain income and non-income tax liabilities associated with the Chemetall Surface Treatment entities sold. The December 31, 2018 balance also includes the settlement of an ongoing audit of a previously disposed business in Germany.

(g) No individual component exceeds 5% of total liabilities.

**NOTE 17—Commitments and Contingencies:**

In the ordinary course of business, we have commitments in connection with various activities. We believe that amounts recorded are adequate for known items which might become due in the current year. The most significant commitments are as follows:

*Environmental*

We had the following activity in our recorded environmental liabilities for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Balance, beginning of year	\$ 49,569	\$ 39,808	\$ 34,919
Expenditures	(6,037)	(6,885)	(1,818)
Accretion of discount	1,030	1,283	896
Additions and changes in estimates <sup>(a)</sup>	1,129	17,039	3,344
Foreign currency translation adjustments and other	(3,099)	(1,676)	2,467
Balance, end of year	42,592	49,569	39,808
Less amounts reported in Accrued expenses	9,534	9,193	2,290
Amounts reported in Other noncurrent liabilities	<u>\$ 33,058</u>	<u>\$ 40,376</u>	<u>\$ 37,518</u>

- (a) Increase in additions in 2018 primarily related to the indemnification of the buyer of a formerly owned site. As defined in the agreement of sale, this indemnification has a set cutoff date in 2024, at which point we will no longer be required to provide financial coverage.

Environmental remediation liabilities included discounted liabilities of \$35.6 million and \$40.4 million at December 31, 2019 and 2018, respectively, discounted at rates with a weighted-average of 3.7%, with the undiscounted amount totaling \$69.2 million and \$74.5 million at December 31, 2019 and 2018, respectively. For certain locations where the Company is operating groundwater monitoring and/or remediation systems, prior owners or insurers have assumed all or most of the responsibility.

The amounts recorded represent our future remediation and other anticipated environmental liabilities. These liabilities typically arise during the normal course of our operational and environmental management activities or at the time of acquisition of the site, and are based on internal analysis as well as input from outside consultants. As evaluations proceed at each relevant site, changes in risk assessment practices, remediation techniques and regulatory requirements can occur, therefore such liability estimates may be adjusted accordingly. The timing and duration of remediation activities at these sites will be determined when evaluations are completed. Although it is difficult to quantify the potential financial impact of these remediation liabilities, management estimates (based on the latest available information) that there is a reasonable possibility that future environmental remediation costs associated with our past operations, could be an additional \$10 million to \$30 million before income taxes, in excess of amounts already recorded. The variability of this range is primarily driven by possible environmental remediation activity at a formerly owned site where we indemnify the buyer through a set cutoff date in 2024.

We believe that any sum we may be required to pay in connection with environmental remediation matters in excess of the amounts recorded would likely occur over a period of time and would likely not have a material adverse effect upon our results of operations, financial condition or cash flows on a consolidated annual basis although any such sum could have a material adverse impact on our results of operations, financial condition or cash flows in a particular quarterly reporting period.

#### Asset Retirement Obligations

The following is a reconciliation of our beginning and ending asset retirement obligation balances for 2019 and 2018 (in thousands):

	Year Ended December 31,	
	2019	2018
Balance, beginning of year	\$ 41,489	\$ 40,450
Acquisitions <sup>(a)</sup>	4,650	—
Additions and changes in estimates <sup>(b)</sup>	14,734	740
Accretion of discount	2,035	1,500
Liabilities settled	(3,289)	(786)
Foreign currency translation adjustments and other	627	(415)
Balance, end of year	\$ 60,246	\$ 41,489
Less amounts reported in Accrued expenses	4,398	—
Amounts reported in Other noncurrent liabilities	\$ 55,848	\$ 41,489

- (a) Represents preliminary purchase price adjustments for the Wodgina Project acquisition recorded for the year ended December 31, 2019. See Note 2, "Acquisitions," for additional information.

- (b) Increase in additions in 2019 related to \$11.1 million of new asset retirement obligations in Chile and Australia and \$3.6 million of charges related to the update of an estimate at a site formerly owned by Albemarle.

Asset retirement obligations primarily relate to post-closure reclamation of brine wells and sites involved in the surface mining and manufacturing of lithium. We are not aware of any conditional asset retirement obligations that would require recognition in our consolidated financial statements.

#### Litigation

We are involved from time to time in legal proceedings of types regarded as common in our business, including administrative or judicial proceedings seeking remediation under environmental laws, such as the federal Comprehensive Environmental Response, Compensation and Liability Act, commonly known as CERCLA or Superfund, products liability, breach of contract liability and premises liability litigation. Where appropriate, we may establish financial reserves for such proceedings. We also maintain insurance to mitigate certain of such risks. Costs for legal services are generally expensed as incurred.



As previously reported in 2018, following receipt of information regarding potential improper payments being made by third party sales representatives of our Refining Solutions business, within our Catalysts segment, we promptly retained outside counsel and forensic accountants to investigate potential violations of the Company's Code of Conduct, the Foreign Corrupt Practices Act ("FCPA"), and other potentially applicable laws. Based on this internal investigation, we have voluntarily self-reported potential issues relating to the use of third party sales representatives in our Refining Solutions business, within our Catalysts segment, to the U.S. Department of Justice ("DOJ"), the Securities and Exchange Commission ("SEC"), and the Dutch Public Prosecutor ("DPP"), and are cooperating with the DOJ, the SEC, and DPP in their review of these matters. In connection with our internal investigation, we have implemented, and are continuing to implement, appropriate remedial measures.

At this time, we are unable to predict the duration, scope, result or related costs associated with the investigations by the DOJ, the SEC, or DPP. We are unable to predict what, if any, action may be taken by the DOJ, the SEC, or DPP, or what penalties or remedial actions they may seek to impose. Any determination that our operations or activities are not in compliance with existing laws or regulations could result in the imposition of fines, penalties, disgorgement, equitable relief, or other losses. We do not believe, however, that any such fines, penalties, disgorgement, equitable relief or other losses would have a material adverse effect on our financial condition or liquidity.

During the year ended December 31, 2018, we recorded a charge of \$16.2 million in Other expenses, net resulting from a jury rendering a verdict against Albemarle in a legal matter related to certain business concluded under a 2014 sales agreement for products that Albemarle no longer manufactures. In addition, during the year ended December 31, 2018, we recorded a charge of \$10.8 million in Other expenses, net due to a settlement of a legal matter related to guarantees from a previously disposed business. Both matters were resolved and paid during the year ended December 31, 2018.

#### Indemnities

We are indemnified by third parties in connection with certain matters related to acquired and divested businesses. Although we believe that the financial condition of those parties who may have indemnification obligations to the Company is generally sound, in the event the Company seeks indemnity under any of these agreements or through other means, there can be no assurance that any party who may have obligations to indemnify us will adhere to their obligations and we may have to resort to legal action to enforce our rights under the indemnities.

The Company may be subject to indemnity claims relating to properties or businesses it divested, including properties or businesses of acquired businesses that were divested prior to the completion of the acquisition. In the opinion of management, and based upon information currently available, the ultimate resolution of any indemnification obligations owed to the Company or by the Company is not expected to have a material effect on the Company's financial condition, results of operations or cash flows. The Company had approximately \$31.0 million and \$45.3 million at December 31, 2019 and 2018, respectively, recorded in Other noncurrent liabilities related to the indemnification of certain income and non-income tax liabilities associated with the Chemetall Surface Treatment entities sold. The balance at December 31, 2018 also included the settlement of an ongoing audit of a previously disposed business in Germany.

#### Other

The Company has standby letters of credit and guarantees with various financial institutions. The following table summarizes our letters of credit and guarantee agreements (in thousands):

	2020	2021	2022	2023	2024	Thereafter
Letters of credit and other guarantees	\$ 49,152	\$ 11,383	\$ 1,303	\$ 1,190	\$ —	\$ 19,305

The outstanding letters of credit are primarily related to insurance claim payment guarantees. The majority of the Company's other guarantees have terms of one year and mainly consist of performance and environmental guarantees, as well as guarantees to customs and port authorities. The guarantees arose during the ordinary course of business.

We do not have recorded reserves for the letters of credit and guarantees as of December 31, 2019. We are unable to estimate the maximum amount of the potential future liability under guarantees and letters of credit. However, we accrue for any potential loss for which we believe a future payment is probable and a range of loss can be reasonably estimated. We believe our liability under such obligations is immaterial.

We currently, and are from time to time, subject to transactional audits in various taxing jurisdictions and to customs audits globally. We do not expect the financial impact of any of these audits to have a material adverse effect on the Company's results of operations, financial condition or cash flows.

**NOTE 18—Leases:**

We lease certain office space, buildings, transportation and equipment in various countries. The initial lease terms generally range from 1 to 30 years for real estate leases, and from 2 to 15 years for non-real estate leases. Leases with an initial term of 12 months or less are not recorded on the balance sheet, and we recognize lease expense for these leases on a straight-line basis over the lease term.

Many leases include options to terminate or renew, with renewal terms that can extend the lease term from 1 to 50 years or more. The exercise of lease renewal options is at our sole discretion. Certain leases also include options to purchase the leased property. The depreciable life of assets and leasehold improvements are limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

The following table provides details of our lease contracts for the year ended December 31, 2019 (in thousands):

	<b>December 31, 2019</b>
Operating lease cost	\$ 35,335
Finance lease cost:	
Amortization of right of use assets	625
Interest on lease liabilities	117
Total finance lease cost	742
Short-term lease cost	6,655
Variable lease cost	6,198
Total lease cost	<u>\$ 48,930</u>

Rental expense was approximately \$37.6 million and \$31.2 million for 2018 and 2017, respectively.

Supplemental cash flow information related to our lease contracts for the year ended December 31, 2019 is as follows (in thousands):

	<b>December 31, 2019</b>
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ 29,946
Operating cash flows from finance leases	117
Financing cash flows from finance leases	678
Right-of-use assets obtained in exchange for lease obligations:	
Operating leases	24,687
Finance leases <sup>(a)</sup>	55,806

(a) Represents 60% ownership interest in finance lease acquired as part of the Wodgina Project acquisition. See Note 2, "Acquisitions," for further details.

Supplemental balance sheet information related to our lease contracts, including the location on balance sheet, at December 31, 2019 is as follows (in thousands, except as noted):

	December 31, 2019
<b>Operating leases:</b>	
Other assets	\$ 133,864
Current operating lease liability	23,137
Other noncurrent liabilities	114,686
Total operating lease liabilities	137,823
<b>Finance leases:</b>	
Net property, plant and equipment	59,494
Current portion of long-term debt	636
Long-term debt	58,888
Total finance lease liabilities	59,524
<b>Weighted average remaining lease term (in years):</b>	
Operating leases	11.4
Finance leases	28.3
<b>Weighted average discount rate (%):</b>	
Operating leases	3.84%
Finance leases	4.56%

Maturities of lease liabilities as of December 31, 2019 were as follows (in thousands):

	Operating Leases	Finance Leases
2020	\$ 28,333	\$ 2,229
2021	15,306	2,140
2022	13,153	4,431
2023	12,433	4,431
2024	11,850	4,431
Thereafter	94,002	94,788
Total lease payments	175,077	112,450
Less imputed interest	37,254	52,926
Total	\$ 137,823	\$ 59,524

#### NOTE 19—Stock-based Compensation Expense:

##### *Incentive Plans*

We have various share-based compensation plans that authorize the granting of (i) qualified and non-qualified stock options to purchase shares of our common stock, (ii) restricted stock and restricted stock units, (iii) performance unit awards and (iv) stock appreciation rights (“SARs”) to employees and non-employee directors, at our option. Stock options granted to employees generally vest over three years and have a term of ten years. Restricted stock and restricted stock unit awards vest in periods ranging from one to five years from the date of grant. Performance unit awards are earned at a level ranging from 0% to 200% contingent upon the achievement of specific performance criteria over periods ranging from one to three years. Distribution of earned units occurs generally 50% upon completion of the applicable measurement period with the remaining 50% distributed one year thereafter.

In May 2017, the Company adopted the Albemarle Corporation 2017 Incentive Plan (the “Incentive Plan”), which replaced the Albemarle Corporation 2008 Incentive Plan. The maximum number of shares available for issuance to participants under the Incentive Plan is 4,500,000 shares. The adoption of the Incentive Plan did not affect awards already granted under the Albemarle Corporation 2008 Incentive Plan. Under the Albemarle Corporation 2013 Stock Compensation and Deferral Election

Plan for Non-Employee Directors (the “Non-Employee Directors Plan”), a maximum aggregate number of 500,000 shares of our common stock is authorized for issuance to the Company’s non-employee directors; any shares remaining available for issuance under the prior plans were canceled. The aggregate fair market value of shares that may be issued to a director during any compensation year (as defined in the agreement, generally July 1 to June 30) shall not exceed \$150,000. At December 31, 2019, there were 4,005,657 shares available for grant under the Incentive Plan and 360,575 shares available for grant under the Non-Employee Directors Plan.

Total stock-based compensation expense associated with our incentive plans for the years ended December 31, 2019, 2018 and 2017 amounted to \$21.3 million, \$15.2 million and \$19.4 million, respectively, and is included in Cost of goods sold and Selling, general and administrative expenses in the consolidated statements of income. Total related recognized tax benefits for the years ended December 31, 2019, 2018 and 2017 amounted to \$3.2 million, \$2.6 million and \$7.0 million, respectively. As a result of the sale of the Chemetall Surface Treatment business in 2016, we converted previously granted incentive awards owed to Chemetall employees to a cash liability to be paid on the original vesting dates of the awards. At December 31, 2019, \$0.7 million of this cash liability was included in Accrued liabilities.

