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 1-2376

FMC CORPORATION
(Exact name of registrant as specified in its charter)

Delaware			**94-0479804**
(State or other jurisdiction of incorporation or organization)			(I.R.S. Employer Identification No.)
2929 Walnut Street	**Philadelphia**	**Pennsylvania**	**19104**
(Address of principal executive offices)			(Zip Code)

Registrant's telephone number, including area code: 215-299-6000

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, par value $0.10 per share	**FMC**	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x 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 x

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 the past 90 days. Yes x 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 such files). Yes x No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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.

Large accelerated filer	☒	Accelerated filer	☐
Non-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 x

The aggregate market value of voting stock held by non-affiliates of the registrant as of June 30, 2019, the last day of the registrant's second fiscal quarter was $10,748,748,353. The market value of voting stock held by non-affiliates excludes the value of those shares held by executive officers and directors of the registrant.

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date:

As of December 31, 2019, there were 129,124,294 of the registrant's common shares outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

DOCUMENT	FORM 10-K REFERENCE
Portions of Proxy Statement for 2020 Annual Meeting of Stockholders	**Part III**

FMC Corporation
2019 Form 10-K
Table of Contents

PART I

FMC Corporation was incorporated in 1928 under Delaware law and has its principal executive offices at 2929 Walnut Street, Philadelphia, Pennsylvania 19104. Throughout this annual report on Form 10-K, except where otherwise stated or indicated by the context, “FMC”, the "Company", “We,” “Us,” or “Our” means FMC Corporation and its consolidated subsidiaries and their predecessors. Copies of the annual, quarterly and current reports we file with the Securities and Exchange Commission (“SEC”), and any amendments to those reports, are available on our website at *www.fmc.com* as soon as practicable after we furnish such materials to the SEC.

ITEM 1. BUSINESS

General

We are a pure-play agricultural sciences company, providing innovative solutions to growers around the world with a robust product portfolio fueled by a market-driven discovery and development pipeline in crop protection, plant health, and professional pest and turf management. This powerful combination of advanced technologies includes leading insect control products based on Rynaxypyr® and Cyazypyr® active ingredients; Authority®, Boral®, Centium®, Command® and Gamit® branded herbicides; Talstar® and Hero® branded insecticides; and flutriafol-based fungicides. The FMC portfolio also includes biologicals such as Quartzo® and Presence® bionematicides. Our products are used in agriculture to enhance crop yield and quality by controlling a broad spectrum of insects, weeds and disease, as well as in non-agricultural markets for pest control.

FMC Strategy

We have streamlined our portfolio over the past nine years to become a tier-one leader and the fifth largest global provider in the global agricultural chemicals market. Our strong competitive position is based on our technology and innovation, as well as our geographic balance and crop balance, which helped FMC to take market share in both 2018 and 2019.

We have industry-leading insecticides and herbicides (the majority of which are patented technologies), exceptional discovery research capabilities and a global manufacturing network. We expect to spend approximately 7 percent of sales on research and development annually. Our R&D pipeline includes 7 molecules in our development pipeline (approximately 1-7 years away from commercialization) and an additional 15 molecules in our discovery pipeline (approximately 8-10 years from commercialization). We expect the first two significant product launches out of this pipeline will occur in 2021. We own a total of 26 manufacturing plants, and we have the scale to operate with strong resources and global reach to address changing market conditions. Our supply chain organization effectively managed to continue supplying our customers and growing our business, despite multiple shutdowns and other disruptions in the Chinese chemical sector in 2018 and 2019.

Our revenues grew approximately 8 percent year over year in 2019, driven by low-teens growth for our insecticides, Rynaxypr® and Cyazypyr® insect control, as well as mid-single digit growth for the rest of our portfolio. Rynaxypyr® and Cyazypyr® insect control now represent over $1.6 billion in combined sales, representing approximately 40 percent growth since we acquired these molecules in November 2017. Products launched in 2019 also contributed to revenue growth. We successfully launched our new bixafen fungicide under the Lucento® brand in North America in 2019, and we now expect peak sales to exceed the original $30 million to $50 million range we forecasted for this new active ingredient at our 2018 Investor Day. We also launched 30 new formulated products in 2019, which is key to lifecycle management of our products.

FMC far outperformed the crop protection market in 2019, which we estimate was flat versus 2018. FMC’s innovation is driving this outperformance, starting with our current portfolio of advanced products and continuing through our R&D discovery, development and new formulations. Our technology portfolio includes specific innovations in plant health, application technology and delivery systems, and it is expanding to offer advanced agronomic insights through precision agriculture tools that will leverage artificial intelligence and machine learning.

We maintain our commitment to enterprise sustainability, including responsible product stewardship. We are committed to delivering products that maintain a safe and secure food supply and to do so with a reduced impact on the planet. To reflect this commitment and to reset the baseline, following our transformation into a pure-play agricultural sciences company, we reset our sustainability goals in October 2019. As we grow, we will do so in a responsible way. Safety and business ethics will remain of utmost importance. Meeting and exceeding our customers’ expectations will continue to be a primary focus.

Acquisitions and Divestitures

In 2017, we completed the acquisition from E. I. du Pont de Nemours and Company (“DuPont") of certain assets relating to DuPont's Crop Protection business and research and development organization ("DuPont Crop Protection Business") (collectively, the "DuPont Crop Protection Business Acquisition"). In connection with this transaction, we sold to DuPont our FMC Health and Nutrition segment and paid DuPont $1.2 billion in cash. Our FMC Health and Nutrition business and its results have been presented as a discontinued operation for all periods presented throughout this document.

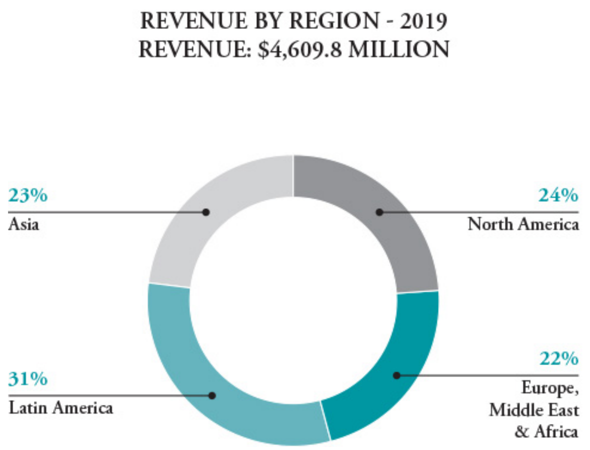
In 2019, we completed the separation of our FMC Lithium segment, which was renamed Livent Corporation, or "Livent", following its initial public offering ("IPO") that closed on October 15, 2018. After completion of the IPO, FMC owned 123 million shares of Livent's common stock, representing approximately 84 percent of the total outstanding shares of Livent's common stock. On March 1, 2019, we completed the distribution of 123 million shares of common stock of Livent as a pro rata dividend on shares of FMC. Following the distribution, FMC has zero shares of Livent and zero exposure to lithium markets. We have recast all the data within this filing to present the former FMC Lithium as a discontinued operation retrospectively for all periods presented.

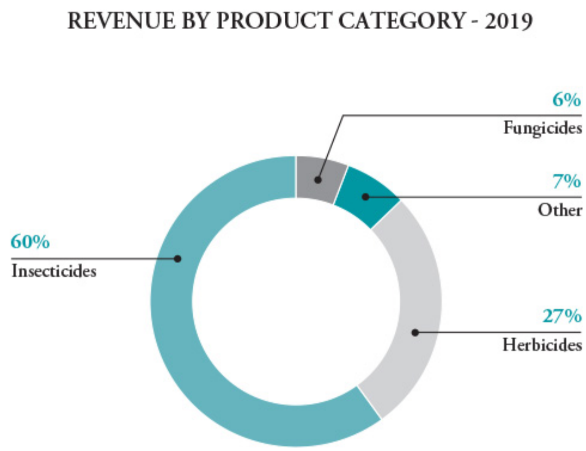
Financial Information About Our Business
(Financial Information in Millions)

The following table shows the principal products produced by our business, its raw materials and uses:

Product	Raw Materials	Uses
Insecticides	Synthetic chemical intermediates	Protection of crops, including soybean, corn, fruits and vegetables, cotton, sugarcane, rice, and cereals, from insects and for non-agricultural applications including pest control for home, garden and other specialty markets
Herbicides	Synthetic chemical intermediates	Protection of crops, including cotton, sugarcane, rice, corn, soybeans, cereals, fruits and vegetables from weed growth and for non-agricultural applications including turf and roadsides
Fungicides	Synthetic and biological chemical intermediates	Protection of crops, including fruits and vegetables from fungal disease

With a worldwide manufacturing and distribution infrastructure, we are better able to respond rapidly to global customer needs, offset downward economic trends in one region with positive trends in another and match local revenues to local costs to reduce the impact of currency volatility. The charts below detail our sales by major geographic region and major product category.

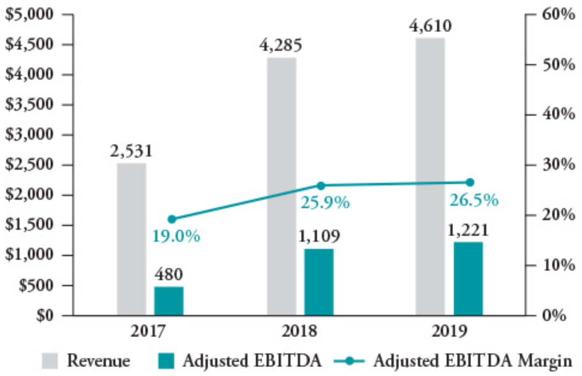




The following table provides our long-lived assets by major geographical region.

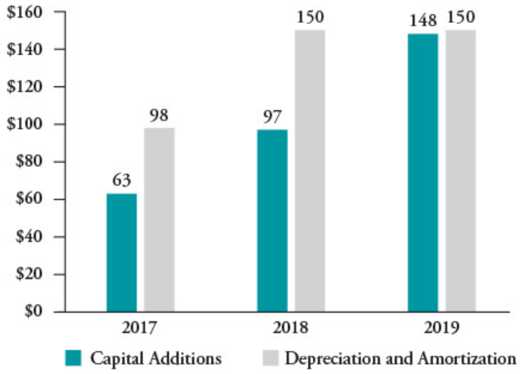
(in Millions)	December 31, 2019	December 31, 2018
Long-lived assets		
North America	$ 1,190.7	$ 1,060.8
Latin America	837.0	809.9
Europe, Middle East, and Africa	1,448.0	1,421.9
Asia	2,064.8	2,019.9
Total	**$ 5,540.5**	**$ 5,312.5**

REVENUE AND ADJUSTED EBITDA MARGIN*



Represents a Non-GAAP financial measure. Refer to the "Results of Operations" section of Item 7 included within this Form 10-K for a reconciliation from the most directly comparable GAAP measure.

CAPITAL ADDITIONS* AND DEPRECIATION AND AMORTIZATION



Primarily includes capital expenditures and expenditures related to contract manufacturers.

Products and Markets

Our portfolio is comprised of three major pesticide categories: insecticides, herbicides and fungicides. The majority of our product lines consist of insecticides and herbicides, and we have a small but fast-growing portfolio of fungicides mainly used in high value crop segments. Our insecticides are used to control a wide spectrum of pests, while our herbicide portfolio primarily targets a large variety of difficult-to-control weeds. We are also investing substantially in a plant health program that includes biological crop protection products, seed treatments and micro-nutrients.

In the Latin American region, which includes the large agricultural market of Brazil, we sell directly to large growers through our own sales and marketing organization, and we access the market through independent distributors and co-ops. In North America, we access the market through several major national and regional distributors and have our own sales and marketing organization in Canada. We access the European markets through our own sales and marketing organizations. We access key Asian markets through large distributors, in addition to either local independent distributors or our own sales and marketing organizations. Through these and other alliances, along with our own targeted marketing efforts, access to novel technologies and our innovation initiatives, we expect to maintain and enhance our access in key agricultural and non-crop markets and develop new products that will help us continue to compete effectively.

Industry Overview

The three principal categories of agricultural and non-crop chemicals are: herbicides, insecticides and fungicides, representing approximately 41 percent, 29 percent and 27 percent of global industry revenue, respectively.

The agrochemicals industry is more consolidated following several recent mergers of the leading crop protection companies, which now include FMC, ChemChina (owners of Syngenta and Adama), Bayer AG (acquired Monsanto in 2018), BASF AG and Corteva Agriscience (the agricultural division of former DowDuPont, spun out in June 2019). These five companies currently represent approximately 68 percent of the crop protection industry's global sales. The next tier of agrochemical producers include Sumitomo Chemical Company Ltd., Nufarm Ltd. and United Phosphorous Ltd. (UPL also acquired Arysta in February 2019). FMC employs various differentiated strategies and competes with unique technologies focusing on certain crops, markets and geographies, while also being supported by a low-cost manufacturing model.

Growth

We are among the leading agrochemical producers in the world. Some of our key insecticides are predominantly based on patent-protected active ingredients and continue to grow well above market patterns. Our complementary technologies combine improved formulation capabilities and a broader innovation pipeline, resulting in new and differentiated products. We will take advantage of enhanced market access positions and an expanded portfolio to deliver near-term growth.

We will continue to grow by obtaining new and approved uses for existing product lines and acquiring, accessing, developing, marketing, distributing and/or selling complementary chemistries and related technologies in order to strengthen our product portfolio and our capabilities to effectively service our target markets and customers.

Our growth efforts focus on developing environmentally compatible and sustainable solutions that can effectively increase farmers’ yields and provide cost-effective alternatives to chemistries which may be prone to resistance. We are committed to providing unique, differentiated products to our customers by acquiring and further developing technologies as well as investing in innovation to extend product life cycles. Our external growth efforts include product acquisitions, in-licensing of chemistries and technologies and alliances that bolster our market access, complement our existing product portfolio or provide entry into adjacent spaces. We have entered into a range of development and distribution agreements with other companies that provide access to new technologies and products which we can subsequently commercialize.

Diamide Growth Strategy

Our product portfolio features two key diamide-class molecules – Rynaxypyr® (chlorantraniliprole) and Cyazypyr® (cyantraniliprole) insect controls – with combined annual revenues of approximately $1.6 billion in 2019. These two molecules are class-leading in terms of performance, combining highly effective low dose rates with fast-acting, systemic, long residual control. These attributes quickly established Rynaxypyr® as the world’s leading insect control technology and we expect it to continue on a strong growth trajectory notwithstanding the expiration of composition of matter patents covering chlorantraniliprole active ingredients ("AI") in certain countries starting in late 2022. Our Cyazypyr® insect control product, a second-generation diamide, is growing quickly as we obtain more product registrations and we expect it as well to continue to grow strongly notwithstanding the expiration of its active ingredient composition of matter patents starting in the mid-2020s. This expectation is based on not only our broad patent estate and the timing of key patent milestones, but also on other critical elements that will allow FMC to continue to profitably grow the diamide franchise well beyond the expiration of key patents. These other critical elements include registration and data protection, commercial strategies, brand recognition, as well as manufacturing and supply chain complexity and FMC efficiencies.

Patents and Trade Secrets. The FMC diamide insect control patent estate is made up of many different patent families which cover: Composition of matter – both AI and certain intermediates; Manufacturing processes – both AI and certain intermediates; Formulations; Uses; and Applications. For Rynaxypyr® insect control, as of December 31, 2019, we had 21 granted patent families filed in 76 countries, with a total of 639 granted and pending patents. Together with Cyazypyr® insect control related patents, we have over 30 patent families and close to 1,000 granted and pending patents. See “Patents, Trademarks and Licenses” within this Item 1 for more details. FMC’s process patents cover the manufacturing processes for both active ingredients – chlorantraniliprole and cyantraniliprole – as well as key intermediates that are used to make the final products. Chlorantraniliprole is a complex molecule to produce, requiring 16 separate steps; FMC owns granted patents covering many of these 16 process steps and several of the intermediate chemicals, and we protect other aspects of the manufacturing processes by trade secret. Cyantraniliprole is similarly complex and covered by a comparable range of intellectual property. Many of these intermediate process patents run well past the expiration of the composition of matter patents, and in some cases stretch until the end of this decade. Third parties that intend to manufacture and sell generic chlorantraniliprole or cyantraniliprole and rely on FMC’s extensive product safety data will be required to demonstrate that their product has the same regulatory safety profile as FMC Rynaxypyr® and Cyazypyr® insect controls. To meet regulatory requirements for such difficult-to-manufacture molecules, we believe that third parties will have to produce these active ingredients using the same processes that are patented by FMC and if so, would be infringing before patent expiration and subject to our challenge for infringement. FMC also owns formulation patents which cover the use of chlorantraniliprole or cyantraniliprole in specific formulations found in commercially important end-use products.

Regulatory Data Protection. In addition to the patent estate, various pesticide laws and regulations around the world offer added protection to the initial active ingredient registrant in the form of data protection and registration timelines that can extend after the composition or process patents have expired. These rules can effectively provide a product innovator and initial active ingredient registrant such as FMC with a further period of exclusive use of the key reference data even after the applicable AI composition of matter patents have expired. Further, in certain countries, even after the period of exclusive use has expired, a generic entrant seeking to rely on the initial registrant’s reference data may have to pay significant compensation to the initial registrant. For FMC’s diamide products, such rights apply in key markets including United States, Brazil and the European Union.

Growing the Branded FMC Diamide Franchise. FMC is actively pursuing a strategy of allowing others to sell end-use pesticide products that include Rynaxypyr® and Cyazypyr® insect controls before patent expiration. These arrangements may include limited patent, data and/or trademark licenses as well as long-term commitments to purchase the diamide active ingredients from FMC. Such partner relationships allow us to grow our business by having others develop and sell diamide-based products to meet farmers' needs not within our current portfolio, offering those farmers a better alternative to competing insecticides with product safety or efficacy profiles which are less attractive than Rynaxypyr® or Cyazypyr® insect controls. These agreements generally require the third party to use the well-known and trusted Rynaxypyr® or Cyazypyr® brand names on the end-use products formulated with active ingredient supplied by FMC. As of December 31, 2019, we had four global agreements and 41 separate local-country agreements covering 11 countries. We are continuing to explore opportunities with additional companies beyond those with whom we are already engaged.

Complexity of manufacturing. Today FMC manufactures all the required intermediates in the multi-step processes, as well as the final Rynaxypyr® and Cyazypyr® products, at our own active ingredient manufacturing plants or through key contract manufacturers who produce under long-term exclusive technology-license agreements. For a third party to replicate this complex supply chain and manufacturing network would be a major undertaking with very large capital requirements. In addition, given our manufacturing know-how, scale of our operations, and continual investment in manufacturing process improvement, we believe FMC's manufacturing costs will be substantially lower than any other party seeking to produce these diamide products.

Collectively, these four factors -- deep patent estate, proprietary regulatory data, strong commercial approach leveraging our brand recognition, and capabilities of managing large scale manufacturing complexity – provide us the basis for our expectation that FMC will be the company of choice to supply chlorantraniliprole and cyantraniliprole products to third-party partners, and ultimately to farmers, well into the future.

Source and Availability of Raw Materials

We utilize numerous vendors to supply raw materials and intermediate chemicals to support operations. These materials are sourced on a global basis to strategically balance FMC's vendor portfolio.

Patents, Trademarks and Licenses

As an agricultural sciences company, FMC believes in innovation and in protecting that innovation through intellectual property rights. We own and license a significant number of U.S. and foreign patents, trademarks, trade secrets and other intellectual property that are cumulatively important to our business. The FMC intellectual property estate provides us with a significant competitive advantage which we seek to expand and renew on a continual basis. We manage our technology investment to discover and develop new active ingredients and biological products, as well as to continue to improve manufacturing processes and existing active ingredients through new formulations, mixtures or other concepts. FMC's technology innovation processes capture those innovations and protect them through the most appropriate form of intellectual property rights. We also in-license certain active ingredients and other technologies under patents held by third parties, and have granted licenses to certain of our patents to third parties.

Our patents cover many aspects of our business, including our chemical and biological active ingredients, intermediate chemicals, manufacturing processes to produce such active ingredients or intermediates, formulations, and product uses, as well as many aspects of our research and development activities that support the FMC new product pipeline. Patents are granted by individual jurisdictions and the duration of our patents depends on their respective jurisdictions and payment of annuities.

As of December 31, 2019, the Company owned a total of approximately 200 active granted U.S. patents and over 2,500 active granted foreign patents; we also have approximately 1,600 patent applications pending globally.

In our current product portfolio, our diamide insect control products based on Rynaxypyr® (Chlorantraniliprole) and Cyazypyr® (Cyantraniliprole) active ingredients have a substantial patent estate which will remain in force well into the future. More details regarding our diamide granted patent estate are set forth in the tables below:

Numbers of active Granted Patents by type*: Chlorantraniliprole and Cyantraniliprole, as of December 31, 2019

	United States	Foreign
Active Ingredients	21	243
Intermediates and Methods of Manufacturing	23	222
Formulations/Mixtures/Applications	9	311
Total	**53**	**776**

*Patent families were only placed under one type but may cover several types.

Remaining Life of Granted Patents: Chlorantraniliprole and Cyantraniliprole, as of December 31, 2019

	United States	Foreign
Through December 31, 2024	33	302
2025 - 2029	14	435
2030 - 2035	6	39
Total	**53**	**776**

We also own many trademarks that are well recognized by customers or product end-users. Unlike patents, ownership rights in trademarks can be continued indefinitely so long as the trademarks are properly used and renewal fees are paid.

We actively monitor and manage our patents and trademarks to maintain our rights in these assets and we strategically take aggressive action when we believe our intellectual property rights are being infringed. While we believe that the invalidity or loss of any particular patent, trademark or license would be a remote possibility, our patent and trademark estate related to our diamide insect control products based on Rynaxypyr® and Cyazypyr® active ingredients in the aggregate are of material importance to our operations.

Seasonality

The seasonal nature of the crop protection market and the geographic spread of our business can result in significant variations in quarterly earnings among geographic locations. Our products sold in the northern hemisphere (North America, Europe and parts of Asia) serve seasonal agricultural markets from March through September, generally resulting in significant earnings in the first and second quarters, and to a lesser extent in the fourth quarter. Markets in the southern hemisphere (Latin America and parts of the Asia Pacific region, including Australia) are served from July through February, generally resulting in earnings in the third, fourth and first quarters.

Competition

We encounter substantial competition in our business. We market our products through our own sales organization and through alliance partners, independent distributors and sales representatives. The number of our principal competitors varies from market to market. In general, we compete by providing advanced technology, high product quality, reliability, quality customer and technical service, and by operating in a cost-efficient manner.

Our business competes primarily in the global chemical crop protection market for insecticides, herbicides and fungicides. Industry products include crop protection chemicals and, for certain major competitors, genetically engineered (crop biotechnology) products. Competition from generic agrochemical producers is significant as a number of key product patents have expired in the last two decades. In general, we compete as an innovator by focusing on product development, including novel formulations, proprietary mixes, and advanced delivery systems and by acquiring or licensing (mostly) proprietary chemistries or technologies that complement our product and geographic focus. We also differentiate ourselves by our global cost-competitiveness through our manufacturing strategies, establishing effective product stewardship programs and developing strategic alliances that strengthen market access in key countries and regions.

Research and Development Expense

The development efforts in our business focus on developing environmentally sound solutions — both new active ingredients and new product formulations — that cost-effectively increase farmers' yields and provide alternatives to existing and new chemistries. On June 24, 2019, we announced our investment of more than $50 million over the next three years at our FMC Stine Research Center in Newark, Delaware, to upgrade infrastructure and complete construction on a new state-of-the-art, greenhouse and laboratory facility.

Environmental Laws and Regulations

A discussion of environmental related factors can be found in Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in Note 12 "Environmental Obligations" in the notes to our consolidated financial statements included in this Form 10-K.

Employees

We employ approximately 6,400 people with about 1,500 people in our domestic operations and 4,900 people in our foreign operations.

Approximately 3 percent of our U.S.-based and 35 percent of our foreign-based employees, respectively, are represented by collective bargaining agreements. We have successfully concluded most of our recent contract negotiations without any material work stoppages. In those rare instances where a work stoppage has occurred, there has been no material effect on consolidated sales and earnings. We cannot predict, however, the outcome of future contract negotiations. In 2020, eight foreign collective-bargaining agreements will be expiring. These contracts affect approximately 23 percent of our foreign-based employees. There are no U.S. collective-bargaining agreements expiring in 2020.

SEC Filings

SEC filings are available free of charge on our website, www.fmc.com. Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports are posted as soon as practicable after we furnish such materials to the SEC.

ITEM 1A. RISK FACTORS

Among the factors that could have an impact on our ability to achieve operating results and meet our other goals are:

Industry Risks:

Pricing and volumes in our markets are sensitive to a number of industry specific and global issues and events including:

- Competition and new agricultural technologies - Our business faces competition, which could affect our ability to maintain or raise prices, successfully enter certain markets or retain our market position. Competition for our business includes not only generic suppliers of the same pesticidal active ingredients but also alternative proprietary pesticide chemistries and crop protection technologies that are bred into or applied onto seeds. Increased generic presence in agricultural chemical markets has been driven by the number of significant product patents and product data protections that have expired in the last decade, and this trend is expected to continue. Also, there are changing competitive dynamics in the agrochemical industry as some of our competitors have consolidated, resulting in them having greater scale and diversity, as well as market reach. These competitive differences may not be overcome and may erode our business. Agriculture in many countries is changing and new technologies (e.g., precision pest prediction or application, data management) continue to emerge. At this time, the scope and potential impact of these technologies are largely unknown but could have the potential to disrupt our business.
- Climatic conditions - Our markets are affected by climatic conditions, which could adversely impact crop pricing and pest infestations. For example, drought may reduce the need for fungicides, which could result in fewer sales and greater unsold inventories in the market, whereas excessive rain could lead to increased plant disease or weed growth requiring growers to purchase and use more pesticides. Drought and/or increased temperatures may change insect pest pressures, requiring growers to use more, less, or different insecticides. Natural disasters can impact production at our facilities in various parts of the world. The nature of these events makes them difficult to predict.
- Cyclicality - While our business is well balanced geographically, in any given calendar quarter a certain geography(ies) will predominate in light of seasonal variations in the demand for our products given the nature of the crop protection market and the geographic regions in which we operate. Unexpected market conditions in that predominating geography(ies), such as adverse weather, pest pressures, or other risks described herein, may impact our business if occurring during a calendar quarter in which such geography(ies) is predominating.
- Changing regulatory environment and public perception - Changes in the regulatory environment, particularly in the U.S., Brazil, China, India, Argentina and the European Union, could adversely impact our ability to continue producing and/or selling certain products in our domestic and foreign markets or could increase the cost of doing so. Additionally, changes to the regulatory environment may be influenced by non-government public pressure as a result of negative perception regarding the use of our crop protection products. We are sensitive to this general regulatory risk given the need to obtain and maintain pesticide registrations in every country in which we sell our products. Many countries require re-registration of pesticides to meet new and more challenging requirements; while we defend our products vigorously, these re-registration processes may result in significant additional data costs, reduced number of permitted product uses, or potential product cancellation. Compliance with changing laws and regulations may involve significant costs or capital expenditures or require changes in business practice that could result in reduced profitability. In the European Union, the regulatory risk specifically includes the chemicals regulation known as REACH (Registration, Evaluation, and Authorization of Chemicals), which requires manufacturers to verify through a special registration system that their chemicals can be marketed safely.
- Geographic presence outside of U.S. - We have a strong presence in Latin America, Europe and Asia, as well as in the U.S. Growth of our geographic footprint particularly in Europe and key Asian countries such as India means that developments outside the U.S. will generally have a more significant effect on our operations than in the past. Our operations outside the U.S. are subject to special risks and restrictions, including: fluctuations in currency values; exchange control regulations; changes in local political or economic conditions; governmental pricing directives; import and trade restrictions or tariffs; import or export licensing requirements and trade policy; restrictions on the ability to repatriate funds; and other potentially detrimental domestic and foreign governmental practices or policies affecting U.S. companies doing business abroad.
- Climate change and government regulation of greenhouse gases - The effects of climate change such as rising sea levels, drought, flooding and general volatility in seasonal temperatures could adversely affect our operations globally. Extreme weather events attributable to climate change may result in, among other things, physical damage to our property and equipment, and interruptions to our supply chain. Climate change may also impact markets in which we sell our products, where, for example, a prolonged drought may result in decreased demand for our products. The more gradual effects of persistent temperature change in geographies with significant agricultural lands may result in changes in lands suitable for agriculture or changes in the mix of crops suitable for cultivation and the pests that may be present in such geographies. For example, prolonged increase in average temperature may make northern lands suitable for growing crops not grown historically in such climes, leading farmers to shift from crops such as wheat to

soybean and may result in new or different weed, plant disease or insect pressures on such crops – such changes would impact the mix of pesticide products farmers would purchase, which may be adverse for us, depending on the local market and our product mix. Additionally, changes in the governmental regulation of greenhouse gases, depending on their nature and scope, could subject our manufacturing operations to significant additional costs or limits on operations.

- Fluctuations in commodity prices - Our operating results could be significantly affected by the cost of commodities - both chemical raw material commodities and harvested crop commodities. We may not be able to raise prices or improve productivity sufficiently to offset future increases in chemical raw material commodity pricing. Accordingly, increases in such commodity prices may negatively affect our financial results. We use hedging strategies to address material commodity price risks, where hedge strategies are available on reasonable terms. However, we are unable to avoid the risk of medium- and long-term increases. Additionally, fluctuations in harvested crop commodity prices could negatively impact our customers' ability to sell their products at previously forecasted prices resulting in reduced customer liquidity. Inadequate customer liquidity could affect our customers’ abilities to pay for our products and, therefore, affect existing and future sales or our ability to collect on customer receivables.
- Supply arrangements - Certain raw materials are critical to our production processes and our purchasing strategy and supply chain design are complex. While we have made supply arrangements to meet planned operating requirements, an inability to obtain the critical raw materials or operate under contract manufacturing arrangements would adversely impact our ability to produce certain products and could lead to operational disruption and increase uncertainties around business performance. We increasingly source critical intermediates and finished products from a number of suppliers, largely outside of the U.S. and principally in China. An inability to obtain these products or execute under contract sourcing arrangements would adversely impact our ability to sell products.
- Economic and political change - Our business has been and could continue to be adversely affected by economic and political changes in the markets where we compete including: inflation rates, recessions, trade restrictions, tariff increases or potential new tariffs, foreign ownership restrictions and economic embargoes imposed by the U.S. or any of the foreign countries in which we do business; changes in laws, taxation, and regulations and the interpretation and application of these laws, taxes, and regulations; restrictions imposed by the U.S. government or foreign governments through exchange controls or taxation policy; nationalization or expropriation of property, undeveloped property rights, and legal systems or political instability; other governmental actions; and other external factors over which we have no control. Economic and political conditions within the U.S. and foreign jurisdictions or strained relations between countries can cause fluctuations in demand, price volatility, supply disruptions, or loss of property. In Argentina, continued inflation and foreign exchange controls could adversely affect our business. Realignment of change in regional economic arrangements could have an operational impact on our businesses. In China, unpredictable enforcement of environmental regulations could result in unanticipated shutdowns in broad geographic areas, impacting our contract manufacturers and raw material suppliers.

Operational Risks:

- Market access risk - Our results may be affected by changes in distribution channels, which could impact our ability to access the market.
- Business disruptions - We produce products through a combination of owned facilities and contract manufacturers. We own and operate large-scale active ingredient manufacturing facilities in the U.S. (Mobile), Puerto Rico (Manati), China (Pudong and Jinshan), Denmark (Ronland), and India (Panoli). Our operating results are dependent in part on the continued operation of these production facilities. Interruptions at these facilities may materially reduce the productivity of a particular manufacturing facility, or the profitability of our business as a whole. Although we take precautions to enhance the safety of our operations and minimize the risk of disruptions, our operations and those of our contract manufacturers are subject to hazards inherent in chemical manufacturing and the related storage and transportation of raw materials, products and wastes. These potential hazards include explosions, fires, severe weather and natural disasters, mechanical failure, unscheduled downtimes, supplier disruptions, labor shortages or other labor difficulties, information technology systems outages, disruption in our supply chain or manufacturing and distribution operations, transportation interruptions, chemical spills, discharges or releases of toxic or hazardous substances or gases, shipment of contaminated or off-specification product to customers, storage tank leaks, other environmental risks, or other sudden disruption in business operations beyond our control as a result of events such as acts of sabotage, terrorism or war, civil or political unrest, natural disasters, large scale power outages and public health epidemics/pandemics. Some of these hazards may cause severe damage to or destruction of property and equipment or personal injury and loss of life and may result in suspension of operations or the shutdown of affected facilities. Further, outbreaks of pandemics such as the COVID-19 (Wuhan) coronavirus currently impacting China and other countries, or the fear of such events, could provoke responses, including government imposed travel restrictions, which may impact: access to our production sites, the ability of raw material suppliers to produce and deliver goods to us, our ability to ship our products to production, warehousing or customer sites, or the ability of our sales organization to make sales or for customers (or indirect customers such as farmers) to purchase our products.

- Litigation and environmental risks - Current reserves relating to our ongoing litigation and environmental liabilities may ultimately prove to be inadequate.
- Hazardous materials - We manufacture and transport certain materials that are inherently hazardous due to their toxic or volatile nature. While we take precautions to handle and transport these materials in a safe manner, if they are mishandled or released into the environment, they could cause property damage or result in personal injury claims against us.
- Environmental compliance - We are subject to extensive federal, state, local, and foreign environmental and safety laws, regulations, directives, rules and ordinances concerning, among other things, emissions in the air, discharges to land and water, and the generation, handling, treatment, disposal and remediation of hazardous waste and other materials. We may face liability arising out of the normal course of business, including alleged personal injury or property damage due to exposure to chemicals or other hazardous substances at our current or former facilities or chemicals that we manufacture, handle or own. We take our environmental responsibilities very seriously, but there is a risk of environmental impact inherent in our manufacturing operations and transportation of chemicals. Any substantial liability for environmental damage could have a material adverse effect on our financial condition, results of operations and cash flows.
- Compliance with laws and regulations - The global regulatory environment is becoming increasingly complex and requires more resources to effectively manage, which may increase the potential for misunderstanding or misapplication of regulatory standards.
- Workforce - The inability to recruit and retain key personnel or the unexpected loss of key personnel may adversely affect our operations. In addition, our future success depends in part on our ability to identify and develop talent to succeed senior management and other key members of the organization.

Technology Risks:
- Information technology security and data privacy risks - As with all enterprise information systems, our information technology systems could be penetrated by outside parties’ intent on extracting information, corrupting information, deploying ransomware, or disrupting business processes. Our systems have in the past been, and likely will in the future be, subject to unauthorized access attempts. Unauthorized access could disrupt our business operations and could result in failures or interruptions in our computer systems, lockout from systems due to ransomware, or in the loss of assets and could have a material adverse effect on our business, financial condition or results of operations. In addition, breaches of our security measures or the accidental loss, inadvertent disclosure, or unapproved dissemination of proprietary information or sensitive or confidential information about the Company, our employees, our vendors, or our customers, could result in litigation, violations of various data privacy regulations in some jurisdictions, and also potentially result in a liability. While we have taken measures to assess the requirements of, and to comply with the European Union's General Data Protection Regulation and data privacy regulations in other countries, these measures may be challenged by authorities that regulate data-related compliance. We could incur significant expense in facilitating and responding to investigations and if the measures we have taken prove to be inadequate, we could face fines or penalties. This could damage our reputation, or otherwise harm our business, financial condition, or results of operations.
- Technological and new product discovery/development - Our ability to compete successfully depends in part upon our ability to maintain a superior technological capability and to continue to identify, develop and commercialize new and innovative, high value-added products for existing and future customers. Our investment in the discovery and development of new pesticidal active ingredients relies on discovery of new chemical molecules or biological strains. Such discovery processes depend on our scientists being able to find new molecules and strains, which are novel and outside of patents held by others, and such molecules/strains being efficacious against target pests, and our ability to develop those molecules and strains into new products without creating an undue risk to human health and the environment, and then meeting applicable regulatory criteria. The timeline from active ingredient discovery through full development and product launch averages 8-10 years depending on local regulatory requirements; the complexity and duration of developing new products create risks that product concepts may fail during development or, when launched, may not meet then-current market needs or competitive conditions.

Portfolio Management and Integration Risks:
- Portfolio management risks - We continuously review our portfolio which includes the evaluation of potential business acquisitions that may strategically fit our business and strategic growth initiatives. If we are unable to successfully integrate and develop our acquired businesses, we could fail to achieve anticipated synergies which would include expected cost savings and revenue growth. Failure to achieve these anticipated synergies could materially and adversely affect our financial results. In addition to strategic acquisitions we evaluate the diversity of our portfolio in light of our objectives and alignment with our growth strategy. In implementing this strategy we may not be successful in separating underperforming or non-strategic assets. The gains or losses on the divestiture of, or lost operating income from, such assets (e.g., divesting) may affect the Company’s earnings. Moreover, we may incur asset

impairment charges related to acquisitions or divestitures that reduce earnings. Significant effort will likely be required to ensure that the right mix of resources are trained, engaged and focused on achieving business objectives while adhering to our core values of safety, ethics and compliance.

- Innovation and intellectual property - Our innovation efforts are protected by patents, trade secrets and other intellectual property rights that cover many of our current products, manufacturing processes, and product uses, as well as many aspects of our research and development activities supporting our new product pipeline. Trademarks protect valuable brands associated with our products. Patents and trademarks are granted by individual jurisdictions and the duration of our patents depends on their respective jurisdictions and payment of annuities. Our future performance will depend on our ability to address active ingredient composition of matter patent expirations through effective enforcement of our patents that continue to cover key chemical intermediates and process patents, as well as portfolio life cycle management, particularly for our high value diamide insecticides (see "Diamide Growth Strategy" and "Patents, Trademarks and Licenses" in Item 1 for more details). If our innovation efforts fail to continue to make process improvements to reduce costs, such conditions could impede our competitive position. Some of our competitors may secure patents on production methods or uses of products that may limit our ability to compete cost-effectively.
- Enforcement of intellectual property rights - The composition of matter patents on our Rynaxypyr® active ingredient is nearing its expiration in several key countries. We have a broad estate of additional patents regarding the production of Rynaxypyr® active ingredient, as well as trademark and data exclusivity protection in certain countries that extend well beyond the active ingredient composition of matter patents. (See "Diamide Growth Strategy" and "Patents, Trademarks and Licenses" in Item 1). We intend to strategically and vigorously enforce our patents and other forms of intellectual property and have done so already against several third parties. Other third parties may seek to enter markets with infringing products or may find alternative production methods that avoid infringement or we may not be successful in litigating to enforce our patents due to the risks inherent in any litigation. Patents involve complex factual and legal issues and, thus, the scope, validity or enforceability of any patent claims we have or may obtain cannot be clearly predicted. Patents may be challenged in the courts, as well as in various administrative proceedings before U.S. or foreign patent offices, and may be deemed unenforceable, invalidated or circumvented. We are currently and may in the future be a party to various lawsuits or administrative proceedings involving our patents. Such challenges can result in some or all of the claims of the asserted patent being invalidated or deemed unenforceable. In such circumstances, an adverse patent enforcement decision which could lead to the entry of competing chlorantraniliprole products in relevant markets may materially and adversely impact our financial results.
- System implementation and integration risks - Failure to successfully integrate the acquired DuPont Crop Protection Business and transition the management information systems of the DuPont Crop Protection Business from the ERP system provided under Transition Services Agreement by DuPont to a management information system integrated with FMC’s legacy processes could result in interruption of operations or failure to achieve synergies we expect. This could cause our future results of operations to be materially worse than expected.
- Major enterprise initiatives - In addition to the continued integration of the DuPont Crop Protection Business assets, we are implementing other major initiatives such as the migration to a single global instance of SAP S/4 HANA. These projects will place significant demands on certain of our internal functional groups, particularly finance and information technology. Failure to successfully execute these projects could materially and adversely affect our expected performance.
- Potential tax implications of FMC Lithium separation - We have received an opinion from outside counsel to the effect that the spin-off of FMC Lithium as a distribution to our stockholders qualified as a non-taxable transaction for U.S. federal income tax purposes. The opinion is based on certain assumptions and representations as to factual matters from both FMC and FMC Lithium, as well as certain covenants by those parties. The opinion cannot be relied upon if any of the assumptions, representations or covenants is incorrect, incomplete or inaccurate or is violated in any material respect. The opinion of counsel is not binding upon the IRS or the courts and there is no assurance that the IRS or a court will not take a contrary position. It is possible that the IRS or a state or local taxing authority could take the position that aforementioned transaction results in the recognition of significant taxable gain by FMC, in which case FMC may be subject to material tax liabilities.

Financial Risks:

- Access to debt and capital markets - We rely on cash generated from operations and external financing to fund our growth and working capital needs. Limitations on access to external financing could adversely affect our operating results. Moreover, interest payments, dividends and the expansion of our business or other business opportunities may require significant amounts of capital. We believe that our cash from operations and available borrowings under our revolving credit facility will be sufficient to meet these needs in the foreseeable future. However, if we need external financing, our access to credit markets and pricing of our capital will be dependent upon maintaining sufficient credit ratings from credit rating agencies and the state of the capital markets generally. There can be no assurances that we would be able to obtain equity or debt financing on terms we deem acceptable, and it is possible that the cost of any financings could increase significantly, thereby increasing our expenses and decreasing our net income. If we are unable to generate sufficient cash flow or raise adequate external financing, including as a result of significant disruptions in the global credit markets, we could be forced to restrict our operations and growth opportunities, which could adversely affect our operating results.
- Credit default risks - We may use our existing revolving credit facility to meet our cash needs, to the extent available. In the event of a default in this credit facility or any of our senior notes, we could be required to immediately repay all outstanding borrowings and make cash deposits as collateral for all obligations the facility supports, which we may not be able to do. Any default under any of our credit arrangements could cause a default under many of our other credit agreements and debt instruments. Without waivers from lenders party to those agreements, any such default could have a material adverse effect on our ability to continue to operate.
- Exposure to global economic conditions - Deterioration in the global economy and worldwide credit and foreign exchange markets could adversely affect our business. A worsening of global or regional economic conditions or financial markets could adversely affect both our own and our customers' ability to meet the terms of sale or our suppliers' ability to perform all their commitments to us. A slowdown in economic growth in our international markets, or a deterioration of credit or foreign exchange markets could adversely affect customers, suppliers and our overall business there. Customers in weakened economies may be unable to purchase our products, or it could become more expensive for them to purchase imported products in their local currency, or sell their commodities at prevailing international prices, and we may be unable to collect receivables from such customers.
- Foreign exchange rate risks - We are an international company operating in many countries around the world, and thus face foreign exchange rate risks in the normal course of our business. We are particularly sensitive to the Brazilian real, the euro, the Indian rupee, the Chinese yuan, the Mexican peso, the Argentine peso and the U.S. dollar. While we engage in hedging and other strategies to mitigate those risks, unexpected severe changes in foreign exchange may create risks that could materially and adversely affect our expected performance.
- Uncertain tax rates - Our future effective tax rates may be materially impacted by numerous items including: a future change in the composition of earnings from foreign and domestic tax jurisdictions, as earnings in foreign jurisdictions are typically taxed at different statutory rates than the U.S. federal statutory rate; accounting for uncertain tax positions; business combinations; expiration of statute of limitations or settlement of tax audits; changes in valuation allowance; changes in tax law; currency gains and losses.
- Uncertain recoverability of investments in long-lived assets - We have significant investments in long-lived assets and continually review the carrying value of these assets for recoverability in light of changing market conditions and alternative product sourcing opportunities. We may recognize future impairments of long-lived assets which could adversely affect our results of operations.
- Pension and postretirement plans - Obligations related to our pension and postretirement plans reflect certain assumptions. To the extent actual experience differs from these assumptions, our costs and funding obligations could increase or decrease significantly.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

FMC leases executive offices in Philadelphia, Pennsylvania and operates 26 manufacturing facilities in 18 countries. Our major research and development facilities are in Newark, Delaware; Shanghai, China and Copenhagen, Denmark.

We believe our facilities are in good operating conditions. The number and location of our owned or leased production properties for continuing operations are as follows:

	North America	Latin America	Europe, Middle East and Africa	Asia	Total
Total	**5**	**2**	**6**	**13**	**26**

ITEM 3. LEGAL PROCEEDINGS

Like hundreds of other industrial companies, we have been named as one of many defendants in asbestos-related personal injury litigation. Most of these cases allege personal injury or death resulting from exposure to asbestos in premises of FMC or to asbestos-containing components installed in machinery or equipment manufactured or sold by discontinued operations. The machinery and equipment businesses we owned or operated did not fabricate the asbestos-containing component parts at issue in the litigation, and to this day, neither the U.S. Occupational Safety and Health Administration nor the Environmental Protection Agency has banned the use of these components. Further, the asbestos-containing parts for this machinery and equipment were accessible only at the time of infrequent repair and maintenance. A few jurisdictions have permitted claims to proceed against equipment manufacturers relating to insulation installed by other companies on such machinery and equipment. We believe that, overall, the claims against FMC are without merit.

As of December 31, 2019, there were approximately 10,400 premises and product asbestos claims pending against FMC in several jurisdictions. Since the 1980s, approximately 116,000 asbestos claims against FMC have been discharged, the overwhelming majority of which have been dismissed without any payment to the claimant. Since the 1980s, settlements with claimants have totaled approximately $106 million.

We intend to continue managing these asbestos-related cases in accordance with our historical experience. We have established a reserve for this litigation within our discontinued operations and believe that any exposure of a loss in excess of the established reserve cannot be reasonably estimated. Our experience has been that the overall trends in asbestos litigation have changed over time. Over the last several years, we have seen changes in the jurisdictions where claims against FMC are being filed and changes in the mix of products named in the various claims. Because these claim trends have yet to form a predictable pattern, we are presently unable to reasonably estimate our asbestos liability with respect to claims that may be filed in the future.

Please see Note 1 “Principal Accounting Policies and Related Financial Information" - Environmental obligations, Note 12 “Environmental Obligations” and Note 20 “Guarantees, Commitments and Contingencies” in the notes to our consolidated financial statements included in this Form 10-K, the content of which are incorporated by reference to this Item 3.

ITEM 4. MINE SAFETY DISCLOSURES

Not Applicable.

ITEM 4A. INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The executive officers of FMC Corporation, the offices they currently hold, their business experience during the previous five years and their ages as of December 31, 2019, are as follows. Each executive officer has been employed by the Company for more than five years.

Name	Age	Office and year of election
Pierre R. Brondeau	62	Chief Executive Officer and Chairman of the Board (18-present); President, Chief Executive Officer and Chairman of the Board (10-18); President and Chief Executive Officer of Dow Advanced Materials, a specialty materials company (08-09); President and Chief Operating Officer of Rohm and Haas Company, a predecessor of Dow Advanced Materials (07-08); Board Member, T.E. Connectivity Electronics (07-present); Board Member, American Chemistry Council (17-present); Board Trustee, Franklin Institute (17-present), Board Member, Livent Corporation (18-present)
Mark A. Douglas	57	President and Chief Executive Officer-Elect (19-present), President and Chief Operating Officer (18-19), President, FMC Agricultural Solutions (12-18); President, Industrial Chemicals Group (11-12); Vice President, Global Operations and International Development (10-11); Vice President, President Asia, Dow Advanced Materials (09-10); Board Member, Quaker Chemical (13-present); Board Member CropLife International (17-present); Board Member Pennsylvania Academy of the Fine Arts (16-present)
Andrew D. Sandifer	50	Executive Vice President and Chief Financial Officer (18-present); Vice President and Treasurer (16-18); Vice President, Corporate Transformation (14-16); Vice President, Strategic Development (10-14); Vice President, Strategic Initiatives of ARAMARK (10); Board Member, Philabundance (14-present); Board Trustee, Germantown Academy (17-present)
Michael F. Reilly	56	Executive Vice President, General Counsel, Chief Compliance Officer and Secretary (19-present); Vice President, Associate General Counsel and Chief Compliance Officer (16-19); Associate General Counsel (13-16); Board Member, First State Montessori Academy, Inc. (18-present)

All officers are elected to hold office for one year or until their successors are elected and qualified. No family relationships exist among any of the above-listed officers, and there are no arrangements or understandings between any of the above-listed officers and any other person pursuant to which they serve as an officer. The above-listed officers have not been involved in any legal proceedings during the past ten years of a nature for which the SEC requires disclosure that are material to an evaluation of the ability or integrity of any such officer.

[Table of Contents](#)

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDERS MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

FMC common stock of $0.10 par value is traded on the New York Stock Exchange (Symbol: FMC). There were 2,454 registered common stockholders as of December 31, 2019.

FMC's annual meeting of stockholders will be held at 2:00 p.m. on Tuesday, April 28, 2020, at FMC Tower, 2929 Walnut Street Philadelphia, Pennsylvania. Notice of the meeting, together with proxy materials, will be mailed approximately five weeks prior to the meeting to stockholders of record as of March 4, 2020.