The following table summarizes information about the Company’s fixed-price stock options as of and for the year ended December 31, 2019:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2018	1,316,733	\$ 59.55	4.3	\$ 26,438
Granted	95,639	91.00		
Exercised	(161,909)	29.73		
Forfeited	(5,932)	95.47		
Outstanding at December 31, 2019	1,244,531	\$ 65.67	4.2	\$ 14,593
Exercisable at December 31, 2019	980,865	\$ 59.47	3.3	\$ 13,583

We granted 95,639, 63,259 and 82,204 stock options during 2019, 2018 and 2017, respectively. There were no significant modifications made to any share-based grants during these periods.

The fair value of each option granted during the years ended December 31, 2019, 2018 and 2017 was estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2019	2018	2017
Dividend yield	1.58%	1.44%	1.56%
Volatility	32.50%	32.48%	32.70%
Average expected life (years)	6	6	6
Risk-free interest rate	2.81%	3.06%	2.51%
Fair value of options granted	\$ 27.71	\$ 37.35	\$ 27.99

Dividend yield is the average of historical yields and those estimated over the average expected life. The stock volatility is based on historical volatilities of our common stock. The average expected life represents the weighted average period of time that options granted are expected to be outstanding giving consideration to vesting schedules and our historical exercise patterns. The risk-free interest rate is based on the U.S. Treasury strip rate with stripped coupon interest for the period equal to the contractual term of the share option grant in effect at the time of grant.

The intrinsic value of options exercised during the years ended December 31, 2019, 2018 and 2017 was \$8.1 million, \$6.2 million and \$15.6 million, respectively. The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price of the option.

Total compensation cost not yet recognized for nonvested stock options outstanding as of December 31, 2019 is approximately \$2.8 million and is expected to be recognized over a remaining weighted-average period of 1.8 years. Cash proceeds from stock options exercised and tax benefits related to stock options exercised were \$4.8 million and \$1.9 million for

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

the year ended December 31, 2019, respectively. The Company issues new shares of common stock upon exercise of stock options and vesting of restricted common stock awards.

The following table summarizes activity in performance unit awards as of and for the year ended December 31, 2019:

	Shares	Weighted-Average Grant Date Fair Value Per Share
Nonvested, beginning of period	317,437	\$ 97.39
Granted	100,288	107.68
Vested	(139,034)	66.93
Forfeited	(18,958)	124.45
Nonvested, end of period	<u>259,733</u>	<u>115.69</u>

The weighted average grant date fair value of performance unit awards granted in 2019, 2018 and 2017 was \$10.8 million, \$10.9 million and \$9.6 million, respectively. During 2019, half of the performance unit awards granted were based on the targeted return on invested capital (“ROIC Award”), while the other half were granted based on targeted market conditions (“TSR Award”). During 2018 and 2017, all performance unit awards were TSR awards. The fair value of each TSR Award was estimated on the date of grant using the Monte Carlo simulation model as these equity awards are tied to a service and market condition. The calculation used the following weighted-average assumptions:

	Year Ended December 31,		
	2019	2018	2017
Volatility	30.11%	29.92%	30.34%
Risk-free interest rate	2.43%	2.36%	1.34%

The weighted average fair value of performance unit awards that vested during 2019, 2018 and 2017 was \$11.7 million, \$20.0 million and \$11.9 million, respectively, based on the closing prices of our common stock on the dates of vesting. Total compensation cost not yet recognized for nonvested performance unit awards outstanding as of December 31, 2019 is approximately \$11.7 million, calculated based on current expectation of specific performance criteria, and is expected to be recognized over a remaining weighted-average period of approximately 1.4 years. Each performance unit represents one share of common stock.

The following table summarizes activity in non-performance based restricted stock and restricted stock unit awards as of and for the year ended December 31, 2019:

	Shares	Weighted-Average Grant Date Fair Value Per Share
Nonvested, beginning of period	257,518	\$ 85.44
Granted	131,365	79.27
Vested	(89,548)	73.61
Forfeited	(26,775)	89.23
Nonvested, end of period	<u>272,560</u>	<u>85.98</u>

The weighted average grant date fair value of restricted stock and restricted stock unit awards granted in 2019, 2018 and 2017 was \$10.4 million, \$10.9 million and \$8.2 million, respectively. The weighted average fair value of restricted stock and restricted stock unit awards that vested in 2019, 2018 and 2017 was \$7.5 million, \$4.9 million and \$3.1 million, respectively, based on the closing prices of our common stock on the dates of vesting. Total compensation cost not yet recognized for nonvested, non-performance based restricted stock and restricted stock units as of December 31, 2019 is approximately \$12.7 million and is expected to be recognized over a remaining weighted-average period of 2.1 years. The fair value of the non-performance based restricted stock and restricted stock units was estimated on the date of grant adjusted for a dividend factor, if necessary.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

**NOTE 20—Accumulated Other Comprehensive (Loss) Income:**

The components and activity in Accumulated other comprehensive (loss) income (net of deferred income taxes) consisted of the following during the years ended December 31, 2019, 2018 and 2017 (in thousands):

	Foreign Currency Translation	Pension and Post- Retirement Benefits <sup>(a)</sup>	Net Investment Hedge	Cash Flow Hedge <sup>(b)</sup>	Interest Rate Swap <sup>(c)</sup>	Total
Accumulated other comprehensive (loss) income - balance at December 31, 2016	\$ (484,121)	\$ 76	\$ 88,378	\$ —	\$ (16,745)	\$ (412,412)
Other comprehensive income (loss) before reclassifications	227,439	—	(41,827)	—	—	185,612
Amounts reclassified from accumulated other comprehensive loss	—	(97)	—	—	2,116	2,019
Other comprehensive income (loss), net of tax	227,439	(97)	(41,827)	—	2,116	187,631
Other comprehensive income attributable to noncontrolling interests	(887)	—	—	—	—	(887)
Accumulated other comprehensive (loss) income - balance at December 31, 2017	\$ (257,569)	\$ (21)	\$ 46,551	\$ —	\$ (14,629)	\$ (225,668)
Other comprehensive (loss) income before reclassifications	(150,258)	—	15,695	—	—	(134,563)
Amounts reclassified from accumulated other comprehensive loss <sup>(d)</sup>	—	(138)	10,091	—	(585)	9,368
Other comprehensive (loss) income, net of tax	(150,258)	(138)	25,786	—	(585)	(125,195)
Other comprehensive loss attributable to noncontrolling interests	181	—	—	—	—	181
Accumulated other comprehensive (loss) income - balance at December 31, 2018	\$ (407,646)	\$ (159)	\$ 72,337	\$ —	\$ (15,214)	\$ (350,682)
Other comprehensive (loss) income before reclassifications	(62,031)	576	8,441	4,847	—	(48,167)
Amounts reclassified from accumulated other comprehensive loss	—	56	—	—	2,591	2,647
Other comprehensive (loss) income, net of tax	(62,031)	632	8,441	4,847	2,591	(45,520)
Other comprehensive loss attributable to noncontrolling interests	467	—	—	—	—	467
Accumulated other comprehensive (loss) income - balance at December 31, 2019	<u>\$ (469,210)</u>	<u>\$ 473</u>	<u>\$ 80,778</u>	<u>\$ 4,847</u>	<u>\$ (12,623)</u>	<u>\$ (395,735)</u>

(a) The pre-tax portion of amounts reclassified from accumulated other comprehensive loss consists of amortization of prior service benefit, which is a component of pension and postretirement benefits cost (credit). See Note 15, "Pension Plans and Other Postretirement Benefits," for additional information.

(b) We entered into a foreign currency forward contract in the fourth quarter of 2019, which was designated and accounted for as a cash flow hedge under ASC 815, *Derivatives and Hedging*. See Note 22, "Fair Value of Financial Instruments," for additional information.

(c) The pre-tax portion of amounts reclassified from accumulated other comprehensive loss is included in interest expense.

(d) Amounts reclassified from accumulated other comprehensive loss include a net benefit of \$6.9 million, which was reclassified to Retained earnings for stranded tax effects caused by the TCJA.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

The amount of income tax (expense) benefit allocated to each component of Other comprehensive (loss) income for the years ended December 31, 2019, 2018 and 2017 is provided in the following tables (in thousands):

	Foreign Currency Translation	Pension and Postretirement Benefits	Net Investment Hedge	Cash Flow Hedge	Interest Rate Swap
<b>2019</b>					
Other comprehensive (loss) income, before tax	\$ (62,030)	\$ 633	\$ 10,867	\$ 4,847	\$ 3,336
Income tax expense	(1)	(1)	(2,426)	—	(745)
Other comprehensive (loss) income, net of tax	<u>\$ (62,031)</u>	<u>\$ 632</u>	<u>\$ 8,441</u>	<u>\$ 4,847</u>	<u>\$ 2,591</u>
<b>2018</b>					
Other comprehensive (loss) income, before tax	\$ (150,262)	\$ (128)	\$ 20,424	\$ —	\$ 3,336
Income tax benefit (expense)	4	(10)	5,362	—	(3,921)
Other comprehensive (loss) income, net of tax	<u>\$ (150,258)</u>	<u>\$ (138)</u>	<u>\$ 25,786</u>	<u>\$ —</u>	<u>\$ (585)</u>
<b>2017</b>					
Other comprehensive income (loss), before tax	\$ 228,508	\$ (96)	\$ (65,958)	\$ —	\$ 3,336
Income tax (expense) benefit	(1,069)	(1)	24,131	—	(1,220)
Other comprehensive income (loss), net of tax	<u>\$ 227,439</u>	<u>\$ (97)</u>	<u>\$ (41,827)</u>	<u>\$ —</u>	<u>\$ 2,116</u>

**NOTE 21—Income Taxes:**

Income before income taxes and equity in net income of unconsolidated investments, and current and deferred income tax expense (benefit) are composed of the following (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Income before income taxes and equity in net income of unconsolidated investments:			
Domestic	\$ 190,195	\$ 223,702	\$ (8,293)
Foreign	372,755	570,999	455,091
Total	<u>\$ 562,950</u>	<u>\$ 794,701</u>	<u>\$ 446,798</u>
Current income tax expense (benefit):			
Federal	\$ 21,258	\$ (2,712)	\$ 394,747
State	5,453	6,793	323
Foreign	47,056	91,581	78,688
Total	<u>\$ 73,767</u>	<u>\$ 95,662</u>	<u>\$ 473,758</u>
Deferred income tax (benefit) expense:			
Federal	\$ 13,255	\$ 15,573	\$ (58,640)
State	(7,369)	1,614	(2,288)
Foreign	8,508	31,977	18,987
Total	<u>\$ 14,394</u>	<u>\$ 49,164</u>	<u>\$ (41,941)</u>
Total income tax expense	<u>\$ 88,161</u>	<u>\$ 144,826</u>	<u>\$ 431,817</u>

The TCJA was signed into law in the U.S. in December 2017, after which the SEC staff issued SAB 118, which provided a measurement period of up to one year from the TCJA's enactment date for companies to complete their accounting under ASC 740, *Income Taxes*. In connection with the enactment of the TCJA, the Company recorded a net tax expense of \$366.9 million during 2017 and additional net benefits of \$29.3 million in 2018 including measurement period adjustments, primarily related to the one-time transition tax, the remeasurement of deferred tax assets and liabilities and other TCJA impacts.

The current and deferred income tax expense for 2019 decreased as a result of our geographic mix of earnings. The decrease in the current income tax expense from 2017 to 2018 is primarily related to the tax impact of the one-time transition

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

tax imposed by the TCJA recorded in 2017. The increase in the deferred tax expense from 2017 to 2018 is primarily related to the tax impact associated with the remeasurement of deferred tax assets and liabilities under the TCJA from a statutory rate of 35% to 21% recorded in 2017.

As of January 1, 2018, the Company recorded a cumulative adjustment to decrease Retained earnings by \$18.1 million as a result of the adoption of income tax standard updates.

The reconciliation of the U.S. federal statutory rate to the effective income tax rate is as follows:

	% of Income Before Income Taxes		
	2019	2018	2017
Federal statutory rate	21.0 %	21.0 %	35.0 %
State taxes, net of federal tax benefit	(0.5)	0.9	(0.5)
Change in valuation allowance <sup>(a)</sup>	1.9	0.7	(1.4)
Impact of foreign earnings, net <sup>(b)</sup>	(3.7)	(0.3)	(13.5)
Global intangible low tax inclusion	1.8	0.8	—
Change in U.S. federal statutory rate <sup>(c)</sup>	—	0.1	(14.0)
Transition tax on deferred foreign earnings <sup>(d)</sup>	—	(5.3)	96.1
Subpart F income	0.6	0.9	2.0
Undistributed earnings of foreign subsidiaries	—	—	(2.2)
Stock-based compensation	(0.6)	(0.7)	(1.9)
Depletion	(0.7)	(0.6)	(1.4)
Revaluation of unrecognized tax benefits/reserve requirements	(2.7)	—	(0.7)
Other items, net	(1.4)	0.7	(0.9)
Effective income tax rate	15.7 %	18.2 %	96.6 %

- (a) The year ended December 31, 2019 includes a \$2.1 million benefit due to the release of a foreign valuation allowance due to changes in expected profitability. 2018 includes an \$8.2 million expense due to the establishment of a valuation allowance due to a foreign restructuring plan and a \$1.5 million benefit due to the release of a foreign valuation allowance due to changes in expected profitability. 2017 includes a \$10.9 million benefit from the release of valuation allowances due to a foreign restructuring plan.
- (b) Our statutory rate is decreased by our share of the income of JBC, a Free Zones company under the laws of the Hashemite Kingdom of Jordan. The applicable provisions of the Jordanian law, and applicable regulations thereunder, do not have a termination provision and the exemption is indefinite. As a Free Zones company, JBC is not subject to income taxes on the profits of products exported from Jordan, and currently, substantially all of the profits are from exports. This resulted in a rate benefit of 8.0%, 3.3%, and 8.9% for 2019, 2018, and 2017, respectively.
- (c) At December 31, 2017 we made a reasonable estimate of the tax impact of the U.S. enacted tax law on our business and our consolidated financial statements and recorded a provisional tax benefit of \$62.3 million related to the remeasurement of our deferred tax assets and liabilities for the reduction in the Federal statutory tax rate from 35% to 21%. In 2018, the updates to our calculation of the remeasurement of deferred tax assets and liabilities resulted in income tax expense of \$0.4 million.
- (d) At December 31, 2017 we made a reasonable estimate of the tax impact of the U.S. enacted tax law on our business and our consolidated financial statements and recognized a provisional tax expense of \$429.2 million for the one-time transition tax. During 2018, the impact of the refined one-time transition tax calculation was an income tax benefit of \$42.3 million.



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Deferred income tax assets and liabilities recorded on the consolidated balance sheets as of December 31, 2019 and 2018 consist of the following (in thousands):

	December 31,	
	2019	2018
Deferred tax assets:		
Accrued employee benefits	\$ 17,462	\$ 18,462
Operating loss carryovers	1,134,410	1,210,377
Pensions	64,230	61,308
Tax credit carryovers	1,497	1,270
Other	64,955	35,895
Gross deferred tax assets	1,282,554	1,327,312
Valuation allowance	(1,148,268)	(1,213,750)
Deferred tax assets	134,286	113,562
Deferred tax liabilities:		
Depreciation	(349,264)	(337,503)
Intangibles	(88,934)	(88,871)
Hedge of net investment of foreign subsidiary	(23,498)	(21,854)
Other	(55,173)	(31,287)
Deferred tax liabilities	(516,869)	(479,515)
Net deferred tax liabilities	\$ (382,583)	\$ (365,953)
Classification in the consolidated balance sheets:		
Noncurrent deferred tax assets	\$ 15,275	\$ 17,029
Noncurrent deferred tax liabilities	(397,858)	(382,982)
Net deferred tax liabilities	\$ (382,583)	\$ (365,953)

Changes in the balance of our deferred tax asset valuation allowance are as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Balance at January 1	\$ (1,213,750)	\$ (458,288)	\$ (69,900)
Additions <sup>(a)</sup>	(24,986)	(766,012)	(408,252)
Deductions	90,468	10,550	19,864
Balance at December 31	\$ (1,148,268)	\$ (1,213,750)	\$ (458,288)

(a) During 2018, the Company recognized intercompany losses at a foreign entity related to international restructuring resulting in an increase to the deferred tax asset for net operating losses and an associated and equal valuation allowance of \$749.8 million.

At December 31, 2019, we had approximately \$1.5 million of domestic credits available to offset future payments of income taxes, expiring in varying amounts between 2020 and 2038. We have established valuation allowances for \$0.2 million of those domestic credits since we believe that it is more likely than not that the related deferred tax assets will not be realized. We believe that sufficient taxable income will be generated during the carryover period in order to utilize the other remaining credit carryovers.

At December 31, 2019, we have on a pre-tax basis, domestic state net operating losses of \$200.3 million, expiring between 2020 and 2039, which have pre-tax valuation allowances of \$63.6 million established. In addition, we have on a pre-tax basis \$4.52 billion of foreign net operating losses, which have pre-tax valuation allowances for \$4.49 billion established. \$2.76 billion of these foreign net operating losses expire in 2035 and \$1.75 billion have an indefinite life. We have established valuation allowances for these deferred tax assets since we believe that it is more likely than not that the related deferred tax assets will not be realized. For the same reason, we established pre-tax valuation allowances of \$56.7 million and \$77.7 million for other state and foreign deferred tax assets, respectively, unrelated to net operating losses. The realization of the deferred tax assets is dependent on the generation of sufficient taxable income in the appropriate tax jurisdictions. Although realization is not assured, we believe it is more likely than not that the remaining deferred tax assets will be realized. However, the amount considered realizable could be reduced if estimates of future taxable income change.

As of December 31, 2019, we have not recorded taxes on approximately \$4.2 billion of cumulative undistributed earnings of our non-U.S. subsidiaries and joint ventures. The TCJA imposed a mandatory transition tax on accumulated foreign earnings and generally eliminated U.S. taxes on foreign subsidiary distribution with the exception of foreign withholding taxes and other foreign local tax. We generally do not provide for taxes related to our undistributed earnings because such earnings either would not be taxable when remitted or they are considered to be indefinitely reinvested. If in the foreseeable future, we can no longer demonstrate that these earnings are indefinitely reinvested, a deferred tax liability will be recognized. A determination of the amount of the unrecognized deferred tax liability related to these undistributed earnings is not practicable due to the complexity and variety of assumptions necessary based on the manner in which the undistributed earnings would be repatriated.

Liabilities related to uncertain tax positions were \$21.2 million and \$22.9 million at December 31, 2019 and 2018, respectively, inclusive of interest and penalties of \$3.7 million and \$3.2 million at December 31, 2019 and 2018, respectively, and are reported in Other noncurrent liabilities as provided in Note 16, "Other Noncurrent Liabilities." These liabilities at December 31, 2019 and 2018 were reduced by \$26.1 million and \$13.0 million, respectively, for offsetting benefits from the corresponding effects of potential transfer pricing adjustments, state income taxes and rate arbitrage related to foreign structure. These offsetting benefits are recorded in Other assets as provided in Note 11, "Other Assets." The resulting net asset of \$8.6 million as of December 31, 2019 would unfavorably affect earnings if recognized and released, while the net liability of \$6.7 million at December 31, 2018 would favorably affect earnings if recognized and released.

The liabilities related to uncertain tax positions, exclusive of interest, were \$17.5 million and \$19.7 million at December 31, 2019 and 2018, respectively. The following is a reconciliation of our total gross liability related to uncertain tax positions for 2019, 2018 and 2017 (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Balance at January 1	\$ 19,742	\$ 21,438	\$ 25,384
Additions for tax positions related to prior years	2,235	874	—
Reductions for tax positions related to prior years	—	—	(1,933)
Additions for tax positions related to current year	—	1,091	1,132
Lapses in statutes of limitations/settlements	(4,494)	(3,578)	(4,198)
Foreign currency translation adjustment	65	(83)	1,053
Balance at December 31	\$ 17,548	\$ 19,742	\$ 21,438

We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Due to the statute of limitations, we are no longer subject to U.S. federal income tax audits by the Internal Revenue Service ("IRS") for years prior to 2011. Due to the statute of limitations, we also are no longer subject to U.S. state income tax audits prior to 2011.

With respect to jurisdictions outside the U.S., several audits are in process. We have audits ongoing for the years 2011 through 2018 related to Germany, Italy, India, Belgium, and Chile, some of which are for entities that have since been divested.

While we believe we have adequately provided for all tax positions, amounts asserted by taxing authorities could be greater than our accrued position. Accordingly, additional provisions on federal and foreign tax-related matters could be recorded in the future as revised estimates are made or the underlying matters are settled or otherwise resolved.

Since the timing of resolutions and/or closure of tax audits is uncertain, it is difficult to predict with certainty the range of reasonably possible significant increases or decreases in the liability related to uncertain tax positions that may occur within the next twelve months. Our current view is that it is reasonably possible that we could record a decrease in the liability related to uncertain tax positions, relating to a number of issues, up to approximately \$9.6 million as a result of closure of tax statutes.

#### NOTE 22—Fair Value of Financial Instruments:

In assessing the fair value of financial instruments, we use methods and assumptions that are based on market conditions and other risk factors existing at the time of assessment. Fair value information for our financial instruments is as follows:

**Long-Term Debt**—the fair values of our notes are estimated using Level 1 inputs and account for the difference between the recorded amount and fair value of our long-term debt. The carrying value of our remaining long-term debt reported in the accompanying consolidated balance sheets approximates fair value as substantially all of such debt bears interest based on prevailing variable market rates currently available in the countries in which we have borrowings.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

	December 31,			
	2019		2018	
	Recorded Amount	Fair Value	Recorded Amount	Fair Value
	(In thousands)			
Long-term debt	\$ 3,069,417	\$ 3,173,341	\$ 1,712,003	\$ 1,731,271

Foreign Currency Forward Contracts—In the fourth quarter of 2019, we entered into a foreign currency forward contract, with a notional value of 727.9 million Australian Dollars, to hedge the cash flow exposure of non-functional currency purchases during the construction of the Kemerton plant in Australia. This derivative financial instrument is used to manage risk and is not used for trading or other speculative purposes. This foreign currency forward contract has been designated as a hedging instrument under ASC 815, *Derivatives and Hedging*. At December 31, 2019, we had outstanding designated foreign currency forward contracts with notional values totaling the equivalent of \$481.2 million.

We also enter into foreign currency forward contracts in connection with our risk management strategies that have not been designated as hedging instruments under ASC 815, *Derivatives and Hedging*, in an attempt to minimize the financial impact of changes in foreign currency exchange rates. These derivative financial instruments are used to manage risk and are not used for trading or other speculative purposes. The fair values of our non-designated foreign currency forward contracts are estimated based on current settlement values. At December 31, 2019 and 2018, we had outstanding non-designated foreign currency forward contracts with notional values totaling \$1.15 billion and \$626.5 million, respectively, hedging our exposure to various currencies including the Euro, Chinese Renminbi, Chilean Peso and Australian Dollar.

The following table summarizes the fair value of our foreign currency forward contracts included in the consolidated balance sheets as of December 31, 2019 and 2018 (in thousands):

	Assets		Liabilities	
	December 31,		December 31,	
	2019	2018	2019	2018
Designated as hedging instruments <sup>(a)</sup>	\$ 5,369	\$ —	\$ —	\$ —
Not designated as hedging instruments <sup>(b)</sup>	2,032	431	3,613	—
Total	\$ 7,401	\$ 431	\$ 3,613	\$ —

(a) Included \$3.7 million in Other current assets and \$1.7 million in Other assets at December 31, 2019.

(b) Included \$2.0 million in Other current assets and \$3.6 million in Accrued expenses at December 31, 2019 and \$0.4 million in Other accounts receivable at December 31, 2018.

The following table summarizes the net gains (losses) recognized for our foreign currency forward contracts during the years ended December 31, 2019, 2018 and 2017 (in thousands):

	Year Ended December 31,		
	2019	2018	2017
<b>Designated as hedging instruments:</b>			
Gain recognized in Other comprehensive (loss) income	\$ 4,847	\$ —	\$ —
<b>Not designated as hedging instruments:</b>			
(Losses) gains recognized in Other expenses, net <sup>(a)</sup>	\$ (25,765)	\$ (19,851)	\$ 4,588

(a) Fluctuations in the value of our foreign currency forward contracts not designated as hedging instruments are generally expected to be offset by changes in the value of the underlying exposures being hedged, which are also reported in Other expenses, net.

In addition, for the years ended December 31, 2019, 2018 and 2017, we recorded net cash (settlements) receipts of (\$23.6) million, (\$25.2) million and \$9.4 million, respectively, in Other, net, in our consolidated statements of cash flows.

As of December 31, 2019, there are no unrealized gains or losses related to the cash flow hedge expected to be reclassified to earnings in the next twelve months.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

The counterparties to our foreign currency forward contracts are major financial institutions with which we generally have other financial relationships. We are exposed to credit loss in the event of nonperformance by these counterparties. However, we do not anticipate nonperformance by the counterparties.