Transfer Agent and Registrar of Stock:

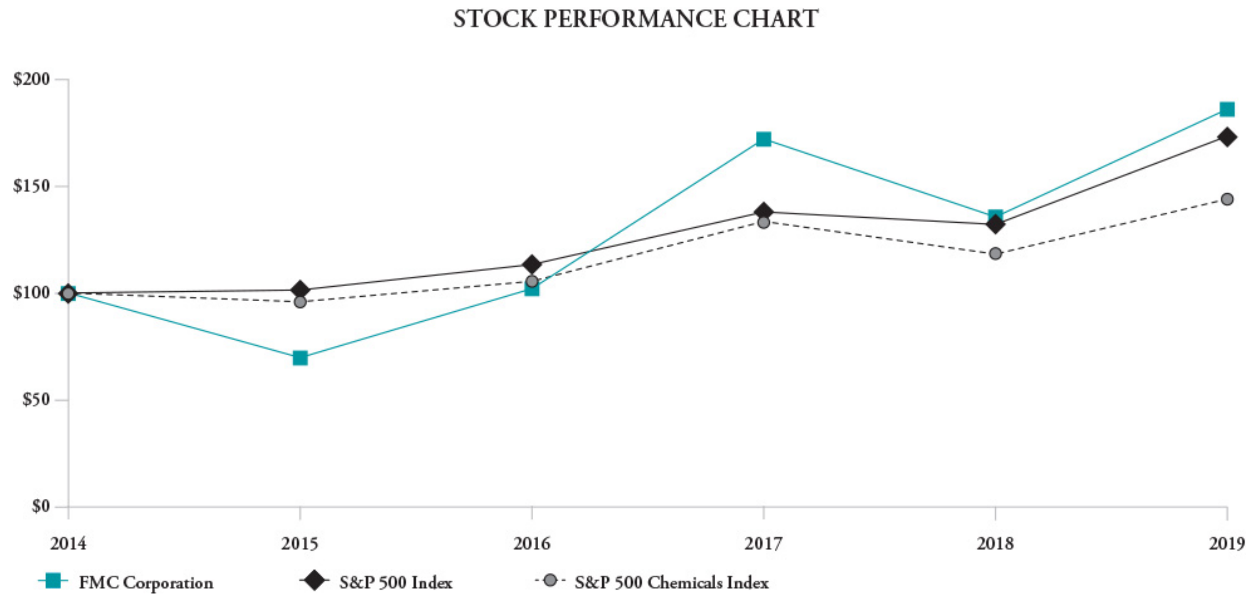
EQ Shareowner Services		
1110 Centre Pointe Curve, Suite 101 Mendota Heights, MN 55120-4100	or	P.O. Box 64874 St. Paul, MN 55164-0854
Phone: 1-800-468-9716 (651-450-4064 local and outside the U.S.) https://equiniti.com/us/		

Stockholder Return Performance Presentation

The graph that follows shall not be deemed to be incorporated by reference into any filing made by FMC under the Securities Act of 1933 or the Securities Exchange Act of 1934.

The following Stockholder Performance Graph compares the five-year cumulative total return on FMC's Common Stock with the S&P 500 Index and the S&P 500 Chemicals Index. The comparison assumes $100 was invested on December 31, 2014, in FMC's Common Stock and in both of the indices, and the reinvestment of all dividends.

	2014	2015	2016	2017	2018	2019
FMC Corporation	$ 100.00	69.77	102.03	171.94	135.54	185.87
S&P 500 Index	100.00	101.37	113.30	137.85	132.03	173.25
S&P 500 Chemicals Index	100.00	95.88	105.45	133.42	118.15	143.88



The following table summarizes information with respect to the purchase of our common stock during the three months ended December 31, 2019:

ISSUER PURCHASES OF EQUITY SECURITIES

			Publicly Announced Program		
Period	**Total Number of Shares Purchased**	**Average Price Paid Per Share**	**Total Number of Shares Purchased**	**Total Dollar Amount Purchased**	**Maximum Dollar Value of Shares that May Yet be Purchased**
October	675	$ 82.53	—	$ —	$ 700,000,664
November	350,000	98.07	350,000	34,323,290	665,677,374
December	664,608	98.82	664,608	65,676,754	600,000,620
Total	**1,015,283**	**$ 98.55**	**1,014,608**	**$ 100,000,044**	

In 2019, 4.7 million shares were repurchased under the publicly announced repurchase program. At December 31, 2019, approximately $600 million remained unused under our Board-authorized repurchase program. This repurchase program does not include a specific timetable or price targets and may be suspended or terminated at any time. Shares may be purchased through open market or privately negotiated transactions at the discretion of management based on its evaluation of market conditions and other factors. We also reacquire shares from time to time from employees in connection with the vesting, exercise and forfeiture of awards under our equity compensation plans.

ITEM 6. SELECTED FINANCIAL DATA

SELECTED CONSOLIDATED FINANCIAL DATA

The selected consolidated financial and other data presented below for, and as of the end of, each of the years in the five-year period ended December 31, 2019, are derived from our consolidated financial statements. The selected consolidated financial data should be read in conjunction with our consolidated financial statements for the year ended December 31, 2019.

	Year Ended December 31,				
(in Millions, except per share data)	2019	2018	2017	2016	2015
Income Statement Data:					
Revenue	$ 4,609.8	$ 4,285.3	$ 2,531.2	$ 2,274.8	$ 2,252.9
Income from continuing operations before equity in (earnings) loss of affiliates, non-operating pension and postretirement charges (income), interest expense, net and income taxes	821.6	740.9	158.5	197.8	(131.0)
Income (loss) from continuing operations before income taxes	655.0	608.4	95.8	111.6	(222.1)
Income (loss) from continuing operations	$ 543.5	$ 537.6	$ (133.1)	$ 73.4	$ (223.4)
Discontinued operations, net of income taxes (1)	(63.3)	(26.1)	671.5	138.3	721.9
Net income (loss)	$ 480.2	$ 511.5	$ 538.4	$ 211.7	$ 498.5
Less: Net income (loss) attributable to noncontrolling interest	2.8	9.4	2.6	2.6	9.5
Net income (loss) attributable to FMC stockholders	**$ 477.4**	**$ 502.1**	**$ 535.8**	**$ 209.1**	**$ 489.0**
Amounts attributable to FMC stockholders:					
Continuing operations, net of income taxes	$ 540.7	$ 531.4	$ (135.7)	$ 71.1	$ (232.8)
Discontinued operations, net of income taxes	(63.3)	(29.3)	671.5	138.0	721.8
Net income (loss)	**$ 477.4**	**$ 502.1**	**$ 535.8**	**$ 209.1**	**$ 489.0**
Basic earnings (loss) per common share attributable to FMC stockholders:					
Continuing operations	$ 4.12	$ 3.94	$ (1.01)	$ 0.53	$ (1.74)
Discontinued operations	(0.48)	(0.22)	5.00	1.03	5.40
Net income (loss)	**$ 3.64**	**$ 3.72**	**$ 3.99**	**$ 1.56**	**$ 3.66**
Diluted earnings (loss) per common share attributable to FMC stockholders:					
Continuing operations	$ 4.10	$ 3.91	$ (1.01)	$ 0.53	$ (1.74)
Discontinued operations	(0.48)	(0.22)	5.00	1.03	5.40
Net income (loss)	**$ 3.62**	**$ 3.69**	**$ 3.99**	**$ 1.56**	**$ 3.66**
Balance Sheet Data:					
Total assets	$ 9,872.7	$ 9,974.3	$ 9,206.3	$ 6,139.3	$ 6,325.9
Long-term debt	3,113.9	2,531.0	3,094.2	1,801.2	2,037.8
Other Data:					
Cash dividends declared per share	$ 1.64	$ 0.90	$ 0.66	$ 0.66	$ 0.66

(1) Discontinued operations, net of income taxes includes, in periods up to their respective dispositions, our discontinued FMC Lithium, FMC Health and Nutrition, and FMC Alkali Chemicals division. It also includes other historical discontinued gains and losses related to adjustments to our estimates of our retained liabilities for environmental exposures, general liability, workers' compensation, postretirement benefit obligations, legal defense, property maintenance and other costs, losses for the settlement of litigation and gains related to property sales. Amount in 2017 includes the divestiture gain associated with FMC Health and Nutrition. Amount in 2015 includes the divestiture gain associated with the FMC Alkali Chemicals division sale.

FORWARD-LOOKING INFORMATION

Statement under the Safe Harbor Provisions of the Private Securities Litigation Reform Act of 1995: FMC and its representatives may from time to time make written or oral statements that are “forward-looking” and provide other than historical information, including statements contained herein, in FMC’s other filings with the SEC, and in reports or letters to FMC stockholders.

In some cases, FMC has identified forward-looking statements by such words or phrases as “will likely result,” “is confident that,” “expect,” “expects,” “should,” “could,” “may,” “will continue to,” “believe,” “believes,” “anticipates,” “predicts,” “forecasts,” “estimates,” “projects,” “potential,” “intends” or similar expressions identifying “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, including the negative of those words and phrases. Such forward-looking statements are based on management’s current views and assumptions regarding future events, future business conditions and the outlook for the company based on currently available information. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any results, levels of activity, performance or achievements expressed or implied by any forward-looking statement. These factors include, among other things, the risk factors and other cautionary statements filed with the SEC included within this Form 10-K as well as other SEC filings and public communications. FMC cautions readers not to place undue reliance on any such forward-looking statements, which speak only as of the date made. Forward-looking statements are qualified in their entirety by the above cautionary statement. FMC undertakes no obligation, and specifically disclaims any duty, to update or revise any forward-looking statements to reflect events or circumstances arising after the date on which they were made, except as otherwise required by law.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

We are an agricultural sciences company, providing innovative solutions to growers around the world with a robust product portfolio fueled by a market-driven discovery and development pipeline in crop protection, plant health, and professional pest and turf management. We operate in a single distinct business segment and develop, market and sell all three major classes of crop protection chemicals: insecticides, herbicides and fungicides. These products are used in agriculture to enhance crop yield and quality by controlling a broad spectrum of insects, weeds and disease, as well as in non-agricultural markets for pest control. This powerful combination of advanced technologies includes leading insect control products based on Rynaxypyr® and Cyazypyr® active ingredients; Authority®, Boral®, Centium®, Command® and Gamit® branded herbicides; Talstar® and Hero® branded insecticides; and flutriafol-based fungicides. The FMC portfolio also includes biologicals such as Quartzo® and Presence® bionematicides.

2019 Highlights

The following are the more significant developments in our businesses during the year ended December 31, 2019:

- Revenue of $4,609.8 million in 2019 increased $324.5 million or approximately 8 percent versus last year. A more detailed review of revenues is included under the section entitled “Results of Operations”. On a regional basis, sales in North America increased 3 percent, sales in Latin America increased by 19 percent, primarily from growth driven by higher volumes in Brazil and Argentina, sales in Europe, Middle East and Africa increased by 4 percent and sales in Asia increased 3 percent.
- Our gross margin, excluding transaction-related charges, of $2,083.6 million increased $134.2 million or approximately 7 percent versus last year. The increase in gross margin was primarily driven by higher volumes. Gross margin, excluding transaction-related charges, as a percent of revenue remained flat at approximately 45 percent in the current year versus 2018.
- Selling, general and administrative expenses increased slightly from $790.0 million to $792.9 million. Selling, general and administrative expenses, excluding transaction-related charges, of $715.1 million increased $12.0 million or approximately 2 percent. Transaction-related charges are presented in our Adjusted Earnings Non-GAAP financial measurement below under the section titled “Results of Operations”.
- Research and development expenses of $298.1 million increased $10.4 million or 4 percent. The increase was primarily due to continued investments in our global discovery and product development. We maintain our commitment to invest resources to discover new active ingredients and formulations that support resistance management and sustainable agriculture.
- Net income (loss) attributable to FMC stockholders of $477.4 million decreased $24.7 million or approximately 5 percent from $502.1 million in the prior year period. Adjusted after-tax earnings from continuing operations attributable to FMC stockholders of $803.7 million increased $91.1 million or approximately 13 percent primarily due to adjusted EBITDA growth. See the disclosure of our Adjusted Earnings Non-GAAP financial measurement under the section titled “Results of Operations”.

Other 2019 Highlights

On March 1, 2019, we completed the previously announced distribution of 123 million shares of common stock of Livent as a pro rata dividend on shares of FMC common stock outstanding at the close of business on the record date of February 25, 2019. Following the distribution, we have zero shares of Livent and zero exposure to lithium markets. We have recast all the data within this filing to present FMC Lithium as a discontinued operation retrospectively for all periods presented.

2020 Outlook

Our 2020 expectation for the overall global crop protection market growth is that it will be up low-single digits in U.S. dollars. We expect all regions to be up low-single digits, primarily driven by higher volumes, in part due to new product launches in 2020, and to a lesser extent higher pricing, slightly offset by negative foreign exchange impacts.

We expect 2020 revenue will be in the range of approximately $4.8 billion to $4.95 billion, up approximately 6 percent at the midpoint versus 2019. We also expect adjusted EBITDA[(1)] of $1.3 billion to $1.34 billion, which represents 8 percent growth at the midpoint versus 2019 results. 2020 adjusted earnings are expected to be in the range of $6.45 to $6.70 per diluted share[(1)], up 8 percent at the midpoint versus 2019, excluding any impact from potential share repurchases in 2020. For cash flow outlook, refer to the liquidity and capital resources section below.

(1) Although we provide forecasts for adjusted earnings per share and adjusted EBITDA (Non-GAAP financial measures), we are not able to forecast the most directly comparable measures calculated and presented in accordance with U.S. GAAP. Certain elements of the composition of the U.S. GAAP amounts are not predictable, making it impractical for us to forecast. Such elements include, but are not limited to, restructuring, acquisition charges, and discontinued operations. As a result, no U.S. GAAP outlook is provided.

Results of Operations — 2019, 2018 and 2017

Overview

The following charts provide a reconciliation of Adjusted EBITDA and Adjusted Earnings, both of which are Non-GAAP financial measures, from the most directly comparable GAAP measure. Adjusted EBITDA is provided to assist the readers of our financial statements with useful information regarding our operating results. Our operating results are presented based on how we assess operating performance and internally report financial information. For management purposes, we report operating performance based on earnings before interest, income taxes, depreciation and amortization, discontinued operations, and corporate special charges. Our Adjusted Earnings measure excludes corporate special charges, net of income taxes, discontinued operations attributable to FMC stockholders, net of income taxes, and certain Non-GAAP tax adjustments. These are excluded by us in the measure we use to evaluate business performance and determine certain performance-based compensation. These items are discussed in detail within the "Other Results of Operations" section that follows. In addition to providing useful information about our operating results to investors, we also believe that excluding the effect of corporate special charges, net of income taxes, and certain Non-GAAP tax adjustments from operating results and discontinued operations allows management and investors to compare more easily the financial performance of our underlying business from period to period. These measures should not be considered as substitutes for net income (loss) or other measures of performance or liquidity reported in accordance with U.S. GAAP.

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Revenue	$ 4,609.8	$ 4,285.3	$ 2,531.2
Costs and Expenses			
Costs of sales and services	2,526.2	2,405.5	1,579.4
Gross Margin	$ 2,083.6	$ 1,879.8	$ 951.8
Selling, general and administrative expenses	792.9	790.0	581.7
Research and development expenses	298.1	287.7	138.4
Restructuring and other charges (income)	171.0	61.2	73.2
Total costs and expenses	$ 3,788.2	$ 3,544.4	$ 2,372.7
Income from continuing operations before equity in (earnings) loss of affiliates, non-operating pension and postretirement charges (income), interest income, interest expense, and provision for income taxes [1]	$ 821.6	$ 740.9	$ 158.5
Equity in (earnings) loss of affiliates	—	(0.1)	(0.1)
Non-operating pension and postretirement charges (income)	8.1	(0.5)	(16.3)
Interest income	(1.9)	(1.4)	(0.9)
Interest expense	160.4	134.5	80.0
Income from continuing operations before income taxes	$ 655.0	$ 608.4	$ 95.8
Provision for income taxes	111.5	70.8	228.9
Income (loss) from continuing operations	$ 543.5	$ 537.6	$ (133.1)
Discontinued operations, net of income taxes	(63.3)	(26.1)	671.5
Net income (loss) (GAAP)	$ 480.2	$ 511.5	$ 538.4
Adjustments to arrive at Adjusted EBITDA:			
Corporate special charges (income):			
Restructuring and other charges (income) [3]	$ 171.0	$ 61.2	$ 73.2
Non-operating pension and postretirement charges (income) [4]	8.1	(0.5)	(16.3)
Transaction-related charges [5]	77.8	156.5	150.4
Discontinued operations, net of income taxes	63.3	26.1	(671.5)
Interest expense, net	158.5	133.1	79.1
Depreciation and amortization	150.1	150.2	97.8
Provision (benefit) for income taxes	111.5	70.8	228.9
Adjusted EBITDA (Non-GAAP) [2]	**$ 1,220.5**	**$ 1,108.9**	**$ 480.0**

(1) Referred to as operating profit.
(2) Adjusted EBITDA is defined as operating profit excluding corporate special charges (income) and depreciation and amortization expense.
(3) See Note 9 to the consolidated financial statements included within this Form 10-K for details of restructuring and other charges (income).
(4) Our non-operating pension and postretirement charges (income) are defined as those costs (benefits) related to interest, expected return on plan assets, amortized actuarial gains and losses and the impacts of any plan curtailments or settlements. These are excluded from our operating results and are primarily related to changes in pension plan assets and liabilities which are tied to financial market performance and we consider these costs to be outside our operational performance. We continue to include the service cost and amortization of prior service cost in our operating results noted above. These elements reflect the current year operating costs to our businesses for the employment benefits provided to active employees.
(5) Charges relate to the expensing of the inventory fair value step-up resulting from the application of purchase accounting, transaction costs, costs for transitional employees, other acquired employee related costs, integration related legal and professional third-party fees. Amounts represent the following:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
DuPont Crop Protection Business Acquisition			
Legal and professional fees (1)	$ 77.8	$ 86.9	$ 130.2
Inventory fair value amortization (2)	—	69.6	20.2
Total transaction-related charges	**$ 77.8**	**$ 156.5**	**$ 150.4**

(1) Represents transaction costs, costs for transitional employees, other acquired employees related costs, and transactional-related costs such as legal and professional third-party fees. These charges are recorded as a component of “Selling, general and administrative expense" on the consolidated statements of income (loss).
(2) These charges are included in “Costs of sales and services” on the consolidated statements of income (loss).

ADJUSTED EARNINGS RECONCILIATION

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Net income (loss) attributable to FMC stockholders (GAAP)	$ 477.4	$ 502.1	$ 535.8
Corporate special charges (income), pre-tax (1)	256.9	217.2	207.3
Income tax expense (benefit) on Corporate special charges (income) (2)	(49.2)	(52.8)	(58.0)
Corporate special charges (income), net of income taxes	$ 207.7	$ 164.4	$ 149.3
Adjustment for noncontrolling interest, net of tax on Corporate special charges (income)	—	(0.5)	—
Discontinued operations attributable to FMC Stockholders, net of income taxes	63.3	29.3	(671.5)
Non-GAAP tax adjustments (3)	55.3	17.3	258.9
Adjusted after-tax earnings from continuing operations attributable to FMC stockholders (Non-GAAP)	**$ 803.7**	**$ 712.6**	**$ 272.5**

(1) Represents restructuring and other charges (income), non-operating pension and postretirement charges (income) and transaction-related charges.
(2) The income tax expense (benefit) on Corporate special charges (income) is determined using the applicable rates in the taxing jurisdictions in which the Corporate special charge or income occurred and includes both current and deferred income tax expense (benefit) based on the nature of the non-GAAP performance measure.
(3) We exclude the GAAP tax provision, including discrete items, from the Non-GAAP measure of income, and instead include a Non-GAAP tax provision based upon the annual Non-GAAP effective tax rate. The GAAP tax provision includes certain discrete tax items including, but not limited to: income tax expenses or benefits that are not related to current year ongoing business operations; tax adjustments associated with fluctuations in foreign currency remeasurement of certain foreign operations; certain changes in estimates of tax matters related to prior fiscal years; certain changes in the realizability of deferred tax assets; and changes in tax law which includes the impact of the Act enacted on December 22, 2017. Management believes excluding these discrete tax items assists investors and securities analysts in understanding the tax provision and the effective tax rate related to ongoing operations thereby providing investors with useful supplemental information about FMC's operational performance.

Results of Operations

In the discussion below, all comparisons are between the periods unless otherwise noted.

Revenue

2019 vs. 2018

Revenue of $4,609.8 increased $324.5 million, or approximately 8 percent versus the prior year period. The increase was driven by higher volumes, primarily in Latin America, and pricing which contributed approximately 8 percent and 3 percent, respectively, slightly offset by unfavorable foreign currency fluctuations of approximately 3 percent.

2018 vs. 2017

Revenue of $4,285.3 million increased $1,754.1 million, or approximately 69 percent versus the prior year period. The increase was primarily due to the revenue from the DuPont Crop Protection Acquisition, which was completed on November 1, 2017, and contributed approximately $1,742 million to the increase.

Refer to the *Pro Forma Financial Results with the DuPont Crop Protection Business* section below for further discussion.

Pro Forma Financial Results with the DuPont Crop Protection Business

We believe that reviewing our operating results by combining actual and pro forma results is more useful in identifying trends in, or reaching conclusions regarding, the overall operating performance of our business. Our pro forma information includes adjustments as if the DuPont Crop Protection Business Acquisition had occurred on January 1, 2017. Our pro forma data is also adjusted for the effects of acquisition accounting but does not include adjustments for costs related to integration activities, cost savings or synergies that might be achieved by the combined businesses. Pro forma amounts presented are not necessarily indicative of what our results would have been had we operated the DuPont Crop Protection Business since January 1, 2017, nor our future results.

Pro Forma Financial Results

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Revenue			
Revenue, as reported (1)	$ 4,609.8	$ 4,285.3	$ 2,531.2
Revenue, DuPont Crop Protection Business, pro forma (2)	—	—	1,325.4
Pro Forma Combined, Revenue (3) (4)	**$ 4,609.8**	**$ 4,285.3**	**$ 3,856.6**

(1) As reported amounts are the results of operations of our business, including the results of the DuPont Crop Protection Business Acquisition from November 1, 2017 onward.

(2) DuPont Crop Protection Business pro forma amounts include the historical results of the DuPont Crop Protection Business, prior to November 1, 2017. These amounts also include adjustments as if the DuPont Crop Protection Business Acquisition had occurred on January 1, 2017, including the effects of acquisition accounting. The pro forma amounts do not include adjustments for expenses related to integration activities, cost savings or synergies that may have been or may be achieved by the combined segment.

(3) The pro forma combined amounts are not necessarily indicative of what the results would have been had we acquired the DuPont Crop Protection Business on January 1, 2017 or indicative of future results.

(4) For the years ended December 31, 2019 and 2018, pro forma results and actual results are the same.

Pro Forma Combined Revenue by Region (1) (2)

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
North America	$ 1,121.1	$ 1,090.8	$ 941.3
Latin America	1,441.7	1,210.1	1,021.1
Europe, Middle East and Africa (EMEA)	1,001.8	966.0	920.8
Asia	1,045.2	1,018.4	973.4
Total	**$ 4,609.8**	**$ 4,285.3**	**$ 3,856.6**

(1) For the years ended December 31, 2019 and 2018, pro forma results and actual results are the same.
(2) Pro forma combined revenue by region for the year ended December 31, 2017 includes the results of the DuPont Crop Protection Business of $1,325.4 million, assuming the acquisition occurred on January 1, 2017. These amounts include adjustments as if the DuPont Crop Protection Business Acquisition had occurred on January 1, 2017. The pro forma combined revenue by region amounts are not necessarily indicative of what the results would have been had we acquired the DuPont Crop Protection Business on January 1, 2017 or indicative of future results.

2019 vs. 2018

North America: Revenue increased approximately 3 percent in the year ended December 31, 2019, primarily driven by volume growth and strength of Rynaxypyr® and Cyazypyr® insect control on specialty crops, the launch of Lucento® fungicide, and strong herbicide sales in Canada.

Latin America: Revenue increased approximately 19 percent, or approximately 23 percent excluding foreign currency headwinds, for the year ended December 31, 2019 compared to the prior year period due primarily to strong demand in Brazil for insecticides on cotton, herbicides on sugarcane, and insecticides in soybean applications. Strong growth in Argentina, due to improved market access and strength of herbicides in soybean applications also contributed to the significant growth in the region.

EMEA: Revenue increased approximately 4 percent versus the prior year period, or approximately 10 percent excluding foreign currency headwinds, primarily due to the successful launch of Battle® Delta herbicides and Cyazypyr® insect control registrations across the region. Favorable weather, demand for our diamide products, and higher pricing throughout the region also contributed to the increase. These increases were partially offset by unfavorable foreign currency impacts.

Asia: Revenue increased approximately 3 percent versus the prior year period, or approximately 8 percent excluding foreign currency headwinds, primarily driven by continued strong growth in India and new products across the region. Partially offsetting the increases were adverse weather conditions in Australia and challenged rice markets in China.

In late March 2019, there was an explosion within an industrial park in China which impacted one plant operated by one of our contract manufacturing tollers. The local government has temporarily shut down the entire park to investigate the cause of the explosion. We received material from the clean out of the equipment during the fourth quarter of 2019 and we are working closely with the supplier to determine the exact re-start date of the operation. Our global manufacturing network provides significant supply chain flexibility. Due to the strength of our partnerships and our alternate sourcing options, we believe we can continue to secure supply of the active ingredients normally manufactured at this location as needed.

Pro Forma Combined Results - 2018 vs. 2017

Pro forma combined revenue of $4,285.3 million increased by approximately 11 percent versus the prior year period.

North America: Increase in the year ended December 31, 2018 was due to very strong demand for the acquired insecticides, growth in U.S. soy acreage in 2018, and strong demand across niche crops. These were partially offset by unfavorable impacts from the delayed start to the Spring season.

Latin America: Increase in the year ended December 31, 2018 was due to strong growth for the acquired insecticides in soybean and other crops, strong acreage growth in cotton and higher prices in Brazil as well as higher wheat acreage in Argentina. Partially offsetting these increases were unfavorable foreign currency impacts and severe drought in Argentina.

EMEA: Increase in the year ended December 31, 2018 was primarily due to strong growth of the acquired insecticides and herbicides, the move to direct market access in France, as well as sales synergies of legacy FMC products. These were partially offset by a forced divestiture (anti-trust remedy), unfavorable weather conditions that led to a shorter growing season and lower demand in Northern and Central Europe.

Asia: Increase in the year ended December 31, 2018 was due to strong performance in rice and soy insecticides in India and growth in rice herbicides in China which was partially offset by a forced divestiture in India (anti-trust remedy), the rationalization of the legacy portfolio in India and extreme drought conditions in Australia.

Gross margin

2019 vs. 2018

Gross margin of $2,083.6 million increased $203.8 million, or approximately 11 percent versus the prior year period. Gross margin, excluding transaction-related charges, also increased versus the prior year period by $134.2 million. The increase was primarily due to higher revenues driven by increased volume and pricing, partially offset by higher costs, primarily raw material costs.

Gross margin percent of approximately 45 percent slightly increased from approximately 44 percent in the prior year period. The increase from higher pricing was nearly offset by higher costs, primarily raw material costs. Gross margin percent, excluding transaction-related charges, of approximately 45 percent remained relatively flat compared to the prior year period.

2018 vs. 2017

Gross margin of $1,879.8 million increased $928.0 million, or approximately 97 percent versus the prior year period. Gross margin, excluding transaction-related charges, increased versus the prior year period by $977.4 million. Gross margin percent of approximately 44 percent increased from approximately 38 percent in the prior year period. Gross margin percent, excluding transaction-related charges, of approximately 45 percent increased compared to approximately 38 percent in the prior year period. The increase was primarily driven by higher margin products as well as a full year of earnings from the acquired DuPont Crop Protection Business.

Selling, general, and administrative expenses

2019 vs. 2018

Selling, general and administrative expenses of $792.9 million slightly increased by $2.9 million versus the prior year period. Selling, general and administrative expenses, excluding transaction-related charges, increased $12.0 million, or approximately 2 percent, versus the prior year period.

2018 vs. 2017

Selling, general and administrative expenses of $790.0 million increased $208.3 million, or approximately 36 percent versus the prior year period. Selling, general and administrative expenses, excluding transaction-related charges, increased $251.6 million, or approximately 56 percent, versus the prior year period. The increase was primarily driven by a full year of operations of the acquired DuPont Crop Protection Business.

Research and development expenses

2019 vs. 2018

Research and development expenses of $298.1 million increased $10.4 million, or approximately 4 percent versus the prior year period primarily due to continued investments in our global discovery and product development.

2018 vs. 2017

Research and development expenses of $287.7 million increased $149.3 million, or approximately 108 percent versus the prior year period. The increase was primarily due to investments in discovery and product development from the acquired state of the art facilities from the DuPont Crop Protection Business Acquisition.

Adjusted EBITDA (Non-GAAP)

Pro Forma Financial Results

(in Millions)	Year Ended December 31, 2019	2018	2017
Adjusted EBITDA (Non-GAAP)			
Adjusted EBITDA, as reported (1)	$ 1,220.5	$ 1,108.9	$ 480.0
Adjusted EBITDA, DuPont Crop Protection Business, pro forma (2)	—	—	486.5
Pro Forma Combined, Adjusted EBITDA (Non-GAAP) (3) (4)	**$ 1,220.5**	**$ 1,108.9**	**$ 966.5**

(1) As reported amounts are the results of operations of our business, including the results of the DuPont Crop Protection Business Acquisition from November 1, 2017 onward.

(2) DuPont Crop Protection Business pro forma amounts include the historical results of the DuPont Crop Protection Business, prior to November 1, 2017. These amounts also include adjustments as if the DuPont Crop Protection Business Acquisition had occurred on January 1, 2017, including the effects of acquisition accounting. The pro forma amounts do not include adjustments for expenses related to integration activities, cost savings or synergies that may have been or may be achieved by the combined segment.

(3) The pro forma combined amounts are not necessarily indicative of what the results would have been had we acquired the DuPont Crop Protection Business on January 1, 2017 or indicative of future results.

(4) For the years ended December 31, 2019 and 2018, pro forma results and actual results are the same.

2019 vs. 2018

Adjusted EBITDA of $1,220.5 million increased $111.6 million, or approximately 10 percent versus the prior year period. The increase was due to the strong demand which led to higher volumes and higher pricing as discussed above which contributed approximately 18 percent and 12 percent to the increase, respectively. The price increases were primarily seen in Latin America. These factors more than offset the higher costs, primarily driven by higher raw material costs, and unfavorable foreign currency fluctuations which impacted the change in Adjusted EBITDA by approximately 15 percent and 5 percent, respectively.

Pro Forma Combined Results - 2018 vs. 2017

2018 pro forma combined Adjusted EBITDA of $1,108.9 million increased approximately 15 percent compared to 2017. The increase was primarily driven by revenue growth discussed above as our sales organization leveraged valuable cross-selling opportunities due to minimal customer overlap with DuPont. Additionally, we reduced expected operating costs for the acquired DuPont Crop Protection Business through accelerated functional integration, leveraging our back office infrastructure and reducing manufacturing costs at the acquired plants. These were partially offset by higher raw material costs which have had a negative impact on results year over year. This impacted the chemical industry broadly as the Chinese government has been shutting down industrial parks as part of their environmental program. We have been able to mitigate and manage the impact on our ability to supply our customer due to our diversified supply chain network.

Other Results of Operations

Depreciation and amortization

2019 vs. 2018

Depreciation and amortization of $150.1 million remained relatively flat as compared to 2018 of $150.2 million.

2018 vs. 2017

Depreciation and amortization of $150.2 million increased $52.4 million as compared to 2017 of $97.8 million. The increase was primarily due to the increase in intangible assets and property, plant and equipment acquired as a result of the DuPont Crop Protection Business.

Interest expense, net

2019 vs. 2018

Interest expense, net of $158.5 million increased by $25.4 million, or approximately 19 percent, compared to $133.1 million in 2018. The increase was driven by the issuance of the Senior Notes discussed further below, which increased interest expense by approximately $7 million, and higher average foreign debt balances throughout the year, which increased interest expense by approximately $17 million.

2018 vs. 2017

Interest expense, net of $133.1 million increased by approximately 68 percent compared to $79.1 million in 2017. The increase was driven by the addition of the 2017 Term Loan Facility, used to fund the 2017 acquisition, which increased interest expense by approximately $30 million, and higher interest rates which increased interest expense by approximately $6 million. The remaining increase of approximately $17 million was due to zero interest allocated to discontinued operations in 2018 as compared to 2017, due to the divestment of the FMC Health and Nutrition business to DuPont in 2017. Interest was previously allocated in accordance with relevant discontinued operations accounting guidance.

Corporate special charges (income)

Restructuring and other charges (income)

Our restructuring and other charges (income) are comprised of restructuring, assets disposals and other charges (income) as described below:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Restructuring charges	$ 62.2	$ 124.1	$ 8.5
Other charges (income), net	108.8	(62.9)	64.7
Total restructuring and other charges (income) (1)	**$ 171.0**	**$ 61.2**	**$ 73.2**

(1) See Note 9 to the consolidated financial statements included in this Form 10-K for more information.

2019

Restructuring charges in 2019 primarily consisted of $34.1 million of charges related to our decision to exit sales of all carbofuran formulations globally and $26.4 million of charges associated with the integration of the DuPont Crop Protection Business. These charges included severance, accelerated depreciation on certain fixed assets, and other costs (benefits). There were other miscellaneous restructuring charges $1.7 million. We expect integration-related activity to end in 2020.

Other charges (income), net in 2019 primarily consists of charges of environmental sites. During the fourth quarter of 2019, we recorded a charge of $72.8 million a result of an unfavorable court ruling we received in relation to the Pocatello Tribal Litigation at one of our environmental sites. See Note 12 for further information regarding this matter.

2018

Restructuring charges in 2018 were primarily associated with restructuring charges associated with the integration of the DuPont Crop Protection Business. These charges primarily consisted of approximately $59 million of charges related to the change in our market access model in India and approximately $28 million of charges due to our decision to exit the Ewing R&D center. Refer to Note 9 for more information. Other restructuring charges as we continue to integrate the acquired DuPont Crop Protection Business totaled approximately $22 million.

Other charges (income), net in 2018 primarily consists of income from the gain on sales of $87.2 million from the divestment of a portion of FMC's European herbicide portfolio to Nufarm Limited and certain products of our India portfolio to Crystal Crop Protection Limited. These divestitures satisfied FMC's commitment to the European Commission and the Competition Commission of India, respectively, for regulatory requirements in order to complete the DuPont Crop Protection Acquisition. Additionally, there were environmental related charges of $21.7 million for remediation activities and $2.6 million of other charges.

2017

Restructuring charges in 2017 includes impairment charges of intangible assets of $2.2 million and asset write-downs of approximately $5.5 million. Amounts also include miscellaneous restructuring charges of $0.8 million.

Other charges (income), net in 2017 consisted of a $42.1 million impairment on certain indefinite-lived intangible assets from the acquired DuPont Crop Protection Business Acquisition as a result of a triggering event due to the Tax Cuts and Jobs Act ("the Act"). Other charges (income) also includes $16.2 million for environmental sites. Additionally, we incurred exit costs of $4.8 million resulting from the termination and de-consolidation of our interest in a variable interest entity that was previously consolidated. We had other miscellaneous charges, net of approximately $1.6 million.

Non-operating pension and postretirement (charges) income

2019 vs. 2018

The charge for 2019 was $8.1 million compared to income of $0.5 million in 2018. The change was due to lower expected return on plan assets of approximately $10 million resulting from the full shift to a fixed income investment portfolio for the full year of 2019 versus the shift to a primarily fixed income investment portfolio for only a portion of the year in 2018.

2018 vs. 2017

The income for 2018 was $0.5 million compared to $16.3 million in 2017. The decrease was primarily due to lower expected return on plan assets due to the partial shift to a primarily fixed income investment portfolio of approximately $16 million versus 2017. See Note 15 for more information.

Transaction-related charges

A detailed description of the transaction related charges is included in Note 5 to the consolidated financial statements included within this Form 10-K.

Provision for income taxes

A significant amount of our earnings is generated by our foreign subsidiaries (e.g., Singapore, Hong Kong, and Switzerland), which tax earnings at lower statutory rates than the United States federal statutory rate. Our future effective tax rates may be materially impacted by numerous items including: a future change in the composition of earnings from foreign and domestic tax jurisdictions, as earnings in foreign jurisdictions are typically taxed at more favorable statutory rates than the United States federal statutory rate; accounting for uncertain tax positions; business combinations; expiration of statute of limitations or settlement of tax audits; changes in valuation allowance; changes in tax law; and the potential decision to repatriate certain future foreign earnings on which United States or foreign withholding taxes have not been previously accrued.

Provision for income taxes for 2019 was expense of $111.5 million resulting in an effective tax rate of 17.0 percent. Provision for income taxes for 2018 was expense of $70.8 million resulting in an effective tax rate of 11.6 percent. Provision for income taxes for 2017 was expense of $228.9 million resulting in an effective tax rate of 238.9 percent primarily attributable to the $303.6 million of provisional tax expense associated with the Act. Note 13 to the consolidated financial statements included in this Form 10-K includes more details on the drivers of the GAAP effective rate and year-over-year changes. We believe showing the reconciliation below of our GAAP to Non-GAAP effective tax rate provides investors with useful supplemental information about our tax rate on the core underlying business.

	Year Ended December 31,								
	2019			2018			2017		
(in Millions)	Income (Expense)	Tax Provision (Benefit)	Effective Tax Rate	Income (Expense)	Tax Provision (Benefit)	Effective Tax Rate	Income (Expense)	Tax Provision (Benefit)	Effective Tax Rate
GAAP - Continuing operations	$ 655.0	$ 111.5	17.0 %	$ 608.4	$ 70.8	11.6 %	$ 95.8	$ 228.9	238.9 %
Corporate special charges	256.9	49.2		217.2	52.8		207.3	58.0	
Tax adjustments [(1)]		(55.3)			(17.3)			(258.9)	
	$ 911.9	$ 105.4	**11.6 %**	$ 825.6	$ 106.3	**12.9 %**	$ 303.1	$ 28.0	**9.2 %**

____

(1) Tax adjustments in 2019 are materially attributable to the effects of tax law changes and the realizability of deferred tax assets in certain jurisdictions. Tax adjustments in 2018 are materially attributable to the effects of the Act and primarily relate to the one-time transition tax, the decrease in the U.S. federal tax rate, and the realizability of certain U.S. state deferred tax assets. Tax adjustments in 2017 were primarily associated with the provisional income tax expense recorded as a result of the enactment of the Act in December 2017. See Note 13 to the consolidated financial statements included within this Form 10-K for additional discussion.

The primary drivers for the fluctuations in the effective tax rate for each period are provided in the table above. Excluding the items in the table above, the changes in the effective tax rate were primarily due to the impact of geographic mix of earnings among our global subsidiaries. See Note 13 to the consolidated financial statements for additional details related to the provisions for income taxes on continuing operations, as well as items that significantly impact our effective tax rate.

Discontinued operations, net of income taxes

Our discontinued operations, in periods up to its disposition, represent our discontinued FMC Lithium and FMC Health and Nutrition business results as well as adjustments to retained liabilities from other previously discontinued operations. The primary liabilities retained include environmental liabilities, other postretirement benefit liabilities, self-insurance, long-term obligations related to legal proceedings and historical restructuring activities. See Note 11 to the consolidated financial statements for additional details on our discontinued operations.

2019 vs. 2018

Discontinued operations, net of income taxes represented a loss of $63.3 million in 2019 compared to a loss of $26.1 million in 2018. The current year included the net loss from our discontinued FMC Lithium segment, primarily due to separation-related costs, up to its separation date on March 1, 2019, compared to income for the full year in 2018. Offsetting the loss was the gain on sale from the sale of the first of two parcels of land of our discontinued site in Newark, California in the current year. During 2018, we recorded a charge of approximately $106 million as a result of active negotiations for a settlement agreement primarily to address discontinued operations at our Middleport, New York plant which was the subject of an Administrative Order on Consent entered into with the EPA and NYSDEC in 1991. The charge consisted of incremental estimated costs of remediation for certain offsite operable units associated with historic site operations as we engaged in settlement discussions with NYSDEC to resolve the path forward regarding remediation. Refer to Note 12 for further details.

2018 vs. 2017

Discontinued operations, net of income taxes represented a loss of $26.1 million in 2018 compared to income of $671.5 million in 2017. The decrease was primarily driven by the divestiture of FMC Health and Nutrition to DuPont in the fourth quarter of 2017 which resulted in an after-tax gain of approximately $727 million, which did not recur in 2018. Discontinued operations, net of income taxes, in 2017 also includes the impairment charge of approximately $148 million, net of tax, to reflect the write down of our Omega-3 business to its sales price. During 2018, we recorded a charge of approximately $106 million related to our discontinued environmental site at our Middleport, New York. Refer to Note 12 for further details.

Net income (loss) attributable to FMC stockholders

2019 vs. 2018

Net income attributable to FMC stockholders decreased to $477.4 million from $502.1 million. The decrease was primarily due to higher costs and expenses, particularly restructuring and other charges associated with environmental remediation at our decommissioned plant near Pocatello, higher tax provisions, and higher net interest expense. This was partially offset by higher adjusted EBITDA from higher volumes and pricing.

2018 vs. 2017

Net income attributable to FMC stockholders decreased to $502.1 million from $535.8 million. The decrease was primarily due to the gain on sale recorded in discontinued operations, net of income taxes in 2017 as well as charges related to the Middleport environmental settlement as discussed above. These were partially offset by higher income from continuing operations driven by a full year of results from the DuPont Crop Protection Business, which was completed on November 1, 2017.

Liquidity and Capital Resources

Cash and cash equivalents at December 31, 2019 and 2018, were $339.1 million and $134.4 million, respectively. Of the cash and cash equivalents balance at December 31, 2019, $181.5 million was held by our foreign subsidiaries. The cash held by foreign subsidiaries for permanent reinvestment is generally used to finance the subsidiaries' operating activities and future foreign investments. We have not provided income taxes for other outside basis differences inherent in our investments in subsidiaries because the investments and related unremitted earnings are essentially permanent in duration or we have concluded that no additional tax liability will arise upon disposal or remittance. See Note 13 to the consolidated financial statements included within this Form 10-K for more information.

At December 31, 2019, we had total debt of $3,258.8 million as compared to $2,692.7 million at December 31, 2018. Total debt included $3,031.1 million and $2,145.0 million of long-term debt (excluding current portions of $82.8 million and $386.0 million) at December 31, 2019 and 2018, respectively. As of December 31, 2019, we were in compliance with all of our debt covenants. See Note 14 in the consolidated financial statements included in this Form 10-K for further details. We remain committed to solid investment grade credit metrics, and expect full-year average leverage to be in line with this commitment in 2020.

The increase in long-term debt was primarily due to the issuance of Senior Notes discussed further below. Partially offsetting the increase were partial paydowns on the 2017 Term Loan Facility, which is scheduled to mature on November 1, 2022. The borrowings under the 2017 Term Loan Facility will bear interest at a floating rate, which will be a base rate or a Eurocurrency rate equal to the London interbank offered rate for the relevant interest period, plus in each case an applicable margin, as determined in accordance with the provisions of the 2017 Term Loan Facility.

Our short-term debt consists of foreign borrowings and our commercial paper program. Foreign borrowings increased from $106.5 million at December 31, 2018 to $144.9 million at December 31, 2019 while outstanding commercial paper decreased entirely from $55.2 million at December 31, 2018. We provide parent-company guarantees to lending institutions providing credit to our foreign subsidiaries.

Our commercial paper program allows us to borrow at rates generally more favorable than those available under our credit facility. At December 31, 2019, we had no borrowings outstanding under the commercial paper program.

Senior Notes

On September 20, 2019, we issued $500 million aggregate principal amount of 3.200% Senior Notes due 2026, $500 million aggregate principal amount 3.450% Senior Notes due 2029, and $500 million aggregate principal amount 4.500% Senior Notes due 2049. A portion of the net proceeds from the offering were used for paydowns of outstanding commercial paper, 2017 Term Loan Facility balances, and general corporate purposes. We used the remaining net proceeds of approximately $300 million to redeem all of our Senior notes that matured in the fourth quarter of 2019.

Fees incurred to secure the senior notes have been deferred and will be amortized over the terms of the arrangement.

See Note 19 for details on the interest rate swap settlement which will also be amortized over the terms of the arrangement.

Revolving Credit Facility

On May 17, 2019, we entered into an amended and restated credit agreement (the "Revolving Credit Agreement"). The unsecured Revolving Credit Agreement provides for a $1.5 billion revolving credit facility, $400 million of which is available for the issuance of letters of credit for the account of the Revolving Borrowers and $50 million of which is available for swing loans to certain of the Revolving Borrowers, with an option, subject to certain conditions and limitations, to increase the aggregate amount of the revolving credit commitments to $2.25 billion (the "Revolving Credit Facility"). The current termination date of the Revolving Credit Facility is May 17, 2024.

Revolving loans under the Revolving Credit Agreement will bear interest at a floating rate, which will be a base rate or a Eurocurrency rate equal to the London interbank offered rate for the relevant interest period, plus, in each case, an applicable margin, as determined in accordance with the provisions of the Revolving Credit Agreement. The base rate will be the highest of: the rate of interest announced publicly by Citibank, N.A. in New York, New York from time to time as its "base rate"; the federal funds effective rate plus 1/2 of 1%; and the Eurocurrency rate for a one-month period plus 1%. The Company is required to pay a facility fee on the average daily amount (whether used or unused) of each Revolving Credit Lender's revolving credit commitment from the effective date for such Revolving Credit Lender until the termination date of such Revolving Credit Lender at a rate per annum equal to an applicable percentage in effect from time to time for the facility fee, as determined in accordance with the provisions of the Revolving Credit Agreement. The initial facility fee is 0.125% per annum. The applicable margin and the facility fee are subject to adjustment as provided in the Revolving Credit Agreement.

The Revolving Credit Agreement contains customary financial and other covenants, including a maximum leverage ratio and minimum interest coverage ratio.

Fees incurred to secure the Revolving Credit Facility have been deferred and will be amortized over the term of the arrangement.

Statement of Cash Flows

Cash provided (required) by operating activities was $555.6 million, $362.7 million and $232.0 million for 2019, 2018 and 2017, respectively.

The table below presents the components of net cash provided (required) by operating activities. For comparability, the prior period amounts for "Change in all other operating assets and liabilities" have been recast to reflect the current period presentation.

	Year ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Income (loss) from continuing operations before equity in (earnings) loss of affiliates, non-operating pension expense and postretirement charges, interest expense, net and income taxes	$ 821.6	$ 740.9	$ 158.5
Restructuring and other charges (income), transaction-related charges and depreciation and amortization	398.9	367.9	321.4
Operating income before depreciation and amortization (Non-GAAP)	**$ 1,220.5**	**$ 1,108.8**	**$ 479.9**
Change in trade receivables, net (1)	(123.5)	(281.5)	(191.1)
Change in guarantees of vendor financing	8.6	15.4	(54.7)
Change in advance payments from customers (2)	34.1	80.2	141.1
Change in accrued customer rebates (3)	(85.8)	104.1	16.9
Change in inventories (4)	6.4	(200.7)	(102.8)
Change in accounts payable (5)	103.0	166.7	304.3
Change in all other operating assets and liabilities (6)	(208.5)	(187.5)	(95.4)
Operating cash flows (Non-GAAP)	**$ 954.8**	**$ 805.5**	**$ 498.2**
Restructuring and other spending (7)	(18.6)	(25.2)	(7.3)
Environmental spending, continuing, net of recoveries (8)	(18.3)	(20.3)	(20.2)
Pension and other postretirement benefit contributions (9)	(13.4)	(37.5)	(55.3)
Net interest payments (10)	(140.9)	(133.4)	(82.2)
Tax payments, net of refunds (11)	(130.9)	(125.3)	(22.3)
Transaction and integration costs (12)	(77.1)	(101.1)	(78.9)
Cash provided (required) by operating activities of continuing operations	**$ 555.6**	**$ 362.7**	**$ 232.0**

(1) The change in trade receivables in all periods was primarily driven by timing of collections, largely due to seasonality. Additionally, the change in 2018 was related to receivable build from the acquired DuPont Crop Protection Business as we did not acquire any receivables as part of the transaction. Collection timing is more pronounced in certain countries such as Brazil where there may be terms significantly longer than the rest of our business. Additionally, timing of collection is impacted as amounts for all periods include carry-over balances remaining to be collected in Latin America, where collection periods are measured in months rather than weeks. During 2019, we collected approximately $1,070 million of receivables in Brazil.

(2) Advance payments are typically received in the fourth quarter of each year, primarily in our North America operations as revenue associated with advance payments is recognized, generally in the first half of each year following the seasonality of that business, as shipments are made and title, ownership and risk of loss pass to the customer.

(3) These rebates are primarily associated with North America and to a lesser extent Brazil and in North America are generally settled in the fourth quarter of each year given the end of that region's crop cycle. The changes year over year are primarily associated with the mix in sales eligible for rebates and incentives and timing of rebate payments. Additionally, the change in 2018 was related to the build in rebates as we did not acquire the rebates of the DuPont Crop Protection Business as part of the transaction.

(4) Changes in inventory are a result of inventory levels being adjusted to take into consideration the change in market conditions. The increase in the change in 2018 was also driven by recovering inventory levels due to a faster return to full production from our China toll manufacturing partners.

(5) The change in cash flows related to accounts payable is primarily due to timing of payments made to suppliers and vendors. Timing in 2019 was partially impacted during portions of 2019 from global supply chain issues, primarily in China, which required us to obtain raw materials on payment terms shorter than normal. The change in accounts payable in both 2018 and 2017 was primarily impacted by the payable build from the acquired DuPont Crop Protection Business as we did not acquire any payables as part of the transactions.