**NOTE 23—Fair Value Measurement:**

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). The inputs used to measure fair value are classified into the following hierarchy:

Level 1	Unadjusted quoted prices in active markets for identical assets or liabilities
Level 2	Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability
Level 3	Unobservable inputs for the asset or liability

We endeavor to utilize the best available information in measuring fair value. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The following tables set forth our financial assets and liabilities that were accounted for at fair value on a recurring basis as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	Quoted Prices in Active Markets for Identical Items (Level 1)	Quoted Prices in Active Markets for Similar Items (Level 2)	Unobservable Inputs (Level 3)
<b>Assets:</b>				
Investments under executive deferred compensation plan <sup>(a)</sup>	\$ 28,715	\$ 28,715	\$ —	\$ —
Private equity securities <sup>(b)</sup>	\$ 32	\$ 32	\$ —	\$ —
Private equity securities measured at net asset value <sup>(b)(c)</sup>	\$ 4,890	\$ —	\$ —	\$ —
Foreign currency forward contracts <sup>(d)</sup>	\$ 7,401	\$ —	\$ 7,401	\$ —

**Liabilities:**

Obligations under executive deferred compensation plan <sup>(a)</sup>	\$ 28,715	\$ 28,715	\$ —	\$ —
Foreign currency forward contracts <sup>(d)</sup>	\$ 3,613	\$ —	\$ 3,613	\$ —

	December 31, 2018	Quoted Prices in Active Markets for Identical Items (Level 1)	Quoted Prices in Active Markets for Similar Items (Level 2)	Unobservable Inputs (Level 3)
<b>Assets:</b>				
Investments under executive deferred compensation plan <sup>(a)</sup>	\$ 26,292	\$ 26,292	\$ —	\$ —
Private equity securities <sup>(b)</sup>	\$ 26	\$ 26	\$ —	\$ —
Private equity securities measured at net asset value <sup>(b)(c)</sup>	\$ 7,195	\$ —	\$ —	\$ —
Foreign currency forward contracts <sup>(d)</sup>	\$ 431	\$ —	\$ 431	\$ —

**Liabilities:**

Obligations under executive deferred compensation plan <sup>(a)</sup>	\$ 26,292	\$ 26,292	\$ —	\$ —
---	-----------	-----------	------	------

(a) We maintain an EDCP that was adopted in 2001 and subsequently amended. The purpose of the EDCP is to provide current tax planning opportunities as well as supplemental funds upon the retirement or death of certain of our employees. The EDCP is intended to aid in attracting and retaining employees of exceptional ability by providing them with these benefits. We also maintain a Benefit Protection Trust (the "Trust") that was created to provide a source of funds to assist in meeting the obligations of the EDCP, subject to the claims of our creditors in the event of our insolvency. Assets of the Trust are consolidated in accordance with authoritative guidance. The assets of the Trust consist primarily of mutual fund investments (which are accounted for as trading securities and are marked-to-market on a

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- monthly basis through the consolidated statements of income) and cash and cash equivalents. As such, these assets and obligations are classified within Level 1.
- (b) Primarily consists of private equity securities classified as available-for-sale and are reported in Investments in the consolidated balance sheets. The changes in fair value are reported in Other expenses, net, in our consolidated statements of income.
- (c) Holdings in private equity securities are measured at fair value using the net asset value per share (or its equivalent) practical expedient and have not been categorized in the fair value hierarchy. The fair value amounts of \$4.9 million and \$7.2 million as of December 31, 2019 and 2018, respectively, are included in this table to permit reconciliation to the marketable equity securities presented in Note 10, "Investments."
- (d) As a result of our global operating and financing activities, we are exposed to market risks from changes in foreign currency exchange rates, which may adversely affect our operating results and financial position. When deemed appropriate, we minimize our risks from foreign currency exchange rate fluctuations through the use of foreign currency forward contracts. The foreign currency forward contracts are valued using broker quotations or market transactions in either the listed or over-the-counter markets. As such, these derivative instruments are classified within Level 2. See Note 22, "Fair Value of Financial Instruments," for further details about our foreign currency forward contracts.

**NOTE 24—Related Party Transactions:**

Our consolidated statements of income include sales to and purchases from unconsolidated affiliates in the ordinary course of business as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Sales to unconsolidated affiliates	\$ 20,068	\$ 35,094	\$ 29,514
Purchases from unconsolidated affiliates <sup>(a)</sup>	\$ 210,351	\$ 256,701	\$ 209,266

- (a) Purchases from unconsolidated affiliates primarily relate to purchases from our Windfield joint venture.

Our consolidated balance sheets include accounts receivable due from and payable to unconsolidated affiliates in the ordinary course of business as follows (in thousands):

	December 31,	
	2019	2018
Receivables from related parties	\$ 7,163	\$ 14,348
Payables to related parties	\$ 35,502	\$ 68,357

**NOTE 25—Segment and Geographic Area Information:**

Our three reportable segments include: (1) Lithium; (2) Bromine Specialties; and (3) Catalysts. Each segment has a dedicated team of sales, research and development, process engineering, manufacturing and sourcing, and business strategy personnel and has full accountability for improving execution through greater asset and market focus, agility and responsiveness. This business structure aligns with the markets and customers we serve through each of the segments. This structure also facilitates the continued standardization of business processes across the organization, and is consistent with the manner in which information is presently used internally by the Company's chief operating decision maker to evaluate performance and make resource allocation decisions.

Summarized financial information concerning our reportable segments is shown in the following tables. The "All Other" category includes only the fine chemistry services business that does not fit into any of our core businesses.

The Corporate category is not considered to be a segment and includes corporate-related items not allocated to the operating segments. Pension and OPEB service cost (which represents the benefits earned by active employees during the period) and amortization of prior service cost or benefit are allocated to the reportable segments, All Other, and Corporate, whereas the remaining components of pension and OPEB benefits cost or credit ("Non-operating pension and OPEB items") are included in Corporate. Segment data includes intersegment transfers of raw materials at cost and allocations for certain corporate costs.

The Company's chief operating decision maker uses adjusted EBITDA (as defined below) to assess the ongoing performance of the Company's business segments and to allocate resources. The Company defines adjusted EBITDA as earnings before interest, taxes, depreciation and amortization, as adjusted on a consistent basis for certain non-recurring or unusual items in a balanced manner and on a segment basis. These non-recurring or unusual items may include acquisition and

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

integration related costs, gains or losses on sales of businesses, restructuring charges, facility divestiture charges, non-operating pension and OPEB items and other significant non-recurring items. In addition, management uses adjusted EBITDA for business planning purposes and as a significant component in the calculation of performance-based compensation for management and other employees. The Company has reported adjusted EBITDA because management believes it provides transparency to investors and enables period-to-period comparability of financial performance. Adjusted EBITDA is a financial measure that is not required by, or presented in accordance with, U.S. GAAP. Adjusted EBITDA should not be considered as an alternative to Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with U.S. GAAP, or any other financial measure reported in accordance with U.S. GAAP.

	Year Ended December 31,		
	2019	2018	2017
(In thousands)			
<b>Net sales:</b>			
Lithium	\$ 1,358,170	\$ 1,228,171	\$ 1,018,885
Bromine Specialties	1,004,216	917,880	855,143
Catalysts	1,061,817	1,101,554	1,067,572
All Other	165,224	127,186	128,914
Corporate	—	159	1,462
Total net sales	<u>\$ 3,589,427</u>	<u>\$ 3,374,950</u>	<u>\$ 3,071,976</u>
<b>Adjusted EBITDA:</b>			
Lithium	\$ 524,934	\$ 530,773	\$ 446,652
Bromine Specialties	328,457	288,116	258,901
Catalysts	270,624	284,307	283,883
All Other	49,628	14,091	13,878
Corporate	(136,862)	(110,623)	(117,834)
Total adjusted EBITDA	<u>\$ 1,036,781</u>	<u>\$ 1,006,664</u>	<u>\$ 885,480</u>

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

See below for a reconciliation of adjusted EBITDA, the non-GAAP financial measure, from Net income attributable to Albemarle Corporation, the most directly comparable financial measure calculated and reported in accordance with U.S. GAAP (in thousands):

	Lithium	Bromine Specialties	Catalysts	Reportable Segments Total	All Other	Corporate	Consolidated Total
<b>2019</b>							
Net income (loss) attributable to Albemarle Corporation	\$ 341,767	\$ 279,945	\$ 219,686	\$ 841,398	\$ 41,188	\$ (349,358)	\$ 533,228
Depreciation and amortization	99,424	47,611	50,144	197,179	8,440	7,865	213,484
Restructuring and other(a)	—	—	—	—	—	5,877	5,877
Acquisition and integration related costs(b)	—	—	—	—	—	20,684	20,684
Gain on sale of property(c)	—	—	—	—	—	(14,411)	(14,411)
Interest and financing expenses(d)	—	—	—	—	—	57,695	57,695
Income tax expense	—	—	—	—	—	88,161	88,161
Non-operating pension and OPEB items	—	—	—	—	—	26,970	26,970
Stamp duty(b)	64,766	—	—	64,766	—	—	64,766
Windfield tax settlement(e)	17,292	—	—	17,292	—	—	17,292
Other(f)	1,685	901	794	3,380	—	19,655	23,035
Adjusted EBITDA	\$ 524,934	\$ 328,457	\$ 270,624	\$ 1,124,015	\$ 49,628	\$ (136,862)	\$ 1,036,781
<b>2018</b>							
Net income (loss) attributable to Albemarle Corporation	\$ 428,212	\$ 246,509	\$ 445,604	\$ 1,120,325	\$ 6,018	\$ (432,781)	\$ 693,562
Depreciation and amortization	95,193	41,607	49,131	185,931	8,073	6,694	200,698
Restructuring and other(a)	—	—	—	—	—	3,838	3,838
Gain on sale of business(g)	—	—	(210,428)	(210,428)	—	—	(210,428)
Acquisition and integration related costs(b)	—	—	—	—	—	19,377	19,377
Interest and financing expenses	—	—	—	—	—	52,405	52,405
Income tax expense	—	—	—	—	—	144,826	144,826
Non-operating pension and OPEB items	—	—	—	—	—	5,285	5,285
Legal accrual(h)	—	—	—	—	—	27,027	27,027
Environmental accrual(i)	—	—	—	—	—	15,597	15,597
Albemarle Foundation contribution(j)	—	—	—	—	—	15,000	15,000
Indemnification adjustments(k)	—	—	—	—	—	25,240	25,240
Other(l)	7,368	—	—	7,368	—	6,869	14,237
Adjusted EBITDA	\$ 530,773	\$ 288,116	\$ 284,307	\$ 1,103,196	\$ 14,091	\$ (110,623)	\$ 1,006,664
<b>2017</b>							
Net income (loss) attributable to Albemarle Corporation	\$ 342,992	\$ 218,839	\$ 230,665	\$ 792,496	\$ 5,521	\$ (743,167)	\$ 54,850
Depreciation and amortization	87,879	40,062	54,468	182,409	8,357	6,162	196,928
Utilization of inventory markup(m)	23,095	—	—	23,095	—	—	23,095
Restructuring and other(n)	—	—	—	—	—	17,056	17,056
Gain on acquisition(o)	(6,221)	—	—	(6,221)	—	—	(6,221)
Acquisition and integration related costs(b)	—	—	—	—	—	33,954	33,954
Interest and financing expenses(p)	—	—	—	—	—	115,350	115,350
Income tax expense	—	—	—	—	—	431,817	431,817
Non-operating pension and OPEB items	—	—	—	—	—	(16,125)	(16,125)
Note receivable reserve(q)	—	—	—	—	—	28,730	28,730
Other(r)	(1,093)	—	(1,250)	(2,343)	—	8,389	6,046
Adjusted EBITDA	\$ 446,652	\$ 258,901	\$ 283,883	\$ 989,436	\$ 13,878	\$ (117,834)	\$ 885,480

(a) Severance payments as part of a business reorganization plan, \$5.9 million recorded in Selling, general and administrative expenses for the year ended December 31, 2019 and \$0.1 million and \$3.7 million recorded in Cost of goods sold and Selling, general and administrative expenses, respectively, for the year ended December 31, 2018.

(b) See Note 2, "Acquisitions," for additional information.

- (c) Gain of \$3.3 million recorded in Selling, general and administrative expenses related to the release of liabilities as part of the sale of a property and \$11.1 million gain recorded in Other expenses, net related to the sale of land in Pasadena, Texas not used as part of our operations.
- (d) Included in Interest and financing expenses is a loss on early extinguishment of debt of \$4.8 million. See Note 14, "Long-Term Debt," for additional information.
- (e) Represents our 49% share of a tax settlement between our Windfield joint venture and an Australian taxing authority, recorded in Equity in net income of unconsolidated investments (net of tax). This is offset in Income tax expense by a discrete tax benefit related to seeking treaty relief from the competent authority to prevent double taxation.
- (f) Included amounts for the year ended December 31, 2019 recorded in:
- Cost of goods sold - \$0.7 million related to non-routine labor and compensation related costs in Chile that are outside normal compensation arrangements.
  - Selling, general and administrative expenses - \$1.8 million of shortfall contributions for our multiemployer plan financial improvement plan, \$0.9 million of a write-off of uncollectable accounts receivable from a terminated distributor in the Bromine Specialties segment, \$1.0 million related to the settlement of terminated agreements, primarily in the Catalysts segment, and \$0.8 million related to the settlement of an ongoing audit in the Lithium segment.
  - Other expenses, net - \$3.1 million of unrecoverable vendor costs outside the operations of the business related to the construction of the future Kemerton production facility, \$9.8 million of a net loss primarily resulting from the adjustment of indemnifications and other liabilities related to previously disposed businesses or purchase accounting, \$3.6 million of asset retirement obligation charges related to the update of an estimate at a site formerly owned by Albemarle, and \$1.2 million of non-operating pension costs from our 50% interest in JBC.
- (g) See Note 3, "Divestitures," for additional information.
- (h) Included in Other expenses, net. See Note 17, "Commitments and Contingencies," for additional information.
- (i) Increase in environmental reserve to indemnify the buyer of a formerly owned site recorded in Other expenses, net. As defined in the agreement of sale, this indemnification has a set cutoff date in 2024, at which point we will no longer be required to provide financial coverage.
- (j) Included in Selling, general and administrative expenses is a charitable contribution, using a portion of the proceeds received from the Polyolefin Catalysts Divestiture, to the Albemarle Foundation, a non-profit organization that sponsors grants, health and social projects, educational initiatives, disaster relief, matching gift programs, scholarships and other charitable initiatives in locations where our employees live and operate. This contribution is in addition to the normal annual contribution made to the Albemarle Foundation by the Company, and is significant in size and nature in that it is intended to provide more long-term benefits in the communities where we live and operate.
- (k) Included in Other expenses, net is \$19.7 million related to the proposed settlement of an ongoing audit of a previously disposed business in Germany, and \$5.5 million related to the adjustment of indemnifications previously recorded from disposed businesses.
- (l) Included amounts for the year ended December 31, 2018 recorded in:
- Cost of goods sold - \$4.9 million for the write-off of fixed assets related to a major capacity expansion in our Jordanian joint venture and \$8.8 million related to non-routine labor and compensation related costs in Chile that are outside normal compensation arrangements.
  - Selling, general and administrative expenses - \$2.3 million of shortfall contributions for our multiemployer plan financial improvement plan and a \$1.2 million contribution, using a portion of the proceeds received from the Polyolefin Catalysts Divestiture, to schools in the state of Louisiana for qualified tuition purposes. This contribution is significant in size and is intended to provide long-term benefits for families in the Louisiana community. This was partially offset by a \$1.5 million gain related to a refund from Chilean authorities due to an overpayment made in a prior year.
  - Other expenses, net - \$1.5 million gain related to the reversal of previously recorded liabilities of disposed businesses.
- (m) In connection with the acquisition of Jiangli New Materials, completed on December 31, 2016, the Company valued inventory purchased from Jiangli New Materials at fair value, which resulted in a markup of the underlying net book value of the inventory totaling approximately \$23.1 million. The utilization of this inventory markup was included in Costs of goods sold during the year ended December 31, 2017, the estimated remaining selling period.
- (n) During 2017, we initiated action to reduce costs in each of our reportable segments at several locations, primarily at our Lithium sites in Germany. Based on the restructuring plans, we have recorded expenses of \$2.9 million in Cost of goods sold, \$8.4 million in Selling, general and administrative expenses, and \$5.7 million in Research and development expenses, primarily related to expected severance payments.
- (o) Gain recorded in Other expenses, net related to the acquisition of the remaining 50% interest in Salmag. See Note 2, "Acquisitions," for additional information.
- (p) During the first quarter of 2017, we repaid the 3.00% Senior notes in full, €307.0 million of the 1.875% Senior notes and \$174.7 million of the 4.50% Senior notes, as well as related tender premiums of \$45.2 million. As a result, included in Interest and financing expenses is a loss on early extinguishment of debt of \$52.8 million, representing the tender premiums, fees, unamortized discounts and unamortized deferred financing costs from the redemption of these senior notes.
- (q) Reserve recorded in Other expenses, net against a note receivable on one of our European entities no longer deemed probable of collection.
- (r) Included amounts for the year ended December 31, 2017 recorded in:
- Cost of goods sold - \$1.3 million reversal of deferred income related to an abandoned project at an unconsolidated investment.
  - Selling, general and administrative expenses - \$3.3 million of shortfall contributions for our multiemployer plan financial improvement plan, partially offset by \$1.0 million related to a reversal of an accrual recorded as part of purchase accounting from a previous acquisition.



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- Other expenses, net - \$3.2 million of asset retirement obligation charges related to the update of an estimate at a site formerly owned by Albemarle, losses of \$8.7 million related to adjustments of settlements and indemnifications of previously disposed businesses, the adjustment of tax indemnification expenses of \$3.7 million primarily related to the filing of tax returns and a competent authority agreement for a previously disposed business and \$1.0 million related to the settlement of a legal claim. This is partially offset by gains of \$10.6 million and \$1.1 million related to the reversal of liabilities recorded as part of purchase accounting from a previous acquisition and the previous disposal of a property, respectively.

	December 31,		
	2019	2018	2017
	(In thousands)		
<b>Identifiable assets:</b>			
Lithium <sup>(a)</sup>	\$ 6,570,791	\$ 4,605,070	\$ 3,979,615
Bromine Specialties	799,456	753,157	745,007
Catalysts	1,163,590	1,134,975	1,332,599
All Other	146,211	128,185	126,486
Corporate <sup>(b)</sup>	1,180,815	960,287	1,567,065
Total identifiable assets	<u>\$ 9,860,863</u>	<u>\$ 7,581,674</u>	<u>\$ 7,750,772</u>

(a) Increase in Lithium identifiable assets at December 31, 2019 primarily due to the acquisition of 60% interest in MRL's Wodgina Project assets, as well as capital expenditures for growth and capacity increases.

(b) Decrease in Corporate identifiable assets at December 31, 2018 primarily due to the net use of cash and cash equivalents for items such as capital expenditures, share repurchases and commercial paper repayments.

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
<b>Depreciation and amortization:</b>			
Lithium	\$ 99,424	\$ 95,193	\$ 87,879
Bromine Specialties	47,611	41,607	40,062
Catalysts	50,144	49,131	54,468
All Other	8,440	8,073	8,357
Corporate	7,865	6,694	6,162
Total depreciation and amortization	<u>\$ 213,484</u>	<u>\$ 200,698</u>	<u>\$ 196,928</u>

<b>Capital expenditures:</b>			
Lithium	\$ 665,585	\$ 500,849	\$ 192,318
Bromine Specialties	82,208	79,357	46,427
Catalysts	57,939	52,019	46,808
All Other	7,309	5,232	3,657
Corporate	38,755	62,534	28,493
Total capital expenditures	<u>\$ 851,796</u>	<u>\$ 699,991</u>	<u>\$ 317,703</u>

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
<b>Net Sales<sup>(a)</sup>:</b>			
United States	\$ 858,084	\$ 887,416	\$ 840,589
Foreign <sup>(b)</sup>	2,731,343	2,487,534	2,231,387
Total	<u>\$ 3,589,427</u>	<u>\$ 3,374,950</u>	<u>\$ 3,071,976</u>

(a) Net sales are attributed to countries based upon shipments to final destination.

(b) In 2019, net sales to Korea, China and Japan represented 17%, 13%, and 12%, respectively, of total net sales. In 2018, net sales to Korea, China and Japan represented 13%, 12%, and 10%, respectively, of total net sales. In 2017, net sales to China represented 15% of total net sales. No net sales in any other foreign country exceed 10% of total net sales.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

	As of December 31,		
	2019	2018	2017
	(In thousands)		
<b>Long-Lived Assets<sup>(a)</sup>:</b>			
United States	\$ 1,003,496	\$ 929,291	\$ 833,002
Australia	1,981,642	407,141	364,624
Chile	1,687,090	1,406,478	1,069,859
Jordan	256,363	254,800	242,626
Netherlands	165,782	166,853	171,980
China	109,235	91,160	50,532
Germany	89,568	101,168	115,305
France	44,936	43,698	40,852
Brazil	37,165	40,464	47,255
Other foreign countries	68,499	65,937	60,626
Total	<u>\$ 5,443,776</u>	<u>\$ 3,506,990</u>	<u>\$ 2,996,661</u>

(a) Long-lived assets are comprised of the Company's Property, plant and equipment and joint ventures included in Investments.

**NOTE 26—Quarterly Financial Summary (Unaudited):**

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share amounts)			
<b>2019</b>				
Net sales	\$ 832,064	\$ 885,052	\$ 879,747	\$ 992,564
Gross profit <sup>(a)</sup>	\$ 283,486	\$ 325,914	\$ 309,867	\$ 338,511
Net income	\$ 151,526	\$ 174,970	\$ 171,618	\$ 106,243
Net income attributable to noncontrolling interests	(17,957)	(20,772)	(16,548)	(15,852)
Net income attributable to Albemarle Corporation	<u>\$ 133,569</u>	<u>\$ 154,198</u>	<u>\$ 155,070</u>	<u>\$ 90,391</u>
Basic earnings per share	\$ 1.26	\$ 1.46	\$ 1.46	\$ 0.85
Shares used to compute basic earnings per share	105,799	105,961	105,999	106,037
Diluted earnings per share	\$ 1.26	\$ 1.45	\$ 1.46	\$ 0.85
Shares used to compute diluted earnings per share	106,356	106,316	106,299	106,314
<b>2018</b>				
Net sales	\$ 821,629	\$ 853,874	\$ 777,748	\$ 921,699
Gross profit	\$ 304,979	\$ 311,356	\$ 280,537	\$ 320,384
(Gain) loss on sale of business, net <sup>(b)</sup>	\$ —	\$ (218,705)	\$ —	\$ 8,277
Net income	\$ 138,925	\$ 310,686	\$ 143,479	\$ 146,049
Net income attributable to noncontrolling interests	(7,165)	(8,225)	(13,734)	(16,453)
Net income attributable to Albemarle Corporation	<u>\$ 131,760</u>	<u>\$ 302,461</u>	<u>\$ 129,745</u>	<u>\$ 129,596</u>
Basic earnings per share	\$ 1.19	\$ 2.76	\$ 1.21	\$ 1.22
Shares used to compute basic earnings per share	110,681	109,671	107,315	106,042
Diluted earnings per share	\$ 1.18	\$ 2.73	\$ 1.20	\$ 1.21
Shares used to compute diluted earnings per share	111,867	110,659	108,302	107,005

(a) Cost of goods sold for the third quarter of 2019 included expense of \$7.0 million due to the correction of an out-of-period error regarding carbonate inventory values related to the second quarter of 2019.

(b) Represents the gain (loss) on the Polyolefin Catalysts Divestiture. See Note 3, "Divestitures," for additional information.

As discussed in Note 1, “Summary of Significant Accounting Policies,” actuarial gains and losses related to our defined benefit pension and OPEB plan obligations are recognized annually in our consolidated statements of income in the fourth quarter and whenever a plan is determined to qualify for a remeasurement during a fiscal year. During the year ended December 31, 2019, actuarial losses were recognized as follows: fourth quarter—\$29.3 million (\$21.1 million after income taxes) as a result of the annual remeasurement process. During the year ended December 31, 2018, actuarial losses were recognized as follows: fourth quarter—\$14.0 million (\$10.6 million after income taxes) as a result of the annual remeasurement process.

**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.**

NONE

**Item 9A. Controls and Procedures.**

***Evaluation of Disclosure Controls and Procedures***

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act), as of the end of the period covered by this report. Based on this evaluation, our principal executive officer and principal financial officer concluded that, as of the end of the period covered by this report, our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

***Design and Evaluation of Internal Control over Financial Reporting***

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) and 15d-15(f). Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria for effective internal control over financial reporting described in the “Internal Control-Integrated Framework” (2013) set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting was effective based on those criteria.

The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included herein. Management’s report and the independent registered public accounting firm’s report are included in Item 8 under the captions entitled “Management’s Report on Internal Control over Financial Reporting” and “Report of Independent Registered Public Accounting Firm” and are incorporated herein by reference.

***Changes in Internal Control over Financial Reporting***

The Company has begun the implementation of a new enterprise resource platform system to increase the overall efficiency and productivity of our processes, which has resulted in changes in our internal control over financial reporting (as such term is defined in Exchange Act Rule 13a-15(f)) throughout the implementation process in 2019. No other changes in our internal control over financial reporting (as such term is defined in Exchange Act Rule 13a-15(f)) occurred during the fiscal quarter ended December 31, 2019 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Item 9B. Other Information.**

NONE

### PART III

#### **Item 10. Directors, Executive Officers and Corporate Governance.**

The information required by this Item 10 will be contained in the Proxy Statement and is incorporated herein by reference. In addition, the information in “Executive Officers of the Registrant” appearing after Item 4 in Part I of this Annual Report, is incorporated herein by reference.

##### ***Code of Conduct***

We have adopted a code of conduct and ethics for directors, officers and employees, known as the Albemarle Code of Conduct. The Albemarle Code of Conduct is available on our website, [www.albemarle.com](http://www.albemarle.com). Shareholders may also request a free copy of the Albemarle Code of Conduct from: Albemarle Corporation, Attention: Investor Relations, 4250 Congress Street, Suite 900, Charlotte, North Carolina 28209. We will disclose any amendments to, or waivers from, a provision of our Code of Conduct that applies to the principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions that relates to any element of the Code of Conduct as defined in Item 406 of Regulation S-K by posting such information on our website.

##### ***New York Stock Exchange Certifications***

Because our common stock is listed on the New York Stock Exchange (“NYSE”), our Chief Executive Officer is required to make, and he has made, an annual certification to the NYSE stating that he was not aware of any violation by us of the corporate governance listing standards of the NYSE. Our Chief Executive Officer made his annual certification to that effect to the NYSE as of June 3, 2019. In addition, we have filed, as exhibits to this Annual Report on Form 10-K, the certifications of our principal executive officer and principal financial officer required under Sections 906 and 302 of the Sarbanes-Oxley Act of 2002 to be filed with the Securities and Exchange Commission regarding the quality of our public disclosure.

Additional information will be contained in the Proxy Statement and is incorporated herein by reference.

#### **Item 11. Executive Compensation.**

The information required by this Item 11 will be contained in the Proxy Statement and is incorporated herein by reference.

#### **Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.**

The information required by this Item 12 will be contained in the Proxy Statement and is incorporated herein by reference.

#### **Item 13. Certain Relationships and Related Transactions, and Director Independence.**

The information required by this Item 13 will be contained in the Proxy Statement and is incorporated herein by reference.