(6) Changes in all periods presented primarily represent timing of payments associated with all other operating assets and liabilities. Additionally, the 2019 and 2018 period includes the effects of the unfavorable contracts amortization of approximately $116 million and $103 million, respectively.
(7) See Note 9 to the consolidated financial statements included in this Form 10-K for further details.
(8) Included in our results for each of the years presented are environmental charges for environmental remediation of $108.7 million, $21.7 million and $16.2 million, respectively. The amounts in 2019 will be spent in future years. The amounts represent environmental remediation spending which were recorded against pre-existing reserves, net of recoveries. Environmental obligations for continuing operations primarily represent obligations at shut down or abandoned facilities within businesses that do not meet the criteria for presentation as discontinued operations.
(9) Amounts include voluntary contributions to our U.S. qualified defined benefit plan of $7.0 million, $30.0 million and $44.0 million, respectively. These amounts are in excess of the minimum requirements. Our contributions in excess of minimums are done with the objective of avoiding variable rate Pension Benefit Guaranty Corporation premiums as well as potentially reducing future funding volatility.
(10) The increase in interest payments in 2019 was primarily due to higher foreign borrowings and the issuance of the Senior Notes during the year. The increase in 2018 was primarily due to higher foreign debt balances, the addition of the 2017 Term Loan Facility, and increases in interest rates.
(11) Tax payments in 2019 primarily represent the payments of tax attributable to the Nufarm Limited sale, transition tax, and tax payments related to the acquired DuPont Crop Protection Business. Tax payments in 2018 primarily represent the payments of tax attributable to the FMC Health and Nutrition segment disposition, transition tax and full year tax payments related to the acquired DuPont Crop Protection Business.
(12) Represents payments for legal and professional fees associated with the DuPont Crop Protection Business Acquisition in addition to costs related to integrating the DuPont Crop Protection Business. We expect these payments to cease by the end of 2020. See Note 5 to the consolidated financial statements for more information.

Cash provided (required) by operating activities of discontinued operations was $(67.1) million, $5.7 million and $103.5 million for 2019, 2018 and 2017, respectively.

Cash required by operating activities of discontinued operations is directly related to environmental, other postretirement benefit liabilities, self-insurance, long-term obligations related to legal proceedings and historical restructuring activities.

Amounts in all periods also include the operating activities of our discontinued FMC Lithium segment, which was separated on March 1, 2019. Amounts in 2017 include the operating activities of our discontinued FMC Health and Nutrition segment and were partially offset by divestiture costs associated with its sale, which was completed on November 1, 2017.

Cash provided (required) by investing activities of continuing operations was $(195.9) million, $(37.5) million and $(1,288.5) million for 2019, 2018 and 2017, respectively.

Cash required in 2019 is primarily due to capital expenditures and spending related to our contract manufacturing arrangements, as well as continued spending associated with the implementation of a new SAP system.

Cash required in 2018 is primarily due to higher capital expenditure spending as well as incremental capitalizable corporate level spending associated with the implementation of a new SAP system, partially offset by the sale of product portfolios of approximately $88 million that were required to complete the DuPont Crop Protection Business Acquisition.

The cash required by investing activities in 2017 was primarily due to the acquisition of the DuPont Crop Protection Business.

Cash provided (required) by investing activities of discontinued operations was $9.2 million, $(93.4) million and $(45.3) million for 2019, 2018 and 2017, respectively.

Cash provided by investing activities of discontinued operations in 2019 represents the proceeds from the sale of the first of two parcels of land of our discontinued site in Newark, California partially offset by capital expenditures of our discontinued FMC Lithium segment. Cash required by investing activities of discontinued operations in 2018 represents the working capital payment associated with the divestiture of FMC Health and Nutrition as well as the capital expenditures of our discontinued FMC Lithium segment.

Cash required by investing activities of discontinued operations in 2017 represents the capital expenditures of our discontinued FMC Lithium and FMC Health and Nutrition segments, partially offset by the cash proceeds from the sale of the Omega-3 business for $38.0 million.

Cash provided (required) by financing activities was $(87.0) million, $(397.3) million and $1,213.1 million in 2019, 2018 and 2017, respectively.

The change in cash required by financing activities in 2019 is primarily due to the proceeds from the Senior Notes offset by cash outflows including higher repurchases of common stock, repayment of long-term debt, and higher dividend payments in the current period as compared to the prior period. The prior period included the net proceeds from the IPO of FMC Lithium which were more than offset by repayments of long-term debt, dividend payments and repurchases of common stock.

The change in cash required by financing activities in 2018 is due to higher repayments of long-term debt of approximately $200 million as compared to 2017 and $200 million in repurchases of common stock as part of the publicly announced repurchase program. Additionally, there were significant borrowings of long-term debt in 2017 to fund the DuPont transaction. The cash required in 2018 was partially offset by the proceeds received from the IPO of FMC Lithium of $363.6 million.

Cash provided (required) by financing activities was $(37.2) million, $34.0 million and zero in 2019, 2018 and 2017, respectively.

Cash required by financing activities of discontinued operations in 2019 represents debt repayments on FMC Lithium's external debt as well as cash payments associated with its separation. Cash provided by financing activities of discontinued operations in 2018 represents the proceeds from borrowing of long-term debt of our discontinued FMC Lithium segment.

Free Cash Flow

We define free cash flow, a Non-GAAP financial measure, as all cash inflows and outflows excluding those related to financing activities (such as debt repayments, dividends, and share repurchases) and acquisition related investing activities. Free cash flow is calculated as all cash from operating activities reduced by spending for capital additions and other investing activities as well as legacy and transformation spending. Therefore, our calculation of free cash flow will almost always result in a lower amount than cash from operating activities from continuing operations, the most directly comparable U.S. GAAP measure. However, the free cash flow measure is consistent with management's assessment of operating cash flow performance and we believe it provides a useful basis for investors and securities analysts about the cash generated by routine business operations, including capital expenditures, in addition to assessing our ability to repay debt, fund acquisitions and return capital to shareholders through share repurchases and dividends.

Our use of free cash flow has limitations as an analytical tool and should not be considered in isolation or as a substitute for an analysis of our results under U.S. GAAP. First, free cash flow is not a substitute for cash provided (required) by operating activities of continuing operations, as it is not a measure of cash available for discretionary expenditures since we have non-discretionary obligations, primarily debt service, that are not deducted from the measure. Second, other companies may calculate free cash flow or similarly titled Non-GAAP financial measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of free cash flow as a tool for comparison. Additionally, the utility of free cash flow is further limited as it does not reflect our future contractual commitments and does not represent the total increase or decrease in our cash balance for a given period. Because of these and other limitations, free cash flow should be considered along with cash provided (required) by operating activities of continuing operations and other comparable financial measures prepared and presented in accordance with U.S. GAAP.

The table below presents a reconciliation of free cash flow from the most directly comparable U.S. GAAP measure.

FREE CASH FLOW RECONCILIATION

	Year ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Cash provided (required) by operating activities of continuing operations (GAAP)	$ 555.6	$ 362.7	$ 232.0
Transaction and integration costs [1]	77.1	101.1	78.9
Adjusted cash from operations [2]	$ 632.7	$ 463.8	$ 310.9
Capital expenditures [3]	(93.9)	(83.0)	(38.3)
Other investing activities [3][4]	(54.0)	(13.6)	(24.6)
Capital additions and other investing activities	$ (147.9)	$ (96.6)	$ (62.9)
Cash provided (required) by operating activities of discontinued operations [5]	(67.1)	5.7	103.5
Cash provided (required) by investing activities of discontinued operations [5]	9.2	(93.4)	(45.3)
Transaction and integration costs [1]	(77.1)	(101.1)	(78.9)
Investment in Enterprise Resource Planning system [3]	(48.0)	(48.5)	—
Legacy and transformation [6]	$ (183.0)	$ (237.3)	$ (20.7)
Free cash flow (Non-GAAP)	**$ 301.8**	**$ 129.9**	**$ 227.3**

(1) Represents payments for legal and professional fees associated with the DuPont Crop Protection Business Acquisition in addition to costs related to integrating the DuPont Crop Protection Business. See Note 5 to the consolidated financial statements for more information.
(2) Adjusted cash from operations is defined as cash provided (required) by operating activities of continuing operations excluding the effects of transaction-related cash flows, which are included within Legacy and transformation.
(3) Components of cash provided (required) by investing activities of continuing operations. Refer to the below discussion for further details.
(4) Cash spending associated with contract manufacturers was $51.7 million, $13.1 million and $11.7 million for the years ended December 31, 2019, 2018 and 2017, respectively.
(5) Refer to the above discussion for further details.
(6) Includes our legacy liabilities such as environmental remediation and other legal matters that are reported in discontinued operations as well as business integration costs associated with the DuPont Crop Protection Business Acquisition and the implementation of our new SAP system.

2020 Cash Flow Outlook

Our cash needs for 2020 include operating cash requirements (which are impacted by contributions to our pension plan, as well as environmental, asset retirement obligation, and restructuring spending), capital expenditures, and legacy and transformation spending, as well as mandatory payments of debt, dividend payments, and share repurchases. We plan to meet our liquidity needs through available cash, cash generated from operations, commercial paper issuances and borrowings under our committed revolving credit facility. At December 31, 2019 our remaining borrowing capacity under our credit facility was $1,283.0 million.

We expect 2020 free cash flow (Non-GAAP) to increase to a range of approximately $425 million to $525 million, driven by higher cash from operating activities, partially offset by higher capital expenditures and higher legacy and transformation costs. We continue to believe we can drive free cash conversion substantially higher over the next two to three years as we finalize our SAP system implementation, ending the three-year period of high cash spending on transformation activity and as we drive further improvement in working capital performance and continue to increase revenue and Adjusted EBITDA.

Although we provide a forecast for free cash flow, a Non-GAAP financial measure, we are not able to forecast the most directly comparable measure calculated and presented in accordance with U.S. GAAP, which is cash provided (required) by operating activities of continuing operations. Certain elements of the composition of the U.S. GAAP amount are not predictable, making it impractical for us to forecast. Such elements include, but are not limited to, restructuring, acquisition charges, and discontinued operations. As a result, no U.S. GAAP outlook is provided.

Cash from operating activities of continuing operations

We expect higher cash from operating activities, excluding the effects of transaction-related cash flows, primarily driven by higher forecasted Adjusted EBITDA as well as continued improvement in working capital, to be in the range of approximately $735 million to $935 million. Transaction-related cash flows are included within Legacy and transformation, which is consistent with how we evaluate our business operations from a cash flow standpoint. See below for further discussion. Cash from operating activities includes cash requirements related to our pension plans, environmental sites, restructuring and asset retirement obligations, taxes and interest on borrowings.

Pension

We do not expect to make any voluntary cash contributions to our U.S. qualified defined benefit pension plan in 2020. The plan is fully funded and our portfolio is comprised of 100 percent fixed income securities and cash. Our investment strategy is a liability hedging approach with an objective of maintaining the funded status of the plan such that the funded status volatility is minimized and the likelihood that we will be required to make significant contributions to the plan is limited.

Environmental

Projected 2020 spending includes approximately $45 million to $55 million of net environmental remediation spending for our sites accounted for within continuing operations. Environmental obligations for continuing operations primarily represent obligations at shut down or abandoned facilities within businesses that do not meet the criteria for presentation as discontinued operations. This spending includes approximately $36 million related to our environmental remediation site near Pocatello, Idaho, primarily as a result of a litigation judgment against us in the Pocatello Tribal litigation described in Note 12. In addition to the expected 2020 payments for Pocatello, the judgment resulted in the requirement for future payments of $1.5 million annually thereafter. On February 4, 2020, the Ninth Circuit granted our motion to stay the mandate and as a result, payment of the judgement, if necessary, will not take place until final disposition by the Supreme Court.

Total projected 2020 environmental spending, inclusive of both sites accounted for within continuing operations and discontinued sites (discussed within Legacy and transformation below), is expected to be in the range of $98 million to $108 million.

Restructuring and asset retirement obligations

We expect to make payments of approximately $30 million to $34 million in 2020, of which approximately $12 million is related to exit and disposal costs as a result of our decision to exit sales of all carbofuran formulations (including Furadan® insecticide/nematicide, as well as Curaterr® insecticide/nematicide and any other brands used with carbofuran products). See Note 9 for more information.

Capital additions and other investing activities

Projected 2020 capital expenditures and expenditures related to contract manufacturers are expected to be in the range of approximately $135 million to $185 million. The spending is primarily driven by diamide capacity expansion and new active ingredient capacity. Expenditures related to contract manufacturers are included within “other investing activities”.

Legacy and transformation

Projected 2020 legacy and transformation spending are expected to be in the range of approximately $175 million to $225 million. This is primarily driven by continued spending associated with the three-year implementation of a new SAP system and related costs we expect to continue to incur associated with the remaining integration of the DuPont Crop Protection Business due to its significance and complexity. Total spending related to these initiatives is expected to be approximately $125 million. Costs for these initiatives are expected to be immaterial beyond 2020.

Projected 2020 spending includes approximately $48 million to $58 million of net environmental remediation spending for our discontinued sites. These projections include spending as a result of a settlement reached in the second quarter of 2019 at our Middleport, New York site. The settlement will result in spending of approximately $20 million to $30 million per year for 2020 and 2021, due to front loading of reimbursement in installments of past costs, and a $10 million maximum per year, on average, until the remediation is complete. See Note 12 for further information.

Total projected 2020 environmental spending, inclusive of both sites accounted for within continuing operations (discussed within Cash from operating activities of continuing operations above) and discontinued sites, is expected to be in the range of $98 million to $108 million.

Share repurchases

During the year ended December 31, 2019, 4.7 million shares were repurchased under the publicly announced repurchase program. At December 31, 2019, approximately $600 million remained unused under our Board-authorized repurchase program. We intend to purchase between $400 million to $500 million of our common shares in 2020. This repurchase program does not include a specific timetable or price targets and may be suspended or terminated at any time. Shares may be purchased through open market or privately negotiated transactions at the discretion of management based on its evaluation of market conditions and other factors. We also reacquire shares from time to time from employees in connections with vesting, exercise and forfeiture of awards under our equity compensation plans.

Dividends

On January 16, 2020, we paid dividends aggregating $57.0 million to our shareholders of record as of December 31, 2019. This amount is included in “Accrued and other liabilities” on the consolidated balance sheet as of December 31, 2019. For the years ended December 31, 2019, 2018 and 2017, we paid $210.3 million, $89.2 million and $88.8 million in dividends, respectively.

Commitments

We provide guarantees to financial institutions on behalf of certain customers, principally customers in Brazil, for their seasonal borrowing. The total of these guarantees was $77.8 million at December 31, 2019. These guarantees arise during the ordinary course of business from relationships with customers and nonconsolidated affiliates. Non-performance by the guaranteed party triggers the obligation requiring us to make payments to the beneficiary of the guarantee. Based on our experience these types of guarantees have not had a material effect on our consolidated financial position or on our liquidity. Our expectation is that future payment or performance related to the non-performance of others is considered unlikely.

In connection with certain of our property and asset sales and divestitures, we have agreed to indemnify the buyer for certain liabilities, including environmental contamination and taxes that occurred prior to the date of sale. Our indemnification obligations with respect to these liabilities may be indefinite as to duration and may or may not be subject to a deductible, minimum claim amount or cap. In cases where it is not possible for us to predict the likelihood that a claim will be made or to make a reasonable estimate of the maximum potential loss or range of loss, no specific liability has been recorded. If triggered, we may be able to recover certain of the indemnity payments from third parties. In cases where it is possible, we have recorded a specific liability within our Reserve for Discontinued Operations. Refer to Note 11 for further details.

Our total significant committed contracts that we believe will affect cash over the next four years and beyond are as follows:

Contractual Commitments	**Expected Cash Payments by Year**					
(in Millions)	**2020**	**2021**	**2022**	**2023**	**2024 & beyond**	**Total**
Debt maturities [1]	$ 227.7	$ 1.6	$ 1,100.9	$ 0.3	$ 1,950.0	$ 3,280.5
Contractual interest [2]	114.9	114.9	114.9	72.8	781.5	1,199.0
Lease obligations [3]	38.3	28.3	24.1	19.0	133.1	242.8
Derivative contracts	8.7	0.2	—	—	—	8.9
Purchase obligations [4]	389.1	324.5	123.1	127.9	161.3	1,125.9
Total [5]	**$ 778.7**	**$ 469.5**	**$ 1,363.0**	**$ 220.0**	**$ 3,025.9**	**$ 5,857.1**

(1) Excluding discounts.
(2) Contractual interest is the interest we are contracted to pay on our long-term debt obligations. We had $800.0 million of long-term debt subject to variable interest rates at December 31, 2019. The rate assumed for the variable interest component of the contractual interest obligation was the rate in effect at December 31, 2019. Variable rates are determined by the market and will fluctuate over time.
(3) Obligations associated with operating leases, before sub-lease rental income.
(4) Purchase obligations consist of agreements to purchase goods and services that are enforceable and legally binding and specify all significant terms, including fixed or minimum quantities to be purchased, price provisions and timing of the transaction. We have entered into a number of purchase obligations for the sourcing of materials and energy where take-or-pay arrangements apply. Since the majority of the minimum obligations under these contracts are take-or-pay commitments over the life of the contract and not a year by year take-or-pay, the obligations in the table related to these types of contacts are presented in the earliest period in which the minimum obligation could be payable under these types of contracts.
(5) As of December 31, 2019, the liability for uncertain tax positions was $71.4 million. This liability is excluded from the table above. Additionally, accrued pension and other postretirement benefits and our environmental liabilities as recorded on our consolidated balance sheets are excluded from the table above. Due to the high degree of uncertainty regarding the timing of potential future cash flows associated with these liabilities, we are unable to make a reasonably reliable estimate of the amount and periods in which these liabilities might be paid. Also excluded from the table above is the liability attributable to the transition tax on deemed repatriated foreign earnings incurred as a result of the Act of $139.3 million.

Contingencies

See Note 20 to our consolidated financial statements included in this Form 10-K.

Climate Change

As a global corporate citizen, we are concerned about the consequences of climate change and will take prudent and cost effective actions that reduce Green House Gas (GHG) emissions to the atmosphere.

FMC is committed to continuing to do its part to address climate change and its impacts. In 2019 we set new environmental goals to reflect the changes to our business with the acquisition of the DuPont Crop Protection Business and the separation of the FMC Lithium business. Our new 2030 intensity reduction targets for energy and greenhouse gas emissions are both 25 percent from our 2018 baseline year. FMC has been reporting its GHG emissions and mitigation strategy to CDP (formerly Carbon Disclosure Project) since 2016. FMC detailed the business risks and opportunities we have due to climate change and its impacts in our CDP climate change reports. In recognition of our commitment to address climate change, FMC enhanced its CDP Climate Change score from a “C” in 2018 to a “B” in 2019.

Even as we take action to control the release of GHGs, additional warming is anticipated. Long-term, higher average global temperatures could result in induced changes in natural resources, growing seasons, precipitation patterns, weather patterns, species distributions, water availability, sea levels, and biodiversity. These impacts could cause changes in supplies of raw materials used to maintain FMC’s production capacity and could lead to possible increased sourcing costs. Depending on how pervasive the climate impacts are in the different geographic locations experiencing changes in natural resources, FMC’s customers could be impacted. Demand for FMC’s products could increase if our products meet our customers’ needs to adapt to climate change impacts or decrease if our products do not meet their needs. Within our own operations, we continually assess our manufacturing sites worldwide for risks and opportunities to increase our preparedness for climate change. We are continuing to evaluate sea level rise and storm surge at our plants to understand timing of potential impacts and proactive responses that may need to be taken. To lessen FMC’s overall environmental footprint, we have taken actions to increase the energy efficiency in our manufacturing sites. We have also committed to new 2030 goals to reduce our water use intensity in high-risk areas by 20 percent and to maintain our 2018 waste disposed intensity which otherwise would increase by 55 percent due to expected growth and shifts in production mix.

In our product portfolio, we see market opportunities for our products to address climate change and its impacts. For example, FMC's agricultural products can help customers increase yield, energy and water efficiency, and decrease greenhouse gas emissions. Our products can also help growers adapt to more unpredictable growing conditions and the effects these types of threats have on crops. FMC has committed to invest 100% of our innovation budget to developing sustainable products and solutions for future use.

We are improving existing products and developing new platforms and technologies that help mitigate impacts of climate change. FMC is developing products with a lighter environmental footprint in its biologicals products. These opportunities could lead to new products and services for our existing and potential customers. Beyond our products and operations, FMC recognizes that energy consumption throughout our supply chain can impact climate change and product costs. Therefore, we will actively work with our entire value chain - suppliers, contractors, and customers - to improve their energy efficiencies and to reduce their GHG emissions.

We continue to follow legislative and regulatory developments regarding climate change because the regulation of greenhouse gases, depending on their nature and scope, could subject some of our manufacturing operations to additional costs or limits on operations. In December 2015, 195 countries at the United Nations Climate Change Conference in Paris reached an agreement to reduce GHGs. It remains to be seen how and when each of these countries will implement this agreement. The United States was a signatory to the Paris Agreement. Then on November 4, 2019, the United States announced that it will begin formally withdrawing the US from the Paris climate accord, the first step in a year-long process that will lead to a complete withdrawal just after the 2020 presidential election.

Notwithstanding the United States' withdrawal from the Paris Agreement, FMC will actively manage climate risks and incorporate them in our decision making as indicated in our responses to the CDP Climate Change Module. The United States Climate Alliance, a coalition of 24 states (governing 55 percent of the population) and unincorporated self-governing territories in the United States have expressed their commitment to upholding the objectives of the 2015 Paris Agreement on climate change within their borders. Several of our manufacturing and R&D sites fall within this alliance territory. FMC remains deeply committed to reducing our GHG emissions and energy consumption at all our facilities around the world.

Some of our foreign operations are subject to national or local energy management or climate change regulation, such as our plant in Denmark that is subject to the EU Emissions Trading Scheme. At present, that plant's emissions are below its designated cap.

In December 2019, the European Commission approved the European Green Deal, with the goal of making the EU carbon neutral by 2050. The Deal includes investment plans and a roadmap to fight against climate change. FMC is closely following updates and the discussion surrounding the Green Deal. The costs of complying with possible future requirements are difficult to estimate at this time.

Future GHG regulatory requirements may result in increased costs of energy, additional capital costs for emissions control or new equipment, and/or costs associated with cap and trade or carbon taxes. We are currently monitoring regulatory developments. The costs of complying with possible future climate change requirements are difficult to estimate at this time.

Recently Adopted and Issued Accounting Pronouncements and Regulatory Items

See Note 2 "Recently Issued and Adopted Accounting Pronouncements and Regulatory Items" to our consolidated financial statements included in this Form 10-K.

Off-Balance Sheet Arrangements

See Note 20 to our consolidated financial statements included in this Form 10-K and Part I, Item 3 - Legal Proceedings for further information regarding any off-balance sheet arrangements.

Fair Value Measurements

See Note 19 to our consolidated financial statements included in this Form 10-K for additional discussion surrounding our fair value measurements.

Critical Accounting Policies

Our consolidated financial statements are prepared in conformity with U.S. generally accepted accounting principles ("U.S. GAAP"). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. We have described our accounting policies in Note 1 "Principal Accounting Policies and Related Financial Information" to our consolidated financial statements included in this Form 10-K. We have reviewed these accounting policies, identifying those that we believe to be critical to the preparation and understanding of our consolidated financial statements. We have reviewed these critical accounting policies with the Audit Committee of the Board of Directors. Critical accounting policies are central to our presentation of results of operations and financial condition in accordance with U.S. GAAP and require management to make estimates and judgments on certain matters. We base our estimates and judgments on historical experience, current conditions and other reasonable factors.

Revenue recognition and trade receivables

We recognize revenue when (or as) we satisfy our performance obligation which is when the customer obtains control of the good or service. Rebates due to customers are accrued as a reduction of revenue in the same period that the related sales are recorded based on the contract terms. Refer to Note 3 to our consolidated financial statements included in this Form 10-K for more information.

We record amounts billed for shipping and handling fees as revenue. Costs incurred for shipping and handling are recorded as costs of sales and services. Amounts billed for sales and use taxes, value-added taxes, and certain excise and other specific transactional taxes imposed on revenue-producing transactions are presented on a net basis and excluded from sales in the consolidated income statements. We record a liability until remitted to the respective taxing authority.

We periodically enter into prepayment arrangements with customers and receive advance payments for product to be delivered in future periods. These advance payments are recorded as deferred revenue and classified as “Advance payments from customers” on the consolidated balance sheet. Revenue associated with advance payments is recognized as shipments are made and transfer of control to the customer takes place.

Trade receivables consist of amounts owed to us from customer sales and are recorded when revenue is recognized. The allowance for trade receivables represents our best estimate of the probable losses associated with potential customer defaults. In developing our allowance for trade receivables, we use a two stage process which includes calculating a general formula to develop an allowance to appropriately address the uncertainty surrounding collection risk of our entire portfolio and specific allowances for customers where the risk of collection has been reasonably identified either due to liquidity constraints or disputes over contractual terms and conditions.

Our method of calculating the general formula consists of estimating the recoverability of trade receivables based on historical experience, current collection trends, and external business factors such as economic factors, including regional bankruptcy rates, and political factors. Our analysis of trade receivable collection risk is performed quarterly, and the allowance is adjusted accordingly.