#### **Item 14. Principal Accountant Fees and Services.**

The information required by this Item 14 will be contained in the Proxy Statement and is incorporated herein by reference.

### PART IV

#### **Item 15. Exhibits and Financial Statement Schedules.**

(a)(1) The following consolidated financial and informational statements of the registrant are included in Part II Item 8 on pages 51 to 106:

Management’s Report on Internal Control Over Financial Reporting

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2019 and 2018

Consolidated Statements of Income, Comprehensive Income, Changes in Equity and Cash Flows for the years ended December 31, 2019, 2018 and 2017

Notes to the Consolidated Financial Statements

(a)(2) No Financial Statement Schedules are provided in accordance with Item 15(a)(2) as the information is either not applicable, not required or has been furnished in the Consolidated Financial Statements or Notes thereto.

(a)(3) Exhibits

The following documents are filed as exhibits to this Annual Report on Form 10-K pursuant to Item 601 of Regulation S-K:

- [2.1 Agreement and Plan of Merger, dated as of July 15, 2014, among Albemarle Corporation, Albemarle Holdings Corporation and Rockwood Holdings, Inc. \[filed as Exhibit 2.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on July 18, 2014, and incorporated herein by reference\].](#)
- [2.2 Share Purchase Agreement, dated as of June 17, 2016, between Albemarle Corporation and BASF SE \[filed as Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 \(No. 1-12658\), filed on August 5, 2016, and incorporated herein by reference\].](#)
- [2.3 First Amendment to the Share Purchase Agreement, dated December 7, 2016, between Albemarle Corporation and BASF SE \[filed as Exhibit 2.3 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [2.4 Second Amendment to the Share Purchase Agreement, dated December 14, 2016, between Albemarle Corporation and BASF SE \[filed as Exhibit 2.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [3.1 Amended and Restated Articles of Incorporation of Albemarle Corporation \[filed as Exhibit 3.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on May 12, 2017, and incorporated herein by reference\].](#)
- [3.2 Amended and Restated Bylaws, effective July 23, 2019, of Albemarle Corporation \[filed as Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2019, and incorporated herein by reference\].](#)
- [4.1 Indenture, dated as of January 20, 2005, between Albemarle Corporation and The Bank of New York, as trustee \[filed as Exhibit 4.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on January 20, 2005, and incorporated herein by reference\].](#)
- [4.2 Second Supplemental Indenture, dated as of December 10, 2010, between Albemarle Corporation and The Bank of New York Mellon Trust Company, N.A., as successor trustee to The Bank of New York \[filed as Exhibit 4.2 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 10, 2010, and incorporated herein by reference\].](#)
- [4.3 Third Supplemental Indenture, dated as of November 24, 2014, among Albemarle Corporation, Albemarle Holdings Corporation \(now Rockwood Holdings, Inc.\) and Albemarle Holdings II Corporation \(now Rockwood Specialties Group, Inc.\) and U.S. Bank National Association, as trustee \[filed as Exhibit 4.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 24, 2014, and incorporated herein by reference\].](#)
- [4.4 Fourth Supplemental Indenture, dated as of January 29, 2015, among Albemarle Corporation, Rockwood Holdings, Inc. \(as successor by merger to Albemarle Holdings Corporation\), Rockwood Specialties Group, Inc. \(as successor by merger to Albemarle Holdings II Corporation\), The Bank of New York Mellon Trust Company, N.A., a national banking association, as successor to The Bank of New York, as resigning trustee, and U.S. Bank National Association, as successor trustee \[filed as Exhibit 4.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on January 29, 2015, and incorporated herein by reference\].](#)
- [4.5 Form of Global Security for the 4.50% Senior Notes due 2020 \[filed as Exhibit 4.3 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 10, 2010, and incorporated herein by reference\].](#)

- [4.6](#) [Form of Global Security for the 4.150% Senior Notes due 2024 \[filed as Exhibit 4.3 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 24, 2014, and incorporated herein by reference\].](#)
- [4.7](#) [Form of Global Security for the 5.450% Senior Notes due 2044 \[filed as Exhibit 4.4 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 24, 2014, and incorporated herein by reference\].](#)
- [4.8](#) [Form of Global Security for the 1.875% Senior Notes due 2021 \[filed as Exhibit 4.8 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [4.9](#) [Fifth Supplemental Indenture, dated as of November 25, 2019, among Albemarle Corporation, Albemarle Wodgina Pty Ltd and U.S. Bank National Association, as trustee \[filed as Exhibit 4.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 25, 2019, and incorporated herein by reference\].](#)
- [4.10](#) [Form of Floating Rate Note due 2022 \[filed as Exhibit 4.2 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 25, 2019, and incorporated herein by reference\].](#)
- [4.11](#) [Form of 3.450% Note due 2029 \[filed as Exhibit 4.3 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 25, 2019, and incorporated herein by reference\].](#)
- [4.12](#) [Form of 1.125% Note due 2025 \[filed as Exhibit 4.4 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 25, 2019, and incorporated herein by reference\].](#)
- [4.13](#) [Form of 1.625% Note due 2028 \[filed as Exhibit 4.5 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on November 25, 2019, and incorporated herein by reference\].](#)
- [\\*4.14](#) [Description of Securities](#)
- [#10.1](#) [2013 Stock Compensation and Deferral Election Plan for Non-Employee Directors of Albemarle Corporation \[filed as Annex A to the Company's definitive Proxy Statement on Schedule 14A \(No. 1-12658\) filed on March 28, 2013, and incorporated herein by reference\].](#)
- [#10.2](#) [First Amendment to the Albemarle Corporation Stock Compensation and Deferral Election Plan \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.3](#) [Compensation Arrangement with Luther C. Kissam, IV, dated August 29, 2003 \[filed as Exhibit 10.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.4](#) [Form of Notice of Option Grant under the Albemarle Corporation 2008 Incentive Plan \[filed as Exhibit 10.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on March 2, 2016, and incorporated herein by reference\].](#)
- [#10.5](#) [Form of Notice of TSR Performance Unit Award \[filed as Exhibit 10.3 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on March 2, 2016, and incorporated herein by reference\].](#)
- [#10.6](#) [Form Notice of Restricted Stock Unit Award under the Albemarle Corporation 2008 Incentive Plan \[filed as Exhibit 10.4 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 9, 2016, and incorporated herein by reference\].](#)
- [#10.7](#) [Form of Notice of TSR Performance Unit Award under the Albemarle Corporation 2008 Incentive Plan \[filed as Exhibit 10.5 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 9, 2016, and incorporated herein by reference\].](#)
- [#10.8](#) [Form of Notice of TSR Performance Unit Award under the Albemarle Corporation 2017 Incentive Plan \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on May 9, 2018, and incorporated herein by reference\].](#)

- #10.9 [Form of Notice of Option Grant under the Albemarle Corporation 2017 Incentive Plan \[filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on May 9, 2018, and incorporated herein by reference\].](#)
- #10.10 [Form of Notice of Restricted Stock Unit Award under the Albemarle Corporation 2017 Incentive Plan \[filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on May 9, 2018, and incorporated herein by reference\].](#)
- #10.11 [Form of Notice of ROIC Performance Unit Award under the Albemarle Corporation 2017 Incentive Plan \[filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on May 8, 2019, and incorporated herein by reference\].](#)
- #10.12 [Notice of 3-Year Cliff Vest Restricted Stock Unit Award under the Albemarle Corporation 2017 Incentive Plan \[filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on May 8, 2019, and incorporated herein by reference\].](#)
- #10.13 [Amended and Restated Albemarle Corporation Supplemental Executive Retirement Plan, effective as of January 1, 2005 \[filed as Exhibit 10.13 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.14 [First Amendment to the Albemarle Corporation Supplemental Executive Retirement Plan, dated December 1, 2010 \[filed as Exhibit 10.14 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.15 [Second Amendment to the Albemarle Corporation Supplemental Executive Retirement Plan, dated December 18, 2011 \[filed as Exhibit 10.15 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.16 [Third Amendment to the Albemarle Corporation Supplemental Executive Retirement Plan, dated December 2, 2013 \[filed as Exhibit 10.16 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.17 [Form of Severance Compensation Agreement \(Pension-Eligible Employees\) \[filed as Exhibit 10.19 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.18 [Form of Severance Compensation Agreement \(Non-Pension-Eligible Employees\) \[filed as Exhibit 10.20 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.19 [Form of Amendment to Severance Compensation Agreement \[filed as Exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- #10.20 [Second Amendment to Severance Compensation Agreement between Luther C. Kissam, IV and Albemarle Corporation \[filed as Exhibit 10.1 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 9, 2016, and incorporated herein by reference\].](#)
- #10.21 [Form of Second Amendment to Severance Compensation Agreement between each of Karen Narwold and Scott Tozier, and Albemarle Corporation \[filed as Exhibit 10.2 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 9, 2016, and incorporated herein by reference\].](#)
- #10.22 [Albemarle Corporation Severance Pay Plan, as revised effective as of December 13, 2006 \[filed as Exhibit 10.6 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 18, 2006, and incorporated herein by reference\].](#)
- #10.23 [Amended and Restated Albemarle Corporation Benefits Protection Trust, effective as of December 13, 2006 \[filed as Exhibit 10.9 to the Company's Current Report on Form 8-K \(No. 1-12658\) filed on December 18, 2006, and incorporated herein by reference\].](#)

- [#10.24](#) [Albemarle Corporation Employee Relocation Policy \[filed as Exhibit 10.33 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.25](#) [Albemarle Corporation 2008 Incentive Plan, as amended and restated as of April 20, 2010 \[filed as Exhibit 10.1 to the Company's Registration Statement on Form S-8 \(No. 333-166828\) filed on May 14, 2010, and incorporated herein by reference\].](#)
- [#10.26](#) [Amended and Restated Albemarle Corporation Executive Deferred Compensation Plan, effective as of January 1, 2013 \[filed as Exhibit 10.23 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.27](#) [First Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of November 14, 2014 \[filed as Exhibit 10.24 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.28](#) [Second Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of February 12, 2015 \[filed as Exhibit 10.28 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.29](#) [Third Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of July 31, 2015 \[filed as Exhibit 10.29 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.30](#) [Fourth Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of December 17, 2015 \[filed as Exhibit 10.30 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.31](#) [Fifth Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of March 31, 2017 \[filed as Exhibit 10.38 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.32](#) [Sixth Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of July 5, 2017 \[filed as Exhibit 10.39 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.33](#) [Seventh Amendment to the Albemarle Corporation Executive Deferred Compensation Plan, dated as of November 9, 2017 \[filed as Exhibit 10.40 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.34](#) [Albemarle Corporation 2017 Incentive Plan, adopted May 12, 2017 \[filed as Appendix A to the Company's Definitive Proxy Statement filed on March 30, 2017, and incorporated herein by reference\].](#)
- [#10.35](#) [Albemarle Corporation Compensation Recoupment and Forfeiture Policy effective July 10, 2017 \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [#10.36](#) [Form of letter agreement dated February 26, 2018 between the Company and each of Luther C. Kissam, IV, Karen Narwold, Scott Tozier and Donald J. LaBauve, Jr. \[filed as Exhibit 10.43 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 \(No. 1-12658\), and incorporated herein by reference\].](#)
- [10.37](#) [Credit Agreement, dated as of June 21, 2018, among Albemarle Corporation, Albemarle Global Finance Company SCA and Albemarle Europe SPRL, as borrowers, certain of the Company's subsidiaries that from time to time become parties thereto, the several banks and other financial institutions as may from time to time become parties thereto, and Bank of America, N.A., as Administrative Agent and Swing Line Lender \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2018, and incorporated herein by reference\].](#)



- [10.38](#) [Asset Sale and Share Subscription Agreement, dated December 14, 2018, by and among Albemarle Corporation, Albemarle Wodgina Pty Ltd, a wholly-owned subsidiary of Albemarle Corporation, Mineral Resources Limited and Wodgina Lithium Pty Ltd, a wholly-owned subsidiary of Mineral Resources Limited \[filed as Exhibit 10.41 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 \(No. 1-12658\), and incorporated herein by reference\].](#)
  
- [10.39](#) [Form of Wodgina Joint Venture Agreement by and among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd and Wodgina Lithium Operations Pty Ltd \[filed as Exhibit 10.42 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 \(No. 1-12658\), and incorporated herein by reference\].](#)
  
- [10.40](#) [Form of Letter Agreement, dated June 13, 2019, among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd, Mineral Resources Limited and the Company \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2019, and incorporated herein by reference\].](#)
  
- [10.41](#) [Form of Amendment Deed to Asset Sale and Share Subscription Agreement, dated August 1, 2019, among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd, Mineral Resources Limited and the Company \[filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2019, and incorporated herein by reference\].](#)
  
- [10.42](#) [Form of MRL Kemerton Asset Sale Agreement among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd, Mineral Resources Limited, Albemarle Lithium Pty Ltd and the Company \[filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2019, and incorporated herein by reference\].](#)
  
- [10.43](#) [Form of break fee letter, dated August 1, 2019, between the Company and Mineral Resources Limited \[filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on August 7, 2019, and incorporated herein by reference\].](#)
  