We also hold long-term receivables that represent long-term customer receivable balances related to past-due accounts which are not expected to be collected within the current year. Our policy for the review of the allowance for these receivables is consistent with the discussion in the preceding paragraph above on trade receivables. Therefore on an ongoing basis, we continue to evaluate the credit quality of our long-term receivables utilizing aging of receivables, collection experience and write-offs, as well as existing economic conditions, to determine if an additional allowance is necessary.

Environmental obligations and related recoveries

We provide for environmental-related obligations when they are probable and amounts can be reasonably estimated. Where the available information is sufficient to estimate the amount of liability, that estimate has been used. Where the information is only sufficient to establish a range of probable liability and no point within the range is more likely than any other, the lower end of the range has been used.

Estimated obligations to remediate sites that involve oversight by the United States Environmental Protection Agency (“EPA”), or similar government agencies, are generally accrued no later than when a Record of Decision (“ROD”), or equivalent, is issued, or upon completion of a Remedial Investigation/Feasibility Study (“RI/FS”), or equivalent, that is submitted by us to the appropriate government agency or agencies. Estimates are reviewed quarterly by our environmental remediation management, as well as by financial and legal management and, if necessary, adjusted as additional information becomes available. The estimates can change substantially as additional information becomes available regarding the nature or extent of site contamination, required remediation methods, and other actions by or against governmental agencies or private parties.

Our environmental liabilities for continuing and discontinued operations are principally for costs associated with the remediation and/or study of sites at which we are alleged to have released hazardous substances into the environment. Such costs principally include, among other items, RI/FS, site remediation, costs of operation and maintenance of the remediation plan, management costs, fees to outside law firms and consultants for work related to the environmental effort, and future monitoring costs. Estimated site liabilities are determined based upon existing remediation laws and technologies, specific site consultants' engineering studies or by extrapolating experience with environmental issues at comparable sites.

Included in our environmental liabilities are costs for the operation, maintenance and monitoring of site remediation plans (OM&M). Such reserves are based on our best estimates for these OM&M plans. Over time we may incur OM&M costs in excess of these reserves. However, we are unable to reasonably estimate an amount in excess of our recorded reserves because we cannot reasonably estimate the period for which such OM&M plans will need to be in place or the future annual cost of such remediation, as conditions at these environmental sites change over time. Such additional OM&M costs could be significant in total but would be incurred over an extended period of years.

Included in the environmental reserve balance, other assets balance and disclosure of reasonably possible loss contingencies are amounts from third party insurance policies, which we believe are probable of recovery.

Provisions for environmental costs are reflected in income, net of probable and estimable recoveries from named Potentially Responsible Parties ("PRPs") or other third parties. In the fourth quarter of 2019, we increased our reserves for the Pocatello Tribal Matter by $72.8 million, which represents both the historical and discounted present value of future annual use permit fees as well as the associated legal costs. See Note 12 for further information. All other environmental provisions incorporate inflation and are not discounted to their present value.

In calculating and evaluating the adequacy of our environmental reserves, we have taken into account the joint and several liability imposed by Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and the analogous state laws on all PRPs and have considered the identity and financial condition of the other PRPs at each site to the extent possible. We have also considered the identity and financial condition of other third parties from whom recovery is anticipated, as well as the status of our claims against such parties. Although we are unable to forecast the ultimate contributions of PRPs and other third parties with absolute certainty, the degree of uncertainty with respect to each party is taken into account when determining the environmental reserve by adjusting the reserve to reflect the facts and circumstances on a site-by-site basis. Our liability includes our best estimate of the costs expected to be paid before the consideration of any potential recoveries from third parties. We believe that any recorded recoveries related to PRPs are realizable in all material respects. Recoveries are recorded as either an offset in "Environmental liabilities, continuing and discontinued" or as "Other assets" in our consolidated balance sheets in accordance with U.S. accounting literature.

See Note 12 to our consolidated financial statements included in this Form 10-K for changes in estimates associated with our environmental obligations.

Impairments and valuation of long-lived and indefinite-lived assets

Our long-lived assets primarily include property, plant and equipment, goodwill and intangible assets. The assets and liabilities of acquired businesses are measured at their estimated fair values at the dates of acquisition. The excess of the purchase price over the estimated fair value of the net assets acquired, including identified intangibles, is recorded as goodwill. The determination and allocation of fair value to the assets acquired and liabilities assumed is based on various assumptions and valuation methodologies requiring considerable management judgment, including estimates based on historical information, current market data and future expectations. The principal assumptions utilized in our valuation methodologies include revenue growth rates, operating margin estimates and discount rates. Although the estimates were deemed reasonable by management based on information available at the dates of acquisition, those estimates are inherently uncertain.

We test for impairment whenever events or circumstances indicate that the net book value of our property, plant and equipment may not be recoverable from the estimated undiscounted expected future cash flows expected to result from their use and eventual disposition. In cases where the estimated undiscounted expected future cash flows are less than net book value, an impairment loss is recognized equal to the amount by which the net book value exceeds the estimated fair value of assets, which is based on discounted cash flows at the lowest level determinable. The estimated cash flows reflect our assumptions about selling prices, volumes, costs and market conditions over a reasonable period of time.

We perform an annual impairment test of goodwill and indefinite-lived intangible assets in the third quarter of each year, or more frequently whenever an event or change in circumstances occurs that would require reassessment of the recoverability of those assets. In performing our evaluation we assess qualitative factors such as overall financial performance of our reporting units, anticipated changes in industry and market structure, competitive environments, planned capacity and cost factors such as raw material prices. Based on our assessment for 2019, we determined that no goodwill and indefinite-lived intangible assets impairment charge to our continuing operations was required.

See Note 9 to our consolidated financial statements included in this Form 10-K for charges associated with long-lived asset disposal costs and the activity associated with the restructuring reserves.

Pension and other postretirement benefits

We provide qualified and nonqualified defined benefit and defined contribution pension plans, as well as postretirement health care and life insurance benefit plans to our employees and retirees. The costs (benefits) and obligations related to these benefits reflect key assumptions related to general economic conditions, including interest (discount) rates, healthcare cost trend rates, expected rates of return on plan assets and the rates of compensation increase for employees. The costs (benefits) and obligations for these benefit programs are also affected by other assumptions, such as average retirement age, mortality, employee turnover, and plan participation. To the extent our plans' actual experience, as influenced by changing economic and financial market conditions or by changes to our own plans' demographics, differs from these assumptions, the costs and obligations for providing these benefits, as well as the plans' funding requirements, could increase or decrease. When actual results differ from our assumptions, the difference is typically recognized over future periods. In addition, the unrealized gains and losses related to our pension and postretirement benefit obligations may also affect periodic benefit costs (benefits) in future periods.

We use several assumptions and statistical methods to determine the asset values used to calculate both the expected rate of return on assets component of pension cost and to calculate our plans' funding requirements. The expected rate of return on plan assets is based on a market-related value of assets that recognizes investment gains and losses over a five-year period. We use an actuarial value of assets to determine our plans' funding requirements. The actuarial value of assets must be within a certain range, high or low, of the actual market value of assets, and is adjusted accordingly.

We select the discount rate used to calculate pension and other postretirement obligations based on a review of available yields on high-quality corporate bonds as of the measurement date. In selecting a discount rate as of December 31, 2019, we placed particular emphasis on a discount rate yield-curve provided by our actuary. This yield-curve, when populated with projected cash flows that represent the expected timing and amount of our plans' benefit payments, produced an effective discount rate of 3.22 percent for our U.S. qualified plan, 2.74 percent for our U.S. nonqualified, and 2.89 percent for our U.S. other postretirement benefit plans.

The discount rates used to determine projected benefit obligation at our December 31, 2019 and 2018 measurement dates for the U.S. qualified plan were 3.22 percent and 4.35 percent, respectively. The effect of the change in the discount rate from 4.35 percent to 3.22 percent at December 31, 2019 resulted in a $152.8 million increase to our U.S. qualified pension benefit obligations. The effect of the change in the discount rate used to determine net annual benefit cost (income) from 3.68 percent at December 31, 2018 to 4.36 percent at December 31, 2019 resulted in a $0.5 million decrease to the 2019 U.S. qualified pension expense.

The change in discount rate from 4.35 percent at December 31, 2018 to 3.22 percent at December 31, 2019 was attributable to an increase in yields on high quality corporate bonds with cash flows matching the timing and amount of our expected future benefit payments between the 2018 and 2019 measurement dates. Using the December 31, 2019 and 2018 yield curves, our U.S. qualified plan cash flows produced a single weighted-average discount rate of approximately 3.22 percent and 4.35 percent, respectively.

In developing the assumption for the long-term rate of return on assets for our U.S. Plan, we take into consideration the technical analysis performed by our outside actuaries, including historical market returns, information on the assumption for long-term real returns by asset class, inflation assumptions, and expectations for standard deviation related to these best estimates. Our long-term rate of return for the fiscal year ended December 31, 2019, 2018 and 2017 was 4.25 percent, 5.00 percent and 6.50 percent, respectively.

For the sensitivity of our pension costs to incremental changes in assumptions see our discussion below.

Sensitivity analysis related to key pension and postretirement benefit assumptions.

A one-half percent increase in the assumed discount rate would have decreased pension and other postretirement benefit obligations by $72.1 million and $62.4 million at December 31, 2019 and 2018, respectively, and decreased pension and other postretirement benefit costs by $0.6 million, $0.4 million and $0.4 million for 2019, 2018 and 2017, respectively. A one-half percent decrease in the assumed discount rate would have increased pension and other postretirement benefit obligations by $79.4 million and $68.3 million at December 31, 2019 and 2018, respectively, and increased pension and other postretirement benefit cost by $0.5 million, $0.1 million and $0.4 million for 2019, 2018 and 2017, respectively.

A one-half percent increase in the assumed expected long-term rate of return on plan assets would have decreased pension costs by $6.3 million, $6.4 million and $6.0 million for 2019, 2018 and 2017, respectively. A one-half percent decrease in the assumed long-term rate of return on plan assets would have increased pension costs by $6.3 million, $6.4 million and $6.0 million for 2019, 2018 and 2017, respectively.

Further details on our pension and other postretirement benefit obligations and net periodic benefit costs (benefits) are found in Note 15 to our consolidated financial statements in this Form 10-K.

Income taxes

We have recorded a valuation allowance to reduce deferred tax assets in certain jurisdictions to the amount that we believe is more likely than not to be realized. In assessing the need for this allowance, we have considered a number of factors including future taxable income, the jurisdictions in which such income is earned and our ongoing tax planning strategies. In the event that we determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to income in the period such determination was made. Similarly, should we conclude that we would be able to realize certain deferred tax assets in the future in excess of the net recorded amount, an adjustment to the deferred tax assets would increase income in the period such determination was made.

Additionally, we file income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. Certain income tax returns for FMC entities taxable in the U.S. and significant foreign jurisdictions are open for examination and adjustment. We assess our income tax positions and record a liability for all years open to examination based upon our evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more likely than not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50 percent likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. We adjust these liabilities, if necessary, upon the completion of tax audits or changes in tax law.

On December 22, 2017, the Act was enacted in the United States. The Act reduced the U.S. federal corporate tax rate from 35 percent to 21 percent, required companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and created new taxes on certain foreign sourced earnings. At December 31, 2018, the Company had completed its accounting for the impacts of the enactment of the Act.

See Note 13 to our consolidated financial statements included in this Form 10-K for additional discussion surrounding income taxes.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our earnings, cash flows and financial position are exposed to market risks relating to fluctuations in commodity prices, interest rates and foreign currency exchange rates. Our policy is to minimize exposure to our cash flow over time caused by changes in commodity, interest and currency exchange rates. To accomplish this, we have implemented a controlled program of risk management consisting of appropriate derivative contracts entered into with major financial institutions.

The analysis below presents the sensitivity of the market value of our financial instruments to selected changes in market rates and prices. The range of changes chosen reflects our view of changes that are reasonably possible over a one-year period. Market value estimates are based on the present value of projected future cash flows considering the market rates and prices chosen.

At December 31, 2019, our net financial instrument position was a net liability of $8.9 million compared to a net asset of $11.4 million at December 31, 2018. The change in the net financial instrument position was primarily due to exchange rate fluctuations in our foreign exchange portfolio.

Since our risk management programs are generally highly effective, the potential loss in value for each risk management portfolio described below would be largely offset by changes in the value of the underlying exposure.

Foreign Currency Exchange Rate Risk

The primary currencies for which we have exchange rate exposure are the U.S. dollar versus the euro, the Chinese yuan, the Brazilian real, Mexican peso, Indian rupee and the Argentine peso. Foreign currency debt and foreign exchange forward contracts are used in countries where we do business, thereby reducing our net asset exposure. Foreign exchange forward contracts are also used to hedge firm and highly anticipated foreign currency cash flows.

To analyze the effects of changing foreign currency rates, we have performed a sensitivity analysis in which we assume an instantaneous 10 percent change in the foreign currency exchange rates from their levels at December 31, 2019 and 2018, with all other variables (including interest rates) held constant.

		Hedged Currency vs. Functional Currency	
(in Millions)	Net Asset / (Liability) Position on Consolidated Balance Sheets	Net Asset / (Liability) Position with 10% Strengthening	Net Asset / (Liability) Position with 10% Weakening
Net asset/(liability) position at December 31, 2019	$ (8.0)	$ 55.9	$ (75.4)
Net asset/(liability) position at December 31, 2018	11.6	19.2	(16.7)

Interest Rate Risk

One of the strategies that we can use to manage interest rate exposure is to enter into interest rate swap agreements. In these agreements, we agree to exchange, at specified intervals, the difference between fixed and variable interest amounts calculated on an agreed-upon notional principal amount. In the quarter ended December 31, 2019, we had outstanding contracts in place to swap portions of our variable-rate debt to fixed-rate debt with an aggregate notional value of $200.0 million.

To analyze the effects of changing interest rates, we have performed a sensitivity analysis in which we assume an instantaneous one percent change in the interest rates from their levels at December 31, 2019 and 2018, with all other variables held constant.

(in Millions)	Net Asset / (Liability) Position on Consolidated Balance Sheets	1% Increase	1% Decrease
Net asset/(liability) position at December 31, 2019	$ (0.9)	$ —	$ (1.9)
Net asset/(liability) position at December 31, 2018	(0.2)	2.2	(2.7)

Our debt portfolio at December 31, 2019 is composed of 80 percent fixed-rate debt and 20 percent variable-rate debt. The variable-rate component of our debt portfolio principally consists of borrowings under our 2017 Term Loan Facility, Credit Facility, variable-rate industrial and pollution control revenue bonds, and amounts outstanding under foreign subsidiary credit lines. Changes in interest rates affect different portions of our variable-rate debt portfolio in different ways.

Based on the variable-rate debt in our debt portfolio at December 31, 2019, a one percentage point increase in interest rates would have increased gross interest expense by $6.4 million and a one percentage point decrease in interest rates would have decreased gross interest expense by $6.4 million for the year ended December 31, 2019.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

FMC CORPORATION

CONSOLIDATED STATEMENTS OF INCOME (LOSS)

(in Millions, Except Per Share Data)	Year Ended December 31, 2019	2018	2017
Revenue	$ 4,609.8	$ 4,285.3	$ 2,531.2
Costs and Expenses			
Costs of sales and services	2,526.2	2,405.5	1,579.4
Gross Margin	$ 2,083.6	$ 1,879.8	$ 951.8
Selling, general and administrative expenses	792.9	790.0	581.7
Research and development expenses	298.1	287.7	138.4
Restructuring and other charges (income)	171.0	61.2	73.2
Total costs and expenses	$ 3,788.2	$ 3,544.4	$ 2,372.7
Income from continuing operations before equity in (earnings) loss of affiliates, non-operating pension and postretirement charges (income), interest expense, net and income taxes	$ 821.6	$ 740.9	$ 158.5
Equity in (earnings) loss of affiliates	—	(0.1)	(0.1)
Non-operating pension and postretirement charges (income)	8.1	(0.5)	(16.3)
Interest income	(1.9)	(1.4)	(0.9)
Interest expense	160.4	134.5	80.0
Income (loss) from continuing operations before income taxes	$ 655.0	$ 608.4	$ 95.8
Provision (benefit) for income taxes	111.5	70.8	228.9
Income (loss) from continuing operations	$ 543.5	$ 537.6	$ (133.1)
Discontinued operations, net of income taxes	(63.3)	(26.1)	671.5
Net income (loss)	$ 480.2	$ 511.5	$ 538.4
Less: Net income (loss) attributable to noncontrolling interests	2.8	9.4	2.6
Net income (loss) attributable to FMC stockholders	**$ 477.4**	**$ 502.1**	**$ 535.8**
Amounts attributable to FMC stockholders:			
Continuing operations, net of income taxes	$ 540.7	$ 531.4	$ (135.7)
Discontinued operations, net of income taxes	(63.3)	(29.3)	671.5
Net income (loss) attributable to FMC stockholders	**$ 477.4**	**$ 502.1**	**$ 535.8**
Basic earnings (loss) per common share attributable to FMC stockholders:			
Continuing operations	$ 4.12	$ 3.94	$ (1.01)
Discontinued operations	(0.48)	(0.22)	5.00
Net income (loss) attributable to FMC stockholders	**$ 3.64**	**$ 3.72**	**$ 3.99**
Diluted earnings (loss) per common share attributable to FMC stockholders:			
Continuing operations	$ 4.10	$ 3.91	$ (1.01)
Discontinued operations	(0.48)	(0.22)	5.00
Net income (loss) attributable to FMC stockholders	**$ 3.62**	**$ 3.69**	**$ 3.99**

The accompanying notes are an integral part of these consolidated financial statements.

FMC CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(in Millions)	Year Ended December 31, 2019	2018	2017
Net income (loss)	$ 480.2	$ 511.5	$ 538.4
Other comprehensive income (loss), net of tax:			
Foreign currency adjustments:			
Foreign currency translation gain (loss) arising during the period	$ (18.5)	$ (100.8)	$ 172.7
Reclassification of foreign currency translations losses	—	—	13.9
Total foreign currency adjustments [(1)]	$ (18.5)	$ (100.8)	$ 186.6
Derivative instruments:			
Unrealized hedging gains (losses) and other, net of tax of $(16.7), $2.6 and $0.5	$ (69.0)	$ 13.7	$ (1.2)
Reclassification of deferred hedging (gains) losses and other, included in net income, net of tax of $(3.0), $(3.1) and $(0.1) [(3)]	(8.2)	(7.7)	(0.7)
Total derivative instruments, net of tax of $(19.7), $(0.5) and $0.4	$ (77.2)	$ 6.0	$ (1.9)
Pension and other postretirement benefits:			
Unrealized actuarial gains (losses) and prior service (costs) credits, net of tax of $(1.4), $1.3 and $1.9 [(2)]	$ (6.5)	$ 4.2	$ 0.6
Reclassification of net actuarial and other (gain) loss, amortization of prior service costs and settlement charges, included in net income, net of tax of $2.6, $4.3 and $14.5 [(3)]	9.9	16.5	51.6
Total pension and other postretirement benefits, net of tax of $1.2, $5.6 and $16.4	$ 3.4	$ 20.7	$ 52.2
Other comprehensive income (loss), net of tax	$ (92.3)	$ (74.1)	$ 236.9
Comprehensive income (loss)	$ 387.9	$ 437.4	$ 775.3
Less: Comprehensive income (loss) attributable to the noncontrolling interest	(0.5)	3.9	1.4
Comprehensive income (loss) attributable to FMC stockholders	**$ 388.4**	**$ 433.5**	**$ 773.9**

(1) Income taxes are not provided for other outside basis differences inherent in our investments in subsidiaries because the investments and related unremitted earnings are essentially permanent in duration or we have concluded that no additional tax liability will arise upon disposal or remittance. Note, in the first quarter of 2017, we changed our assertion on unremitted earnings for certain foreign subsidiaries as a result of the sale of our FMC Health and Nutrition segment.

(2) At December 31 of each year, we remeasure our pension and postretirement plan obligations at which time we record any actuarial gains (losses) and prior service (costs) credits to other comprehensive income. During the years ended December 31, 2018 and 2017, due to the announced plans to separate FMC Lithium and divest FMC Health and Nutrition, respectively, we triggered a curtailment of our U.S. pension plans. As a result, we revalued our pension plans as of October 31, 2018 and March 31, 2017, respectively, in addition to the normal December 31st remeasurement, which resulted in adjustments to comprehensive income. See Note 15 for more information.

(3) For more detail on the components of these reclassifications and the affected line item in the consolidated statements of income (loss) see Note 17 within these consolidated financial statements.

The accompanying notes are an integral part of these consolidated financial statements.

FMC CORPORATION

CONSOLIDATED BALANCE SHEETS

(in Millions, Except Share and Par Value Data)	December 31, 2019	December 31, 2018
ASSETS		
Current assets		
Cash and cash equivalents	$ 339.1	$ 134.4
Trade receivables, net of allowance of $26.3 in 2019 and $22.4 in 2018	2,231.2	2,143.8
Inventories	1,017.0	1,025.5
Prepaid and other current assets	487.5	432.6
Current assets of discontinued operations	—	293.9
Total current assets	$ 4,074.8	$ 4,030.2
Investments	0.7	0.7
Property, plant and equipment, net	758.0	756.9
Goodwill	1,467.5	1,468.1
Other intangibles, net	2,629.0	2,703.4
Other assets including long-term receivables, net	685.3	383.4
Deferred income taxes	257.4	272.8
Noncurrent assets of discontinued operations	—	358.8
Total assets	**$ 9,872.7**	**$ 9,974.3**
LIABILITIES AND EQUITY		
Current liabilities		
Short-term debt and current portion of long-term debt	$ 227.7	$ 547.7
Accounts payable, trade and other	900.1	795.5
Advance payments from customers	492.7	458.4
Accrued and other liabilities	680.6	570.8
Accrued customer rebates	280.6	365.3
Guarantees of vendor financing	75.7	67.1
Accrued pension and other postretirement benefits, current	4.3	6.2
Income taxes	62.2	85.1
Current liabilities of discontinued operations	—	97.3
Total current liabilities	$ 2,723.9	$ 2,993.4
Long-term debt, less current portion	3,031.1	2,145.0
Accrued pension and other postretirement benefits, long-term	44.2	47.2
Environmental liabilities, continuing and discontinued	470.5	458.5
Deferred income taxes	333.2	330.8
Noncurrent liabilities of discontinued operations	—	46.1
Other long-term liabilities	708.4	742.9
Commitments and contingent liabilities (Note 20)		
Equity		
Preferred stock, no par value, authorized 5,000,000 shares; no shares issued in 2019 or 2018	$ —	$ —
Common stock, $0.10 par value, authorized 260,000,000 shares in 2019 and 2018; 185,983,792 shares issued in 2019 and 2018	18.6	18.6
Capital in excess of par value of common stock	829.7	776.2
Retained earnings	4,188.8	4,334.3
Accumulated other comprehensive income (loss)	(412.0)	(308.9)
Treasury stock, common, at cost - 2019: 56,859,498 shares, 2018: 53,702,178 shares	(2,092.8)	(1,699.1)
Total FMC stockholders’ equity	$ 2,532.3	$ 3,121.1
Noncontrolling interests	29.1	89.3
Total equity	**$ 2,561.4**	**$ 3,210.4**
Total liabilities and equity	**$ 9,872.7**	**$ 9,974.3**

The accompanying notes are an integral part of these consolidated financial statements.

FMC CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in Millions)	Year Ended December 31, 2019	2018	2017
Cash provided (required) by operating activities of continuing operations:			
Net income (loss)	$ 480.2	$ 511.5	$ 538.4
Discontinued operations, net of income taxes	63.3	26.1	(671.5)
Income (loss) from continuing operations	$ 543.5	$ 537.6	$ (133.1)
Adjustments from income (loss) from continuing operations to cash provided (required) by operating activities of continuing operations:			
Depreciation and amortization	$ 150.1	$ 150.2	$ 97.8
Equity in (earnings) loss of affiliates	—	(0.1)	(0.1)
Restructuring and other charges (income)	171.0	61.2	73.2
Deferred income taxes	46.1	(43.9)	113.0
Pension and other postretirement benefits	12.6	6.1	(8.4)
Share-based compensation	25.6	22.5	21.1
Changes in operating assets and liabilities, net of effect of acquisitions and divestitures:			
Trade receivables, net	$ (123.5)	$ (281.5)	$ (191.1)
Guarantees of vendor financing	8.6	15.4	(54.7)
Advance payments from customers	34.1	80.2	141.1
Accrued customer rebates	(85.8)	104.1	16.9
Inventories	6.4	(200.7)	(102.8)
Accounts payable, trade and other	103.0	166.7	304.3
Income taxes	(25.0)	(94.7)	109.3
Pension and other postretirement benefit contributions	(13.4)	(37.5)	(55.3)
Environmental spending, continuing, net of recoveries	(18.3)	(20.3)	(20.2)
Restructuring and other spending	(18.6)	(25.2)	(7.3)
Transaction-related spending	(77.1)	(101.1)	(78.9)
Change in other operating assets and liabilities, net [(1)]	(183.7)	23.7	7.2
Cash provided (required) by operating activities of continuing operations	$ 555.6	$ 362.7	$ 232.0
Cash provided (required) by operating activities of discontinued operations:			
Environmental spending, discontinued, net of recoveries	$ (51.7)	$ (41.0)	$ (32.3)
Operating activities of discontinued operations, net of divestiture costs	9.0	74.5	168.6
Other discontinued spending	(24.4)	(27.8)	(32.8)
Cash provided (required) by operating activities of discontinued operations	$ (67.1)	$ 5.7	$ 103.5

(1) Changes in all periods represent timing of payments associated with all other operating assets and liabilities.