- [10.44](#) [Syndicated Facility Agreement, dated as of August 14, 2019, among Albemarle Corporation, Albemarle Finance Company B.V., Albemarle New Holding GmbH, Albemarle Wodgina Pty Ltd, the Lenders Party Thereto and JPMorgan Chase Bank, N.A., as Administrative Agent \[filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on November 6, 2019, and incorporated herein by reference\].](#)
  
- [10.45](#) [First Amendment to Credit Agreement, dated as of August 14, 2019, among Albemarle Corporation, Albemarle Europe SRL, the Lenders party thereto, and Bank of America, N.A., as Administrative Agent for the Lenders \[filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on November 6, 2019, and incorporated herein by reference\].](#)
  
- [10.46](#) [MARBL Joint Venture Agreement, dated August 1, 2019, among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd, and MARBL Lithium Operations \[filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on November 6, 2019, and incorporated herein by reference\].](#)
  
- [10.47](#) [Amendment Deed to Asset Sale and Share Subscription Agreement and MRL Kemerton ASA, dated August 1, 2019, among Wodgina Lithium Pty Ltd, Albemarle Wodgina Pty Ltd, Mineral Resources Limited, Albemarle Corporation, and Albemarle Lithium Pty Ltd \[filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q \(No. 1-12658\) filed on November 6, 2019, and incorporated herein by reference\].](#)
  
- [\\*21.1](#) [Subsidiaries of the Company.](#)
  
- [\\*23.1](#) [Consent of PricewaterhouseCoopers LLP.](#)
  
- [\\*31.1](#) [Certification of Chief Executive Officer pursuant to Rule 13a-15\(e\) and 15d-15\(e\) of the Securities Exchange Act of 1934, as amended.](#)
  
- [\\*31.2](#) [Certification of Chief Financial Officer pursuant to Rule 13a-15\(e\) and 15d-15\(e\) of the Securities Exchange Act of 1934, as amended.](#)
  
- [\\*32.1](#) [Certification of Chief Executive Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)

[\\*32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)

[\\*99.1 Five-Year Summary.](#)

\*101 Interactive Data Files (Annual Report on Form 10-K, for the fiscal year ended December 31, 2019, furnished in XBRL (eXtensible Business Reporting Language)).

Attached as Exhibit 101 to this report are the following documents formatted in XBRL: (i) the Consolidated Statements of Income for the fiscal years ended December 31, 2019, 2018 and 2017, (ii) the Consolidated Statements of Comprehensive Income for the fiscal years ended December 31, 2019, 2018 and 2017, (iii) the Consolidated Balance Sheets at December 31, 2019 and 2018, (iv) the Consolidated Statements of Changes in Equity for the fiscal years ended December 31, 2019, 2018 and 2017, (v) the Consolidated Statements of Cash Flows for the fiscal years ended December 31, 2019, 2018 and 2017 and (vi) the Notes to Consolidated Financial Statements.

# Management contract or compensatory plan or arrangement.

\* Included with this filing.

(c) In accordance with Regulation S-X Rule 3-09, the audited financial statements of Windfield Holdings Pty. Ltd. (“Windfield”) for the year ended December 31, 2019, Windfield’s fiscal year end, will be filed by amendment to this Annual Report on Form 10-K on or before June 30, 2020.

**Item 16. Form 10-K Summary.**

NONE

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ALBEMARLE CORPORATION  
(Registrant)

By: \_\_\_\_\_ /s/ LUTHER C. KISSAM IV  
**(Luther C. Kissam IV)**  
**Chairman, President and Chief Executive Officer**

Dated: February 26, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated as of February 26, 2020.

<u>Signature</u>	<u>Title</u>
/s/ LUTHER C. KISSAM IV <b>(Luther C. Kissam IV)</b>	Chairman, President and Chief Executive Officer (principal executive officer)
/s/ SCOTT A. TOZIER <b>(Scott A. Tozier)</b>	Executive Vice President, Chief Financial Officer (principal financial officer)
/s/ JOHN BARICHIVICH <b>(John Barichivich)</b>	Vice President, Corporate Controller and Chief Accounting Officer (principal accounting officer)
/s/ LAURIE BRLAS <b>(Laurie Brlas)</b>	Director
/s/ WILLIAM H. HERNANDEZ <b>(William H. Hernandez)</b>	Director
/s/ DOUGLAS L. MAINE <b>(Douglas L. Maine)</b>	Director
/s/ J. KENT MASTERS <b>(J. Kent Masters)</b>	Director
/s/ GLENDA MINOR <b>(Glenda Minor)</b>	Director
/s/ JAMES J. O'BRIEN <b>(James J. O'Brien)</b>	Director
/s/ DIARMUID B. O'CONNELL <b>(Diarmuid B. O'Connell)</b>	Director
/s/ DEAN L. SEAVERS <b>(Dean L. Seavers)</b>	Director
/s/ GERALD A. STEINER <b>(Gerald A. Steiner)</b>	Director
/s/ HARRIETT TEE TAGGART <b>(Harriett Tee Taggart)</b>	Director
/s/ HOLLY VAN DEURSEN <b>(Holly Van Deursen)</b>	Director

/s/ ALEJANDRO D. WOLFF

Director

---

(Alejandro D. Wolff)

**Description of Common Stock Registered Pursuant to Section 12(b) of the Securities Exchange Act of 1934, as amended.**

The following is a description of the capital stock of Albemarle Corporation (“Albemarle”). This description is based on Albemarle’s amended and restated articles of incorporation and amended and restated bylaws (together, the “Albemarle organizational documents”) and is subject in all respects to the Virginia Stock Corporation Act (the “VSCA”) and applicable Virginia law. This description is a summary and is qualified in its entirety by reference to the Albemarle organizational documents.

**Authorized Shares of Capital Stock**

Albemarle’s amended and restated articles of incorporation authorize the issuance of 150,000,000 shares of common stock, \$0.01 par value per share, and 15,000,000 shares of preferred stock. As of December 31, 2019, Albemarle had one class of securities, common stock, registered under Section 12 of the Securities Exchange Act of 1934, as amended.

**Common Stock**

*Common Stock Outstanding.* The outstanding shares of the common stock are duly authorized, validly issued, fully paid and nonassessable.

*Voting Rights.* Each holder of Albemarle common stock is entitled to one vote per share on all matters voted on generally by shareholders, including the election of directors. Albemarle’s amended and restated articles of incorporation do not provide for cumulative voting for the election of directors. Except as otherwise required by law or with respect to any outstanding class or series of Albemarle preferred stock, the holders of Albemarle common stock possess all voting power.

Under Albemarle’s amended and restated articles of incorporation, shareholder action is generally effective if the votes cast in favor of the action exceed the votes cast against the action. But the election of directors requires a plurality of the votes cast by Albemarle shareholders at a meeting at which a quorum is present. However, Albemarle’s amended and restated articles of incorporation require the affirmative vote of at least a majority of the outstanding shares of Albemarle common stock for the approval of mergers, statutory share exchanges, sales or other dispositions of all or substantially all of Albemarle’s assets outside the usual and regular course of business, or dissolution of Albemarle, except that the affirmative vote of 75% of the outstanding shares of Albemarle common stock is required for approval of an affiliated transaction. An affiliated transaction generally is defined as any of the following transactions:

- a merger, a share exchange or material dispositions of corporate assets not in the ordinary course of business, to or with an interested shareholder, or any material guarantee of any indebtedness of any interested shareholder (defined as any holder of more than 10% of any class of outstanding voting shares);

- certain sales or other dispositions to an interested shareholder of voting shares of Albemarle or any of its subsidiaries having an aggregate fair market value greater than 5% of the aggregate fair market value of all outstanding voting shares;
- any dissolution of the corporation proposed by or on behalf of an interested shareholder; or
- any reclassification, including reverse stock splits, recapitalizations or mergers of Albemarle with any of its subsidiaries, that increases the percentage of the outstanding voting shares of Albemarle or any of its subsidiaries, owned beneficially by any interested shareholder by more than 5%.

The supermajority voting requirement does not apply to a transaction with a shareholder who, together with his or her affiliates and associates, became the beneficial owner of more than 10% of any class of Albemarle outstanding voting shares as of the close of business on February 28, 1994, the date of the distribution by Ethyl Corporation to its shareholders of all of the outstanding shares of Albemarle common stock.

Furthermore, the affirmative vote of the holders of 75% of the voting power of Albemarle's outstanding shares must approve an amendment to provisions in Albemarle's amended and restated articles of incorporation relating to the supermajority voting requirement for affiliated transactions.

*Exclusive Forum.* Albemarle's amended and restated bylaws provide that unless Albemarle consents in writing to the selection of an alternative forum, the United States District Court for the Eastern District of Virginia, Alexandria Division, or in the event that court lacks jurisdiction to hear such action, the Circuit Court of the County of Fairfax, Virginia, will be the sole and exclusive forum for any derivative action brought on behalf of Albemarle, any action asserting a claim of breach of a legal duty owed by any current or former director, officer or other employee or agent of Albemarle to Albemarle or Albemarle shareholders, any action arising pursuant to the VSCA or Albemarle's organizational documents or any action asserting a claim governed by the internal affairs doctrine.

*Dividend Rights; Rights Upon Liquidation.* Subject to any preferential rights of holders of any shares of Albemarle preferred stock that may be outstanding, holders of shares of Albemarle common stock are entitled to receive dividends and other distributions on their shares of common stock out of assets legally available for distribution when, as and if authorized and declared by the Albemarle board of directors, and to share ratably in Albemarle's assets legally available for distribution to its shareholders in the event of its liquidation, dissolution or winding-up.

*Other Rights.* Holders of Albemarle common stock have no preferences or preemptive, conversion, exchange, redemption or sinking fund rights. Shares of Albemarle common stock will not be liable for further calls or assessments by Albemarle, and the holders of Albemarle common stock will not be liable for any of Albemarle's liabilities.

*Listing.* Albemarle's common stock is listed on the New York Stock Exchange under the symbol "ALB."  
*Transfer Agent and Registrar.* EQ Shareowner Services is the transfer agent and registrar for Albemarle common stock.

## **Anti-Takeover Provisions**

*Albemarle Organizational Documents.* The Albemarle organizational documents and the VSCA contain provisions that may have the effect of impeding, delaying or discouraging the acquisition of control of Albemarle by means of a tender or exchange offer, proxy fight, merger or share exchange, open market purchases or otherwise in a transaction not approved by the Albemarle board of directors. These provisions are designed to reduce, or have the effect of reducing, Albemarle's vulnerability to an unsolicited proposal for the restructuring or sale of all or substantially all of Albemarle's assets or an unsolicited takeover attempt that the Albemarle board of directors does not believe is in the best interests of its shareholders.

*Undesignated Preferred Stock.* Under Albemarle's amended and restated articles of incorporation, the Albemarle board of directors has the authority, without further shareholder approval, to issue preferred stock in classes or series and to fix the designations, voting power, preferences and rights of the shares of each class or series and any qualifications, limitations or restrictions with respect to that class or series. Under this authority, the Albemarle board of directors could create and issue a class or series of preferred stock with rights, preferences or restrictions that have the effect of discriminating against an existing or prospective holder of Albemarle's capital stock as a result of such holder beneficially owning or commencing a tender offer for a substantial amount of Albemarle common stock. One of the effects of authorized but unissued and unreserved shares of preferred stock may be to render it more difficult for, or discourage an attempt by, a potential acquiror to obtain control of Albemarle by means of a merger, share exchange, tender or exchange offer, proxy contest or otherwise, and thereby protect the continuity of Albemarle's management. The issuance of shares of preferred stock may have the effect of delaying, deferring or preventing a change in control of Albemarle without any further action by Albemarle shareholders.

*Additional Provisions.* Other provisions of the Albemarle organizational documents that may make replacing the Albemarle board of directors more difficult include:

- 75% supermajority voting requirements to approve affiliated transactions or an amendment to the provisions in Albemarle's amended and restated articles of incorporation relating to this supermajority voting requirement;
- prohibition on shareholders calling a special meeting of shareholders;
- inability of shareholders to act by less-than-unanimous written consent;
- requirements for advance notice for proposing business or making director nominations at shareholder meetings;
- removal of directors only for cause; and

- ability of the Albemarle board of directors to increase the size of the board of directors and fill vacancies on the board of directors.

### **Affiliated Transactions Statute**

The VSCA contains provisions governing affiliated transactions. In general, these provisions prohibit a Virginia corporation from engaging in affiliated transactions with any holder of more than 10% of any class of its outstanding voting shares, or an interested shareholder, for a period of three years following the date that such person became an interested shareholder unless:

- a majority of (but not fewer than two) disinterested directors on the board of directors of the corporation and the holders of two-thirds of the voting shares, other than the shares beneficially owned by the interested shareholder, approve the affiliated transaction; or
- before the date the person became an interested shareholder, a majority of the disinterested directors on the board of directors approved the transaction that resulted in the shareholder becoming an interested shareholder.

After three years, any such transaction must satisfy certain fair price requirements in the statute or be approved by the holders of two-thirds of the voting shares, other than the shares beneficially owned by the interested shareholder. For a description of the affiliated transactions subject to this approval requirement, see “[ ] Common Stock [ ] Voting Rights.”

### **Control Share Acquisitions Statute**

The VSCA also contains provisions relating to control share acquisitions, which are transactions causing the voting power of any person acquiring beneficial ownership of shares of a Virginia public corporation to meet or exceed certain threshold percentages (20%, 33 1/3% or 50%) of the total votes entitled to be cast for the election of directors. Shares acquired in a control share acquisition have no voting rights unless:

- the voting rights are granted by a majority vote of all outstanding shares other than those held by the acquiring person or any officer or employee director of the corporation; or
- the articles of incorporation or bylaws of the corporation provide that these Virginia law provisions do not apply to acquisitions of its shares.

The acquiring person may require that a special meeting of the shareholders be held to consider the grant of voting rights to the shares acquired in the control share acquisition.

As permitted by Virginia law, the Albemarle board of directors has adopted a bylaw providing that the control share acquisition provisions of Virginia law do not apply to the acquisition of its shares.



## SUBSIDIARIES OF ALBEMARLE CORPORATION

<u>NAME</u>	<u>PLACE OF FORMATION</u>
ACI Cyprus, L.L.C.	Delaware
Albemarle Argentina SRL	Argentina
Albemarle Brazil Holdings LTDA.	Brazil
Albemarle Care Fund	Virginia
Albemarle Catalysts Company B.V.	Netherlands
Albemarle Chemical Canada Ltd.	Canada
Albemarle Chemicals (Shanghai) Company Limited	China
Albemarle Chemicals Ltd.	Cyprus
Albemarle Chemicals Private Limited	India
Albemarle Chemicals S.A.S.	France
Albemarle Chemicals South Africa (PTY) Ltd.	South Africa
Albemarle de Venezuela C.A.	Venezuela
Albemarle Delaware Holdings 1 LLC	Delaware
Albemarle Delaware Holdings 2 LLC	Delaware
Albemarle Dutch Holdings B.V.	Netherlands
Albemarle Dutch Holdings 2 B.V.	Netherlands
Albemarle Europe Sprl	Belgium
Albemarle Finance Company B.V.	Netherlands
Albemarle Foundation	Virginia
Albemarle Germany Gmbh	Germany
Albemarle Hilfe GmbH Unterstutzungskasse	Germany
Albemarle Holdings Company Limited	Turks & Caicos Islands
Albemarle Holdings Limited	Hong Kong
Albemarle Hungary Ltd.	Hungary
Albemarle Italy S.R.L.	Italy
Albemarle Japan Corporation	Japan
Albemarle Japan Holdings B.V.	Netherlands
Albemarle Knight Lux 1 Holdings Corporation	Delaware
Albemarle Korea Corporation	Korea
Albemarle Limitada	Chile
Albemarle Lithium Holding Corporation	Delaware
Albemarle Lithium Holding GmbH	Germany
Albemarle Lithium Pty Ltd	Australia
Albemarle Malaysia Sdn Bhd	Malaysia
Albemarle Management (Shanghai) Co., Ltd.	China
Albemarle Middle East Corporation FZE	United Arab Emirates
Albemarle Netherlands B.V.	Netherlands
Albemarle New Holding GmbH	Germany
Albemarle Overseas Employment Corporation	Virginia
Albemarle Quimica LTDA	Brazil
Albemarle Saudi Trading Company	Saudi Arabia
Albemarle Singapore PTE LTD	Singapore
Albemarle Spain S.L.	Spain

<b><u>NAME</u></b>	<b><u>PLACE OF FORMATION</u></b>
Albemarle (Thailand) Co., Ltd.	Thailand
Albemarle Taiwan Limited	Taiwan
Albemarle U.S., Inc.	Delaware
Albemarle Vietnam Limited Liability Company	Vietnam
Albemarle Wodgina Pty Ltd	Australia
Dynamit Nobel GmbH	Germany
Dynamit Nobel Unterstützungsfonds GmbH	Germany
Excalibur Realty Company	Delaware
Excalibur II Realty Company	Delaware
Foote Chile Holding Company	Delaware
Foote Minera e Inversiones Ltda.	Chile
Jiangxi Albemarle Lithium Co., Ltd.	China
Jordan Bromine Company Limited	Jordan
Knight Lux 1 S.à r.l.	Luxembourg
Knight Lux 2 S.à r.l.	Luxembourg
MARBL Lithium Operations Pty Ltd	Australia
Metalon Environmental Management & Solutions GmbH	Germany
PT Albemarle Chemicals Indonesia	Indonesia
Rockwood Holdings, Inc.	Delaware
Rockwood Lithium India Pvt. Ltd.	India
Rockwood Lithium Japan K.K.	Japan
Rockwood Lithium Korea LLC	South Korea
Rockwood Lithium Shanghai Co., Ltd.	China
Rockwood Lithium Taiwan Co., Ltd.	Taiwan
Rockwood Specialties GmbH	Germany
Rockwood Specialties Group, LLC	Delaware
Rockwood Specialties LLC	Delaware
Rockwood Specialties Limited	United Kingdom
RT Lithium Limited	United Kingdom
RSG Immobilien GmbH	Germany
Sales de Magnesio Limitada	Chile
Shandong Sinobrom Albemarle Bromine Chemicals Company Limited	China
Sichuan Guorun New Material Co., Ltd.	China

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 No. 333-234547 and Form S-8 (Nos. 33-75622, 333-150694, 333-166828, 333-188599 and 333-223167) of Albemarle Corporation of our report dated February 26, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP  
Charlotte, North Carolina  
February 26, 2020

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER**

I, Luther C. Kissam IV, certify that:

1. I have reviewed this Annual Report on Form 10-K of Albemarle Corporation for the period ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2020

/s/ LUTHER C. KISSAM IV

Luther C. Kissam IV

Chairman, President and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER**

I, Scott A. Tozier, certify that:

1. I have reviewed this Annual Report on Form 10-K of Albemarle Corporation for the period ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2020

/s/ SCOTT A. TOZIER

---

Scott A. Tozier

Executive Vice President and Chief Financial Officer

**CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Albemarle Corporation (the "Company") for the period ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Luther C. Kissam IV, principal executive officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ LUTHER C. KISSAM IV

---

Luther C. Kissam IV

Chairman, President and Chief Executive Officer

February 26, 2020

**CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Albemarle Corporation (the "Company") for the period ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Scott A. Tozier, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ SCOTT A. TOZIER

---

Scott A. Tozier

Executive Vice President and Chief Financial Officer

February 26, 2020

## FIVE-YEAR SUMMARY

(In Thousands, Except for Per Share Amounts and Footnote Data)

Year Ended December 31	2019(a)	2018	2017(b)	2016(b)(c)	2015(b)(c)(d)
<b>Results of Operations</b>					
Net sales	\$ 3,589,427	\$ 3,374,950	\$ 3,071,976	\$ 2,677,203	\$ 2,826,429
Costs and expenses <sup>(e)</sup>	2,923,304	2,463,410	2,500,316	2,076,223	2,516,596
Operating profit	666,123	911,540	571,660	600,980	309,833
Interest and financing expenses	(57,695)	(52,405)	(115,350)	(65,181)	(81,650)
Other (expenses) income, net	(45,478)	(64,434)	(9,512)	(20,535)	82,561
Income from continuing operations before income taxes and equity in net income of unconsolidated investments	562,950	794,701	446,798	515,264	310,744
Income tax expense	88,161	144,826	431,817	96,263	11,134
Income from continuing operations before equity in net income of unconsolidated investments	474,789	649,875	14,981	419,001	299,610
Equity in net income of unconsolidated investments (net of tax)	129,568	89,264	84,487	59,637	27,978
Net income from continuing operations	604,357	739,139	99,468	478,638	327,588
Income from discontinued operations (net of tax) <sup>(f)</sup>	—	—	—	202,131	32,476
Net income	604,357	739,139	99,468	680,769	360,064
Net income attributable to noncontrolling interests	(71,129)	(45,577)	(44,618)	(37,094)	(25,158)
Net income attributable to Albemarle Corporation	\$ 533,228	\$ 693,562	\$ 54,850	\$ 643,675	\$ 334,906
<b>Financial Position and Other Data</b>					
Total assets <sup>(g)</sup>	\$ 9,860,863	\$ 7,581,674	\$ 7,750,772	\$ 8,161,207	\$ 9,597,954
Operations:					
Working capital	\$ 816,113	\$ 815,248	\$ 1,276,638	\$ 2,166,515	\$ 214,317
Current ratio	1.58	1.69	2.06	2.90	1.13
Depreciation and amortization	\$ 213,484	\$ 200,698	\$ 196,928	\$ 226,169	\$ 260,076
Capital expenditures	\$ 851,796	\$ 699,991	\$ 317,703	\$ 196,654	\$ 227,649
Acquisitions, net of cash acquired	\$ 820,000	\$ 11,403	\$ 44,367	\$ 208,734	\$ 2,100,490
Cash proceeds from divestitures, net	\$ —	\$ 413,569	\$ 6,857	\$ 3,325,571	\$ 8,883
Research and development expenses	\$ 58,287	\$ 70,054	\$ 84,330	\$ 80,475	\$ 89,187
Gross profit as a % of net sales	35.0	36.1	36.0	36.2	30.4
Total long-term debt <sup>(g)</sup>	\$ 3,050,257	\$ 1,705,210	\$ 1,837,372	\$ 2,369,262	\$ 3,817,157
Total equity <sup>(h)</sup>	\$ 4,093,580	\$ 3,759,108	\$ 3,817,696	\$ 3,942,604	\$ 3,401,313
Total long-term debt as a % of total capitalization	42.7	31.2	32.5	37.5	52.9
Net debt as a % of total capitalization <sup>(i)</sup>	37.3	23.4	15.5	2.5	51.4
<b>Common Stock</b>					
Basic earnings per share					
Continuing operations	\$ 5.03	\$ 6.40	\$ 0.49	\$ 3.93	\$ 2.72
Discontinued operations	\$ —	\$ —	\$ —	\$ 1.80	\$ 0.29



Shares used to compute basic earnings per share	105,949	108,427	110,914	112,379	111,182
Diluted earnings per share					
Continuing operations	\$ 5.02	\$ 6.34	\$ 0.49	\$ 3.90	\$ 2.71
Discontinued operations	\$ —	\$ —	\$ —	\$ 1.78	\$ 0.29
Shares used to compute diluted earnings per share	106,321	109,458	112,380	113,239	111,556
Cash dividends declared per share	\$ 1.47	\$ 1.34	\$ 1.28	\$ 1.22	\$ 1.16
Total equity per share <sup>(h)</sup>	\$ 38.60	\$ 35.59	\$ 34.53	\$ 35.04	\$ 30.31
Return on average total equity	13.6%	18.3%	1.4%	17.5%	13.7%

**Footnotes:**

- (a) On October 31, 2019, we completed the acquisition of a 60% interest in Mineral Resources Limited's Wodgina hard rock lithium mine project ("Wodgina Project"). Results for 2019 include the operations of the Wodgina Project commencing on November 1, 2019.
- (b) As a result of the adoption of new accounting guidance effective January 1, 2018, on a retrospective basis, all components of net benefit cost (credit), other than service cost, are to be shown outside of operations on the consolidated statements of income. We recast these components of net benefit cost (credit), which resulted in an increase (reduction) of \$3.7 million, \$0.3 million and \$3.7 million in Cost of goods sold, respectively, and \$12.4 million, (\$26.7) million and \$31.6 million million in Selling, general and administrative expenses, respectively, with an offsetting impact of \$16.1 million, (\$26.4) million and \$35.3 million in Other (expenses) income, net, respectively, for the years ended December 31, 2017, 2016 and 2015. There was no impact to Net income attributable to Albemarle Corporation.
- (c) On December 14, 2016 the Company sold the Chemetall Surface Treatment business, which qualifies for discontinued operations treatment because it represents a strategic shift that will have a major effect on the Company's operations and financial results. As a result, in the second quarter of 2016, the Company began accounting for this business as discontinued operations in the consolidated statements of income and excluded the business from segment results for the years ended December 31, 2016 and 2015, the periods this business was owned by Albemarle. Related assets and liabilities are classified as held for sale for 2015.
- (d) On January 12, 2015, we completed the acquisition of Rockwood Holdings, Inc. Results for 2015 include the operations of Rockwood commencing on January 13, 2015.
- (e) The year ended December 31, 2018 included a gain before income taxes of \$210.4 million related to the sale of the polyolefin catalysts and components portion of the Performance Catalysts Solutions business. The year ended December 31, 2016 included gains before income taxes of \$11.5 million and \$112.3 million related to the sales of the metal sulfides business and the minerals-based flame retardants and specialty chemicals business, respectively.
- (f) Included in Income from discontinued operations (net of tax) for the year ended December 31, 2016 is a pre-tax gain of \$388.0 million (\$135.0 million after income taxes) related to the sale of the Chemetall Surface Treatment business.
- (g) As a result of the adoption of new accounting guidance effective January 1, 2016 on a retrospective basis, unamortized debt issuance costs are now deducted from the carrying amount of the associated debt liability on the balance sheet. The reclassification of these unamortized debt issuance costs resulted in reductions of Long-term debt and Other assets on the consolidated balance sheets of \$17.1 million in 2015.
- (h) Equity reflects the repurchase of common shares amounting to: 2019—0; 2018—5,262,654; 2017—2,341,083; 2016—0; and 2015—0. 2015 also includes the impact of 34,113,064 shares of common stock issued in connection with the acquisition of Rockwood.
- (i) We define net debt as total debt plus the portion of outstanding joint venture indebtedness guaranteed by us (or less the portion of outstanding joint venture indebtedness consolidated but not guaranteed by us), less cash and cash equivalents.