The accompanying notes are an integral part of these consolidated financial statements.

FMC CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(in Millions)	Year Ended December 31, 2019	2018	2017
Cash provided (required) by investing activities of continuing operations:			
Capital expenditures	$ (93.9)	$ (83.0)	$ (38.3)
Acquisitions, net (2)	—	19.6	(1,225.6)
Proceeds from sale of product portfolios	—	88.0	—
Investment in Enterprise Resource Planning system	(48.0)	(48.5)	—
Other investing activities (3)	(54.0)	(13.6)	(24.6)
Cash provided (required) by investing activities of continuing operations	$ (195.9)	$ (37.5)	$ (1,288.5)
Cash provided (required) by investing activities of discontinued operations:			
Proceeds from divestiture	$ 26.2	$ —	$ 38.0
Other discontinued investing activities	(17.0)	(93.4)	(83.3)
Cash provided (required) by investing activities of discontinued operations	$ 9.2	$ (93.4)	$ (45.3)
Cash provided (required) by financing activities of continuing operations:			
Increase (decrease) in short-term debt	$ (11.9)	$ 79.5	$ (3.1)
Proceeds from borrowing of long-term debt	1,500.0	—	1,598.9
Financing fees and interest rate swap settlements	(97.4)	(3.1)	(11.0)
Repayments of long-term debt	(901.9)	(552.0)	(302.3)
Transactions with noncontrolling interests	—	—	(0.5)
Net proceeds received from initial public offering of FMC Lithium (4)	—	363.6	—
Dividends paid (5)	(210.3)	(89.2)	(88.8)
Issuances of common stock, net	50.7	10.7	22.5
Repurchases of common stock under publicly announced program	(400.0)	(200.0)	—
Other repurchases of common stock	(16.2)	(6.8)	(2.6)
Cash provided (required) by financing activities of continuing operations	$ (87.0)	$ (397.3)	$ 1,213.1
Cash provided (required) by financing activities of discontinued operations:			
Proceeds from borrowing of long-term debt	$ —	$ 34.0	$ —
Payment of Livent external debt	(27.0)	—	—
Cash transfer to Livent due to spin	(10.2)	—	—
Cash provided (required) by financing activities of discontinued operations	$ (37.2)	$ 34.0	$ —
Effect of exchange rate changes on cash and cash equivalents	(0.2)	4.5	4.0
Increase (decrease) in cash and cash equivalents	$ 177.4	$ (121.3)	$ 218.8
Cash and cash equivalents of continuing operations, beginning of period	$ 134.4	$ 281.8	$ 60.2
Cash and cash equivalents of discontinued operations, beginning of period (6)	27.3	1.2	4.0
Cash and cash equivalents, beginning of period	$ 161.7	$ 283.0	$ 64.2
Less: cash and cash equivalent of discontinued operations, end of period	—	27.3	1.2
Cash and cash equivalents, end of period	**$ 339.1**	**$ 134.4**	**$ 281.8**

(2) Represents the cash portion of the total purchase consideration paid for the DuPont Crop Protection Business Acquisition. See Note 5 for more information on the non-cash consideration transferred to DuPont.

(3) Cash spending associated with contract manufacturers was $51.7 million, $13.1 million and $11.7 million for the years ended December 31, 2019, 2018 and 2017, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

(4) Pursuant to the terms of the separation and distribution agreement, we received a net distribution of approximately $364 million from the public offering of Livent representing the proceeds from the sale of its common stock and the underwriters' exercise to purchase additional shares as part of the initial public offering ("IPO"), net of underwriting discounts and commissions, financing fees and other offering related expenses.
(5) See Note 17 regarding our quarterly cash dividend.
(6) Reflected within "Current assets of discontinued operations" on the consolidated balance sheets.

Cash paid for interest, net of capitalized interest was $140.9 million, $133.4 million and $98.8 million, and income taxes paid, net of refunds was $130.9 million, $135.3 million and $33.3 million in December 31, 2019, 2018 and 2017, respectively. Net interest payments of zero and $16.6 million and tax payments, net of refunds of $10.0 million and $11.0 million were allocated to discontinued operations for the years ended December 31, 2018 and 2017, respectively. Accrued additions to property, plant and equipment and other assets at December 31, 2019, 2018 and 2017 were $18.2 million, $3.1 million and $6.1 million, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

FMC CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

	FMC Stockholders' Equity						
(in Millions, Except Per Share Data)	Common Stock, $0.10 Par Value	Capital In Excess of Par	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Non-controlling Interest	Total Equity
Balance December 31, 2016	**$ 18.6**	**$ 418.6**	**$ 3,505.5**	**$ (478.4)**	**$ (1,506.6)**	**$ 35.3**	**$ 1,993.0**
Net income (loss)			535.8			2.6	538.4
Stock compensation plans		33.0			9.6		42.6
Shares for benefit plan trust					(0.2)		(0.2)
Net pension and other benefit actuarial gains (losses) and prior service cost, net of income tax				52.2			52.2
Net hedging gains (losses) and other, net of income tax				(1.9)			(1.9)
Foreign currency translation adjustments				187.8		(1.2)	186.6
Dividends ($0.66 per share)			(88.9)				(88.9)
Repurchases of common stock					(2.4)		(2.4)
Noncontrolling interests associated with an acquisition (1)						12.7	12.7
Transactions with noncontrolling interests (1)		(0.9)				(24.1)	(25.0)
Balance December 31, 2017	**$ 18.6**	**$ 450.7**	**$ 3,952.4**	**$ (240.3)**	**$ (1,499.6)**	**$ 25.3**	**$ 2,707.1**
Net income (loss)			502.1			9.4	511.5
Stock compensation plans		26.5			7.2		33.7
Shares for benefit plan trust					0.1		0.1
Net pension and other benefit actuarial gains (losses) and prior service cost, net of income tax				20.7			20.7
Net hedging gains (losses) and other, net of income tax				6.0			6.0
Foreign currency translation adjustments				(95.3)		(5.5)	(100.8)
Dividends ($0.90 per share)			(120.2)				(120.2)
Repurchases of common stock					(206.8)		(206.8)
Transactions with noncontrolling interests (1)(2)		299.0				60.1	359.1
Balance December 31, 2018	**$ 18.6**	**$ 776.2**	**$ 4,334.3**	**$ (308.9)**	**$ (1,699.1)**	**$ 89.3**	**$ 3,210.4**
Adoption of accounting standards (Note 2)			55.5	(53.1)			2.4
Net income (loss)			477.4			2.8	480.2
Stock compensation plans		53.5			21.6		75.1
Shares for benefit plan trust					(1.0)		(1.0)
Net pension and other benefit actuarial gains (losses) and prior service cost, net of income tax				3.4			3.4
Net hedging gains (losses) and other, net of income tax				(77.2)			(77.2)
Foreign currency translation adjustments				(15.2)		(3.3)	(18.5)
Dividends ($1.64 per share)			(214.1)				(214.1)
Repurchases of common stock					(414.3)		(414.3)
Distribution of FMC Lithium (3)			(464.3)	39.0		(59.7)	(485.0)
Balance December 31, 2019	**$ 18.6**	**$ 829.7**	**$ 4,188.8**	**$ (412.0)**	**$ (2,092.8)**	**$ 29.1**	**$ 2,561.4**

(1) See Notes 5 and 17 for more detail on the acquisitions of noncontrolling interest and transactions with noncontrolling interest, respectively.
(2) Primarily represents the noncontrolling interest of our FMC Lithium as a result of the IPO. Refer to Note 1 for further information.
(3) Represents the effects of the distribution of FMC Lithium. Refer to Note 1 for further information.

The accompanying notes are an integral part of these consolidated financial statements.

Note 1: Principal Accounting Policies and Related Financial Information

Nature of operations. We are an agricultural sciences company providing innovative solutions to growers around the world with a robust product portfolio fueled by a market-driven discovery and development pipeline in crop protection, plant health, and professional pest and turf management. We operate in a single distinct business segment and develop, market and sell all three major classes of crop protection chemicals: insecticides, herbicides and fungicides. These products are used in agriculture to enhance crop yield and quality by controlling a broad spectrum of insects, weeds and disease, as well as in non-agricultural markets for pest control.

In March 2017, we announced our intention to separate our FMC Lithium segment (subsequently renamed Livent Corporation, or "Livent") into a publicly traded company. The initial step of the separation, the initial public offering ("IPO") of Livent, closed on October 15, 2018. In connection with the IPO, Livent had granted the underwriters an option to purchase additional shares of common stock to cover over-allotments at the IPO price, less the underwriting discount. On November 8, 2018, the underwriters exercised in full their option to purchase additional shares. After completion of the IPO and the underwriters' exercise to purchase additional shares of common stock, FMC owned 123 million shares of Livent's common stock, representing approximately 84 percent of the total outstanding shares of Livent's common stock. On March 1, 2019, we completed the previously announced distribution of 123 million shares of common stock of Livent as a pro rata dividend on shares of FMC common stock outstanding at the close of business on the record date of February 25, 2019. We have recast all the data within this filing to present FMC Lithium as a discontinued operation retrospectively for all periods presented.

The financial information contained in our as filed 2018 Form 10-K was retrospectively adjusted due to the classification of FMC Lithium as a discontinued operation in our Form 8-K filed on August 2, 2019. All references herein to our “2018 Form 10-K” refer to the as filed 2018 Form 10-K, as retrospectively adjusted pursuant to our Form 8-K filed on August 2, 2019.

Basis of consolidation and basis of presentation. The accompanying consolidated financial statements of FMC Corporation and its subsidiaries were prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Our consolidated financial statements include the accounts of FMC and all entities that we directly or indirectly control. All significant intercompany accounts and transactions are eliminated in consolidation.

Estimates and assumptions. In preparing the financial statements in conformity with U.S. GAAP we are required to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results are likely to differ from those estimates, but we do not believe such differences will materially affect our financial position, results of operations or cash flows.

Cash equivalents. We consider investments in all liquid debt instruments with original maturities of 3 months or less to be cash equivalents.

Trade receivables, net of allowance. Trade receivables consist of amounts owed to us from customer sales and are recorded when revenue is recognized. The allowance for trade receivables represents our best estimate of the probable losses associated with potential customer defaults. In developing our allowance for trade receivables, we use a two-stage process which includes calculating a general formula to develop an allowance to appropriately address the uncertainty surrounding collection risk of our entire portfolio and specific allowances for customers where the risk of collection has been reasonably identified either due to liquidity constraints or disputes over contractual terms and conditions.

Our method of calculating the general formula consists of estimating the recoverability of trade receivables based on historical experience, current collection trends, and external business factors such as economic factors, including regional bankruptcy rates, and political factors. Our analysis of trade receivable collection risk is performed quarterly, and the allowance is adjusted accordingly.

We also hold long-term receivables that represent long-term customer receivable balances related to past-due accounts which are not expected to be collected within the current year. Our policy for the review of the allowance for these receivables is consistent with the discussion in the preceding paragraph above on trade receivables. Therefore on an ongoing basis, we continue to evaluate the credit quality of our long-term receivables utilizing aging of receivables, collection experience and write-offs, as well as existing economic conditions, to determine if an additional allowance is necessary.

The allowance for trade receivables was $26.3 million and $22.4 million as of December 31, 2019 and 2018, respectively. The allowance for long-term receivables was $61.1 million and $60.5 million at December 31, 2019 and 2018, respectively. The provision to the allowance for receivables charged against operations was $21.2 million, $71.4 million and $22.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. See Note 10 for more information. The provision in 2018 includes the effects of the stranded accounts receivables written off as part of the restructuring in India.

Investments. Investments in companies in which our ownership interest is 50 percent or less and in which we exercise significant influence over operating and financial policies are accounted for using the equity method. Under the equity method, original investments are recorded at cost and adjusted by our share of undistributed earnings and losses of these investments. Majority owned investments in which our control is restricted are also accounted for using the equity method. All other investments are carried at their fair values or at cost, as appropriate. We are party to several joint venture investments throughout the world, which individually and in the aggregate are not significant to our financial results.

Inventories. Inventories are stated at the lower of cost or market value. Inventory costs include those costs directly attributable to products before sale, including all manufacturing overhead but excluding distribution costs. All domestic inventories, excluding materials and supplies, are determined on a last-in, first-out (“LIFO”) basis and our remaining inventories are recorded on either a first-in, first-out (“FIFO”) basis or average cost. See Note 7 for more information.

Property, plant and equipment. We record property, plant and equipment, including capitalized interest, at cost. We recognize acquired property, plant and equipment, from acquisitions at its estimated fair value. Depreciation is provided principally on the straight-line basis over the estimated useful lives of the assets (land improvements — 20 years, buildings — 20 to 40 years, and machinery and equipment — three to 18 years). Gains and losses are reflected in income upon sale or retirement of assets. Expenditures that extend the useful lives of property, plant and equipment or increase productivity are capitalized. Ordinary repairs and maintenance are expensed as incurred through operating expense.

Capitalized interest. We capitalized interest costs of $4.7 million in 2019, $4.1 million in 2018 and $1.6 million in 2017. These costs were primarily associated with the construction of certain long-lived assets and have been capitalized as part of the cost of those assets. We amortize capitalized interest over the assets’ estimated useful lives.

Impairments of long-lived assets. We review the recovery of the net book value of long-lived assets whenever events and circumstances indicate that the net book value of an asset may not be recoverable from the estimated undiscounted future cash flows expected to result from its use and eventual disposition. In cases where undiscounted expected future cash flows are less than the net book value, we recognize an impairment loss equal to an amount by which the net book value exceeds the fair value of the asset. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less cost to sell.

Asset retirement obligations. We record asset retirement obligations (“AROs”) at fair value at the time the liability is incurred if we can reasonably estimate the settlement date. The associated AROs are capitalized as part of the carrying amount of related long-lived assets. In future periods, the liability is accreted to its present value and the capitalized cost is depreciated over the useful life of the related asset. We also adjust the liability for changes resulting from the passage of time and/or revisions to the timing or the amount of the original estimate. Upon retirement of the long-lived asset, we either settle the obligation for its recorded amount or incur a gain or loss.

We have obligations at the majority of our manufacturing facilities in the event of permanent plant shutdown. Certain of these obligations are recorded in our environmental reserves described in Note 12. For certain AROs not already accrued, we have calculated the fair value of these AROs and concluded that the present value of these obligations was inconsequential at December 31, 2019 and 2018.

The carrying amounts for the AROs for the years ended December 31, 2019 and 2018 are $35.7 million and $2.6 million, respectively. These amounts are included in "Accrued and other liabilities" and "Other long-term liabilities" on the consolidated balance sheet. During 2019, we recorded a charge to recognize the acceleration of asset retirement obligations associated with our decision to exit sales of all carbofuran formulations (including Furadan® insecticide/nematicide, Curaterr® insecticide/nematicide and any other brands used with carbofuran products) globally effective December 31, 2019. Refer to Note 9 for more information.

Restructuring and other charges. We continually perform strategic reviews and assess the return on our business. This sometimes results in a plan to restructure the operations of our business. We record an accrual for severance and other exit costs under the provisions of the relevant accounting guidance.

Additionally, as part of these restructuring plans, write-downs of long-lived assets may occur. Two types of assets are impacted: assets to be disposed of by sale and assets to be abandoned. Assets to be disposed of by sale are measured at the lower of carrying amount or estimated net proceeds from the sale. Assets to be abandoned with no remaining future service potential are written down to amounts expected to be recovered. The useful life of assets to be abandoned that have a remaining future service potential are adjusted and depreciation is recorded over the adjusted useful life.

Capitalized software. We capitalize the costs of internal use software in accordance with accounting literature which generally requires the capitalization of certain costs incurred to develop or obtain internal use software. We assess the recoverability of capitalized software costs on an ongoing basis and record write-downs to fair value as necessary. We amortize capitalized software costs over expected useful lives ranging from three to 10 years. See Note 22 for the net unamortized computer software balances.

Goodwill and intangible assets. Goodwill and other indefinite life intangible assets are not subject to amortization. Instead, they are subject to at least an annual assessment for impairment by applying a fair value-based test.

We test goodwill and indefinite life intangibles for impairment annually using the criteria prescribed by U.S. GAAP accounting guidance for goodwill and other intangible assets. Based upon our annual impairment assessments conducted in 2019, 2018 and 2017, we did not record any goodwill impairments. In 2017, we recorded a $42.1 million impairment charge to write down certain indefinite-lived intangible assets of the acquired DuPont Crop Protection Business as a result of the Tax Cuts and Jobs Act (“the Act”) passed in the fourth quarter of 2017.

Finite-lived intangible assets consist of primarily customer relationships as well as patents, brands, registration rights, industry licenses, and other intangibles and are generally being amortized over periods of approximately three to 20 years. See Note 6 for additional information on goodwill and intangible assets.

Revenue recognition. We recognize revenue when (or as) we satisfy our performance obligation which is when the customer obtains control of the good or service. Rebates due to customers are accrued as a reduction of revenue in the same period that the related sales are recorded based on the contract terms. Refer to Note 3.

We record amounts billed for shipping and handling fees as revenue. Costs incurred for shipping and handling are recorded as costs of sales and services. Amounts billed for sales and use taxes, value-added taxes, and certain excise and other specific transactional taxes imposed on revenue-producing transactions are presented on a net basis and excluded from sales in the consolidated income statements. We record a liability until remitted to the respective taxing authority.

We periodically enter into prepayment arrangements with customers and receive advance payments for product to be delivered in future periods. These advance payments are recorded as deferred revenue and classified as “Advance payments from customers” on the consolidated balance sheet. Revenue associated with advance payments is recognized as shipments are made and transfer of control to the customer takes place.

Research and development. Research and development costs are expensed as incurred. In-process research and development acquired as part of asset acquisitions, which include license and development agreements, are expensed as incurred and included as a component of “Restructuring and other charges (income)" on the consolidated statements of income (loss).

Income and other taxes. We provide current income taxes on income reported for financial statement purposes adjusted for transactions that do not enter into the computation of income taxes payable. We recognize deferred tax liabilities and assets for the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities. We have not provided income taxes for other outside basis differences inherent in our investments in subsidiaries because the investments and related unremitted earnings are essentially permanent in duration or we have concluded that no additional tax liability will arise upon disposal or remittance.

Foreign currency. We translate the assets and liabilities of our foreign operations at exchange rates in effect at the balance sheet date. For foreign operations for which the functional currency is not the U.S. dollar we record translation gains and losses as a component of accumulated other comprehensive income (loss) in equity. The foreign operations' income statements are translated at the monthly exchange rates for the period.

We record remeasurement gains and losses on monetary assets and liabilities, such as accounts receivables and payables, which are not in the functional currency of the operation. These remeasurement gains and losses are recorded in income as they occur. We generally enter into foreign currency contracts to mitigate the financial risk associated with these transactions. See “Derivative financial instruments” below and Note 19.

Derivative financial instruments. We mitigate certain financial exposures, including currency risk, interest rate risk and commodity price exposures, through a controlled program of risk management that includes the use of derivative financial instruments. We enter into foreign exchange contracts, including forward and purchased option contracts, to reduce the effects of fluctuating foreign currency exchange rates.

We recognize all derivatives on the balance sheet at fair value. On the date the derivative instrument is entered into, we generally designate the derivative as either a hedge of the variability of cash flows to be received or paid related to a forecasted transaction (cash flow hedge) or a hedge of the fair value of a recognized asset or liability or of an unrecognized firm commitment (fair value hedge). We record in accumulated other comprehensive income (loss) changes in the fair value of derivatives that are designated as, and meet all the required criteria for, a cash flow hedge. We then reclassify these amounts into earnings as the underlying hedged item affects earnings. We record immediately in earnings changes in the fair value of derivatives that are not designated as cash flow hedges.

We formally document all relationships between hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions. This process includes relating derivatives that are designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific firm commitments or forecasted transactions. We also formally assess, both at the inception of the hedge and throughout its term, whether each derivative is highly effective in offsetting changes in fair value or cash flows of the hedged item. If we determine that a derivative is not highly effective as a hedge, or if a derivative ceases to be a highly effective hedge, we discontinue hedge accounting with respect to that derivative prospectively.

Treasury stock. We record shares of common stock repurchased at cost as treasury stock, resulting in a reduction of stockholders’ equity in the consolidated balance sheets. When the treasury shares are contributed under our employee benefit plans or issued for option exercises, we use a FIFO method for determining cost. The difference between the cost of the shares and the market price at the time of contribution to an employee benefit plan is added to or deducted from the related capital in excess of par value of common stock.

Segment information. As a result of the FMC Lithium separation, we now operate as a single business segment providing innovative solutions to growers around the world with a robust product portfolio fueled by a market-driven discovery and development pipeline in crop protection, plant health, and professional pest and turf management. The business is supported by global corporate staff functions. The determination of a single segment is consistent with the financial information regularly reviewed by the chief executive officer for purposes of evaluating performance, allocating resources, setting incentive compensation targets and both planning and forecasting future periods. Refer to Note 3 for further information on product and regional revenues.

Geographic long-lived assets include goodwill and other intangibles, net, property, plant and equipment, net and other non-current assets. Refer to Note 21.

Stock compensation plans. We recognize compensation expense in the financial statements for all share options and other equity-based arrangements. Share-based compensation cost is measured at the date of grant, based on the fair value of the award, and is recognized over the employee’s requisite service period. See Note 16 for further discussion on our share-based compensation.

Environmental obligations. We provide for environmental-related obligations when they are probable and amounts can be reasonably estimated. Where the available information is sufficient to estimate the amount of liability, that estimate has been used. Where the information is only sufficient to establish a range of probable liability and no point within the range is more likely than any other, the lower end of the range has been used.

Estimated obligations to remediate sites that involve oversight by the United States Environmental Protection Agency (“EPA”), or similar government agencies, are generally accrued no later than when a Record of Decision (“ROD”), or equivalent, is issued, or upon completion of a Remedial Investigation/Feasibility Study (“RI/FS”), or equivalent, that is submitted by us and the appropriate government agency or agencies. Estimates are reviewed quarterly and, if necessary, adjusted as additional information becomes available. The estimates can change substantially as additional information becomes available regarding the nature or extent of site contamination, required remediation methods, and other actions by or against governmental agencies or private parties.

Our environmental liabilities for continuing and discontinued operations are principally for costs associated with the remediation and/or study of sites at which we are alleged to have released hazardous substances into the environment. Such costs principally include, among other items, RI/FS, site remediation, costs of operation and maintenance of the remediation plan, management costs, fees to outside law firms and consultants for work related to the environmental effort, and future monitoring costs. Estimated site liabilities are determined based upon existing remediation laws and technologies, specific site consultants' engineering studies or by extrapolating experience with environmental issues at comparable sites.

Included in our environmental liabilities are costs for the operation, maintenance and monitoring ("OM&M") of site remediation plans. Such reserves are based on our best estimates for these OM&M plans. Over time we may incur OM&M costs in excess of these reserves. However, we are unable to reasonably estimate an amount in excess of our recorded reserves because we cannot reasonably estimate the period for which such OM&M plans will need to be in place or the future annual cost of such remediation, as conditions at these environmental sites change over time. Such additional OM&M costs could be significant in total but would be incurred over an extended period of years.

Included in the environmental reserve balance, other assets balance and disclosure of reasonably possible loss contingencies are amounts from third party insurance policies which we believe are probable of recovery.

Provisions for environmental costs are reflected in income, net of probable and estimable recoveries from named Potentially Responsible Parties ("PRPs") or other third parties. In the fourth quarter of 2019, we increased our reserves for the Pocatello Tribal Matter by $72.8 million, which represents both the historical and discounted present value of future annual use permit fees as well as the associated legal costs. See Note 12 for further information. All other environmental provisions incorporate inflation and are not discounted to their present value.

In calculating and evaluating the adequacy of our environmental reserves, we have taken into account the joint and several liability imposed by Comprehensive Environmental Remediation, Compensation and Liability Act ("CERCLA") and the analogous state laws on all PRPs and have considered the identity and financial condition of the other PRPs at each site to the extent possible. We have also considered the identity and financial condition of other third parties from whom recovery is anticipated, as well as the status of our claims against such parties. Although we are unable to forecast the ultimate contributions of PRPs and other third parties with absolute certainty, the degree of uncertainty with respect to each party is taken into account when determining the environmental reserve on a site-by-site basis. Our liability includes our best estimate of the costs expected to be paid before the consideration of any potential recoveries from third parties. We believe that any recorded recoveries related to PRPs are realizable in all material respects. Recoveries are recorded as either an offset in "Environmental liabilities, continuing and discontinued" or as "Other assets including long-term receivables, net" in our consolidated balance sheets in accordance with U.S. accounting literature.

Pension and other postretirement benefits. We provide qualified and nonqualified defined benefit and defined contribution pension plans, as well as postretirement health care and life insurance benefit plans to our employees and retirees. The costs (or benefits) and obligations related to these benefits reflect key assumptions related to general economic conditions, including interest (discount) rates, healthcare cost trend rates, expected rates of return on plan assets and the rates of compensation increase for employees. The costs (or benefits) and obligations for these benefit programs are also affected by other assumptions, such as average retirement age, mortality, employee turnover, and plan participation. To the extent our plans' actual experience, as influenced by changing economic and financial market conditions or by changes to our own plans' demographics, differs from these assumptions, the costs and obligations for providing these benefits, as well as the plans' funding requirements, could increase or decrease. When actual results differ from our assumptions, the difference is typically recognized over future periods. In addition, the unrealized gains and losses related to our pension and postretirement benefit obligations may also affect periodic benefit costs (or benefits) in future periods. See Note 15 for additional information relating to pension and other postretirement benefits.

Note 2: Recently Issued and Adopted Accounting Pronouncements and Regulatory Items

New accounting guidance and regulatory items

In December 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.* The amendments in this ASU simplify the accounting for income taxes by removing certain exceptions and simplification in several other areas. The new standard is effective for fiscal years beginning after December 15, 2020 (i.e., a January 1, 2021 effective date). We are evaluating the effect this guidance will have on our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, *Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.* The amendments in this ASU align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The new standard is effective for fiscal years beginning after December 15, 2019 (i.e., a January 1, 2020 effective date). We believe the adoption will not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-14, *Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*. The amendments in this ASU modify the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The new standard is effective for fiscal years ending after December 15, 2020. We are evaluating the disclosure impacts this guidance will have on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*. This ASU changes the subsequent measurement of goodwill impairment by eliminating Step 2 from the impairment test. Under the new guidance, an entity will measure impairment using the difference between the carrying amount and the fair value of the reporting unit. The new standard is effective for fiscal years beginning after December 15, 2019 (i.e., a January 1, 2020 effective date), with early adoption permitted for goodwill impairment tests with measurement dates after January 1, 2017. We believe the adoption will not have a material impact on our consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). ASU 2016-13 replaces the incurred loss impairment methodology with a methodology that reflects expected credit losses. The update is intended to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. The new standard is effective for fiscal years beginning after December 15, 2019 (i.e., a January 1, 2020 effective date), with early adoption permitted for fiscal years beginning after December 15, 2018. We believe the adoption will not have a material impact on our consolidated financial statements.

Recently adopted accounting guidance

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. This new standard permits a company to reclassify the income tax effects of the change in the U.S federal corporate income tax rate on the gross deferred tax amounts and related valuation allowances as well as other income tax effects related to the application of the Tax Cuts and Jobs Act (the "Act") within accumulated other comprehensive income ("AOCI") to retained earnings. The new standard also requires certain disclosures about stranded tax effects. The new standard is effective for fiscal years beginning after December 15, 2018 (i.e., a January 1, 2019 effective date), and interim periods within those fiscal years, with early adoption permitted. We adopted this standard prospectively as of January 1, 2019 and reclassified $53.1 million of the stranded income tax effects from accumulated other comprehensive income (loss) to retained earnings. The reclassification was related to the change in the U.S. federal corporate tax rate and the effect of the Act on our pension plans and derivative instruments. This reclassification is reflected within the consolidated statements of changes in equity for the current period.

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*. This ASU amends and simplifies existing hedge accounting guidance and allows for more hedging strategies to be eligible for hedge accounting. In addition, the ASU amends disclosure requirements and how hedge effectiveness is assessed. The presentation and disclosure guidance is required to be adopted prospectively. The new standard is effective for fiscal years beginning after December 15, 2018 (i.e., a January 1, 2019 effective date), with early adoption permitted in any interim period after issuance of this ASU. We adopted this standard as of January 1, 2019. There was no material impact to our consolidated financial statements upon adoption.

In February 2016, the FASB issued its new lease accounting guidance in ASU No. 2016-02, *Leases (Topic 842)* ("ASC 842"). Under the new guidance, lessees will be required to recognize for all leases (with the exception of short-term leases) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis and a right-of-use ("ROU") asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. The new standard, including related amendments, is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years (i.e., a January 1, 2019 effective date). In adopting this standard, we performed a detailed review of contracts of our business and assessed the terms under ASC 842. Additionally, we assessed potential impacts on our internal controls and processes related to both the implementation and ongoing compliance of the new guidance.

We have adopted this standard as of January 1, 2019 utilizing a modified retrospective approach and have elected the transition practical expedient package. Under this transition practical expedient package, ASC 842 was only applied to contracts that existed as of, or were entered into on or after, January 1, 2019, and a cumulative effect adjustment was made as of January 1, 2019. All comparative periods prior to January 1, 2019 will retain the financial reporting and disclosure requirements of ASC 840. The adoption of ASC 842 had a material impact on our consolidated balance sheet but did not have a material impact on the consolidated statement of income (loss), consolidated statement of comprehensive income (loss), consolidated statement of cash flows, or consolidated statement of changes in equity. As a result of adoption, we recorded additional ROU lease assets and lease liabilities of $185.3 million and $215.9 million, respectively. ROU lease assets includes a reclassification of $30.6 million of prepaid rent, accrued rent, and lease incentives previously recorded under ASC 840. Additionally, we recorded a retained earnings impact of $2.4 million as of January 1, 2019. Refer to Note 4 for further information.

The expedient package allowed us not to reassess whether existing contracts contain a lease under the new definition of a lease, the lease classification of existing leases, and initial direct cost for existing leases including whether such costs would qualify for capitalization under the standard. Additionally, we elected the practical expedient to not separate non-lease components from lease components. In addition to these practical expedients, we elected the following exemption permissible under ASC 842: the exclusion of leases with terms 12 months or less that do not have a purchase option or extension that is reasonably certain to exercise.

The adoption of ASC 842 required adjustments to record our initial ROU asset and lease liability on the balance sheet. The initial right of use asset and lease liability are presented on a discounted basis by our incremental borrowing rate at transition.

Note 3: Revenue Recognition

Disaggregation of revenue

We disaggregate revenue from contracts with customers by geographical areas and major product categories. We have three major agricultural pesticide product categories: insecticides, herbicides, and fungicides. The disaggregated revenue tables are shown below for the years ended December 31, 2019 and 2018.

The following table provides information about disaggregated revenue by major geographical region:

	Year Ended December 31,	
(in Millions)	**2019**	**2018**
North America [(1)]	$ 1,121.1	$ 1,090.8
Latin America [(1)]	1,441.7	1,210.1
Europe, Middle East & Africa	1,001.8	966.0
Asia	1,045.2	1,018.4
Total Revenue	**$ 4,609.8**	**$ 4,285.3**

(1) Countries with sales in excess of 10 percent of consolidated revenue consisted of the U.S. and Brazil. Sales for the years ended December 31, 2019 and 2018 for the U.S. totaled $1,044.1 million and $991.8 million, respectively, and for Brazil totaled $1,094.1 million and $913.7 million, respectively.

The following table provides information about disaggregated revenue by major product category:

	Year Ended December 31,	
(in Millions)	2019	2018
Insecticides	$ 2,773.6	$ 2,476.5
Herbicides	1,228.8	1,251.2
Fungicides	271.4	268.7
Other	336.0	288.9
Total Revenue	**$ 4,609.8**	**$ 4,285.3**

We earn revenue from the sale of a wide range of products to a diversified base of customers around the world. Our portfolio is comprised of three major pesticide categories: insecticides, herbicides and fungicides. These products are used in agriculture to enhance crop yield and quality by controlling a broad spectrum of insects, weeds and disease, as well as in non-agricultural markets for pest control. The majority of our product lines consist of insecticides and herbicides, with a smaller portfolio of fungicides mainly used in high value crop segments. Our insecticides are used to control a wide spectrum of pests, while our herbicide portfolio primarily targets a large variety of difficult-to-control weeds. Products in the other category include various agricultural products such as smaller classes of pesticides, growth promoters, and soil enhancements.

Sale of Goods

Revenue from product sales is recognized when (or as) we satisfy a performance obligation by transferring the promised goods to a customer, that is, when control of the good transfers to the customer. The customer is then invoiced at the agreed-upon price with payment terms generally ranging from 30 to 90 days, with some regions providing terms longer than 90 days. We do not typically give payment terms that exceed 360 days; however, in certain geographical regions such as Latin America, these extended terms may be given in limited circumstances. Additionally, a timing difference of over one year can exist between when products are delivered to the customer and when payment is received from the customer in these regions; however, the effect of these sales is not material to the financial statements as a whole. Furthermore, we have assessed the circumstances and arrangements in these regions and determined that the contracts with these customers do not contain a significant financing component.

In determining when the control of goods is transferred, we typically assess, among other things, the transfer of risk and title and the shipping terms of the contract. The transfer of title and risk typically occurs either upon shipment to the customer or upon receipt by the customer. As such, we typically recognize revenue when goods are shipped based on the relevant Incoterm for the product order, or in some regions, when delivery to the customer's requested destination has occurred. When we perform shipping and handling activities after the transfer of control to the customer (e.g., when control transfers prior to delivery), they are considered as fulfillment activities, and accordingly, the costs are accrued for when the related revenue is recognized. For FOB shipping point terms, revenue is recognized at the time of shipment since the customer gains control at this point in time.

We record amounts billed for shipping and handling fees as revenue. Costs incurred for shipping and handling are recorded as costs of sales and services. Amounts billed for sales and use taxes, value-added taxes, and certain excise and other specific transactional taxes imposed on revenue-producing transactions are presented on a net basis and excluded from sales in the consolidated income statements. We record a liability until remitted to the respective taxing authority.

Sales Incentives and Other Variable Considerations

As a part of our customary business practice, we offer a number of sales incentives to our customers including volume discounts, retailer incentives, and prepayment options. The variable considerations given can differ by products, support levels and other eligibility criteria. For all such contracts that include any variable consideration, we estimate the amount of variable consideration that should be included in the transaction price utilizing either the expected value method or the most likely amount method depending on the nature of the variable consideration. Variable consideration is included in the transaction price if, in our judgment, it is probable that a significant future reversal of cumulative revenue under the contract will not occur. Although determining the transaction price for these considerations requires significant judgment, we have significant historical experience with incentives provided to customers and estimate the expected consideration considering historical patterns of incentive payouts. These estimates are reassessed each reporting period as required.

In addition to the variable considerations describe above, in certain instances, we may require our customers to meet certain volume thresholds within their contract term. We estimate what amount of variable consideration should be included in the transaction price at contract inception and continually reassess this estimation each reporting period to determine situations when the minimum volume thresholds will not be met. Variable consideration is included in the transaction price if, in our judgment, it is probable that a significant future reversal of cumulative revenue under the contract will not occur.

Right of Return

We extend an assurance warranty offering customers a right of refund or exchange in case the delivered product does not conform to specifications. Additionally, in certain regions and arrangements, we may offer a right of return for a specified period. Both instances are accounted for as a right of return and transaction price is adjusted for an estimate of expected returns. Replacement products are accounted for under the warranty guidance if the customer exchanges one product for another of the same kind, quality, and price. We have significant experience with historical return patterns and use this experience to include returns in the estimate of transaction price.

Contract asset and contract liability balances

We satisfy our obligations by transferring goods and services in exchange for consideration from customers. The timing of performance sometimes differs from the timing the associated consideration is received from the customer, thus resulting in the recognition of a contract asset or contract liability. We recognize a contract liability if the customer's payment of consideration is received prior to completion of our related performance obligation.

The following table presents the opening and closing balances of our receivables (net of allowances) and contract liabilities from contracts with customers.

(in Millions)	Balance as of December 31, 2018	Balance as of December 31, 2019	Increase (Decrease)
Receivables from contracts with customers, net of allowances	$ 2,228.3	$ 2,354.3	$ 126.0
Contract liabilities: Advance payments from customers	458.4	492.7	34.3

The amount of revenue recognized in the year ended December 31, 2019 that was included in the opening contract liability balance was $458.4 million.

The balance of receivables from contracts with customers listed in the table above include both current trade receivables and long-term receivables, net of allowance for doubtful accounts. The allowance for receivables represents our best estimate of the probable losses associated with potential customer defaults. We determine the allowance based on historical experience, current collection trends, and external business factors such as economic factors, including regional bankruptcy rates, and political factors. The change in allowance for doubtful accounts for both current trade receivables and long-term receivables is representative of the impairment of receivables as of December 31, 2019. Refer to Note 10 for further information.

We periodically enter into prepayment arrangements with customers and receive advance payments for product to be delivered in future periods. Prepayment terms are extended to customers/distributors in order to capitalize on surplus cash with growers. Growers receive bulk payments for their produce, which they leverage to buy our products from distributors through prepayment options. This in turn creates opportunity for distributors to make large prepayments to us for securing the future supply of products to be sold to growers. Prepayments are typically received in the fourth quarter of the fiscal year, primarily in North America, and are for the following marketing year indicating that the time difference between prepayment and performance of corresponding performance obligations does not exceed one year. We recognize these prepayments as a liability under “Advance Payments from customers” on the consolidated balance sheets when they are received. Revenue associated with advance payments is recognized as shipments are made and transfer of control to the customer takes place. Advance payments from customers was $458.4 million as of December 31, 2018 and $492.7 million as of December 31, 2019.

Performance obligations

At contract inception, we assess the goods and services promised in our contracts with customers and identify a performance obligation for each promise to transfer a good or service (or bundle of goods or services) that is distinct. To identify the performance obligations, we consider all the goods or services promised in the contract, whether explicitly stated or implied based on customary business practices. Based on our evaluation, we have determined that our current contracts do not contain more than one performance obligation. Revenue is recognized when (or as) the performance obligation is satisfied, which is when the customer obtains control of the good or service.

Periodically, we may enter into contracts with customers which require them to submit a forecast of non-binding purchase obligations to us. These forecasts are typically provided by the customer to us in good faith, and there are no penalties or obligations if the forecasts are not met. Accordingly, we have determined that these are optional purchases and do not represent material rights and are not considered as unsatisfied (or partially satisfied) performance obligations for the purposes of this disclosure.

In separate and less common circumstances, we may have contracts with customers which have binding purchase requirements for just one quarter of their annual forecasts. Additionally, as noted in the Contract Liabilities section above, we periodically enter into agricultural prepayment arrangements with customers, and receive advance payments for product to be delivered in future periods within one year. We have elected not to disclose the aggregate amount of the transaction price allocated to remaining performance obligations for these two types of contracts as they have an expected duration of one year or less and the revenue is expected to be recognized within the next year.

Other arrangements

Data Licensing

We sometimes grant to third parties a license and right to rely upon pesticide regulatory data filed with government agencies. Such licenses allow a licensee to cite and rely upon our data in connection with the licensee's application for pesticide registrations as required by law; these licenses can be granted through contract or through a mandatory statutory license, depending on circumstances. In the most common occurrence, when a license is embedded in a contract for supply of pesticide active ingredient from us to the licensee, the license grant is not considered as distinct from other promised goods or services. Accordingly, all promises are treated as a single performance obligation and revenue is recognized at a point when the control of the pesticide products is transferred to the licensee-customer. In the less frequent occurrence, when the license and right to use data is granted without a supply contract, we account for the revenue attributable to the data license as a performance obligation satisfied at a single point in time and recognize revenue on the effective date of such contract. Finally, in those circumstance of mandatory data licensing by statute, such as under U.S. pesticide law, we recognize the data compensation upon the effective date of the data compensation settlement agreement. Payment terms for these arrangements may vary by contract.

Service Arrangements

In limited cases, we engage in providing certain tolling services, such as filling and packing services using raw and packing materials supplied by the customer. However, as a result of the DuPont Crop Protection Business Acquisition, on November 1, 2017, we entered into an agreement with DuPont to provide tolling services to one another for up to five years from the acquisition date. Depending on the nature of the tolling services, we determine the appropriate method of satisfaction of the performance obligation, which may be the input or output method. Compared to other goods and services provided by us, service arrangements do not represent a significant portion of sales each year. Payment terms for service arrangements may vary by contract; however, payment is typically due within 30 days of the invoice date.

Practical Expedients and Exemptions

We have elected the following practical expedients following the adoption of ASC 606:

a. ***Costs of obtaining a contract:*** FMC incurs certain costs such as sales commissions which are incremental to obtaining the contract. We have taken the practical expedient of expensing such costs to obtain a contract, as and when they are incurred, as their expected amortization period is one year or less.

b. ***Significant financing component:*** We elected not to adjust the promised amount of consideration for the effects of a significant financing component if FMC expects, at contract inception, that the period between the transfer of a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

c. ***Remaining performance obligations:*** We elected not to disclose the aggregate amount of the transaction price allocated to remaining performance obligations for its contracts that are one year or less, as the revenue is expected to be recognized within one year. Additionally, we have elected not to disclose information about variable considerations for remaining, wholly unsatisfied performance obligations for which the criteria in paragraph 606-10-32-40 have been met.

d. ***Shipping and handling costs****:* We elected to account for shipping and handling activities that occur after the customer has obtained control of a good as fulfillment activities (i.e., an expense) rather than as a promised service.

e. ***Measurement of transaction price:*** We have elected to exclude from the measurement of transaction price all taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by us from a customer.

Note 4: Leases

We lease office space, vehicles and other equipment under non-cancellable leases with initial terms typically ranging from 1 to 20 years, with some leases having terms greater than 20 years. Our lease portfolio includes agreements with renewal options, purchase options and clauses for early termination based on the terms specific to the agreement.

At contract inception, we review the facts and circumstances of the arrangement to determine if the contract is a lease. We follow the guidance in ASC 842-10-15 and consider the following: whether the contract has an identified asset; if we have the right to obtain substantially all economic benefits from the asset; and if we have the right to direct the use of the underlying asset. When determining if a contract has an identified asset, we consider both explicit and implicit assets, and whether the supplier has the right to substitute the asset. When determining if we have the right to obtain substantially all economic benefits from the asset, we consider the primary outputs of the identified asset throughout the period of use and determine if we receive greater than 90 percent of those benefits. When determining if we have the right to direct the use of an underlying asset, we consider if we have the right to direct how and for what purpose the asset is used throughout the period of use and if we control the decision-making rights over the asset. All leased assets are classified as operating or finance under ASC 842. The lease term is determined as the non-cancellable period of the lease, together with all of the following: periods covered by an option to extend the lease which are reasonably certain to be exercised, periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option, and periods covered by an option to extend (or not to terminate) the lease in which exercise of the option is controlled by the lessor. At commencement, we assess whether any options included in the lease are reasonably certain to be exercised by considering all economic factors relevant including, contract-based, asset-based, market-based, and company-based factors.

To determine the present value of future minimum lease payments, we use the implicit rate when readily determinable or our incremental borrowing rate at the lease commencement date. When determining our incremental borrowing rate, we consider our centralized treasury function and our current credit profile. We then make adjustments to this rate for securitization, the length of the lease term, and leases denominated in foreign currencies. Minimum lease payments are expensed over the term of the lease on a straight-line basis. Some leases may require additional contingent or variable lease payments based on factors specific to the individual agreement. Variable lease payments for which we are typically responsible for include payment of vehicle insurance, real estate taxes, and maintenance expenses.

Most leases within our portfolio are classified as operating leases under the new standard. Operating leases are included in “Other assets including long-term receivables, net”, “Accrued and other liabilities”, and “Other long-term liabilities” in our condensed consolidated balance sheet. Operating lease right-of-use (“ROU”) assets are subsequently measured throughout the lease term at the carrying amount of the lease liability, plus initial direct costs, plus (minus) any prepaid (accrued) lease payments, less the unamortized balance of any lease incentives received. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

Operating leases relate to office spaces, IT equipment, transportation equipment, machinery equipment, furniture and fixtures, and plant and facilities under non-cancellable lease agreements. Leases primarily have fixed rental periods, with many of the real estate leases requiring additional payments for property taxes and occupancy-related costs. Leases for real estate typically have initial terms ranging from 1 to 20 years, with some leases having terms greater than 20 years. Leases for non-real estate (transportation, IT) typically have initial terms ranging from 1 to 10 years. We have elected not to record short-term leases on the balance sheet whose term is 12 months or less and does not include a purchase option or extension that is reasonably certain to be exercised.

We rent or sublease a small number of assets including equipment and office space to third party companies. These third-party arrangements include a small number of transition service arrangements from recent acquisitions. We also sublease a floor of our Corporate headquarters to our former subsidiary, Livent Corporation. Rental income from all subleases is not material to our business.

The ROU asset and lease liability balances as of December 31, 2019 were as follows:

(in Millions)	Classification	Balance at December 31, 2019
Assets		
Operating lease ROU assets	Other assets including long-term receivables, net	$ 164.7
Liabilities		
Operating lease current liabilities	Accrued and other liabilities	$ 31.5
Operating lease noncurrent liabilities	Other long-term liabilities	163.2

The components of lease expense for the year ended December 31, 2019 were as follows:

(in Millions)	Lease Cost Classification	2019
Operating lease cost	Costs of sales and services / Selling, general and administrative expenses	$ 41.3
Variable lease cost	Costs of sales and services / Selling, general and administrative expenses	5.2
Total lease cost		**$ 46.5**

	December 31, 2019
Operating Lease Term and Discount Rate	
Weighted-average remaining lease term (years)	9.9
Weighted-average discount rate	4.2 %

(in Millions)	Year ended December 31, 2019
Other Information	
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ (42.3)
Supplemental non-cash information on lease liabilities arising from obtaining right-of-use assets:	
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 15.7

The following table represents our future minimum operating lease payments as of, and subsequent to, December 31, 2019 under ASC 842:

(in Millions)	Operating Leases Total
Maturity of Lease Liabilities	
2020	$ 38.3
2021	28.3
2022	24.1
2023	19.0
2024	16.3
Thereafter	116.8
Total undiscounted lease payments	$ 242.8
Less: Present value adjustment	(48.1)
Present value of lease liabilities	**$ 194.7**

The tables below represent our future minimum lease payments as of December 31, 2018 and rent expense for operating leases under ASC 840.

	Future Minimum Lease Payments					
(in Millions)	2019	2020	2021	2022	2023	Thereafter
Operating Leases	$ 36.0	$ 31.1	$ 20.4	$ 17.1	$ 13.3	$ 107.1
Capital Lease	$ 2.9	$ 2.9	$ 3.1	$ 3.1	$ 3.1	$ 4.3

Our capital lease, which was related to our research and technology center in China, represented a financing obligation, and was derecognized as part of our transition to ASC 842. This lease was assessed under ASC 842 and determined to be an operating lease.

	Year ended December 31,			
(in Millions)	2018		2017	
Operating leases rent expense	$	40.0	$	26.1

Note 5: Acquisitions

DuPont Crop Protection Business

On November 1, 2017, pursuant to the terms and conditions set forth in the Transaction Agreement entered into with E. I. du Pont de Nemours and Company (“DuPont"), we completed the acquisition of certain assets relating to DuPont's Crop Protection business and research and development ("R&D") organization (the "DuPont Crop Protection Business") (collectively, the "DuPont Crop Protection Business Acquisition"). In connection with this transaction, we sold to DuPont our FMC Health and Nutrition segment and paid DuPont $1.2 billion in cash which was funded with the 2017 Term Loan Facility which was secured for the purposes of the Acquisition. The following table illustrates each component of the consideration paid as part of the DuPont Crop Protection Business Acquisition:

(in Millions)		
Cash purchase price, net	$	1,225.6
Cash proceeds from working capital and other adjustments		(21.5)
Fair value of FMC Health and Nutrition sold to DuPont		1,968.6
Total purchase consideration	**$**	**3,172.7**

The DuPont Crop Protection Business is being integrated into our business and has been included within our results of operations since the date of acquisition. Revenue and U.S. GAAP Income (loss) from continuing operations before income taxes attributable to the DuPont Crop Protection Business, since the date of acquisition, and for the twelve months ended December 31, 2017 was approximately $193.5 million and $27.6 million, respectively. The Income (loss) from continuing operations before income taxes attributable to the DuPont Crop Protection Business includes the inventory fair value step-up amortization recorded in "Cost of sales and services" on the consolidated statements of income (loss).

In connection with the DuPont Crop Protection Business Acquisition, we entered into a customary transitional services agreement with DuPont to provide for the orderly separation and transition of various functions and processes. These services will be provided by DuPont to us for up to 24 months after closing, with an optional six months extension, which has been exercised. These services include information technology services, accounting, human resource and facility services among other services, while we assume the operations of the DuPont Crop Protection Business.

As part of the DuPont Crop Protection Business Acquisition, we acquired various manufacturing contracts. The manufacturing contracts have been recognized as an asset or liability to the extent the terms of the contract are favorable or unfavorable compared with market terms of the same or similar items at the date of the acquisition.

We also entered into supply agreements with DuPont, with terms of up to five years, to supply technical insecticide products required for their retained seed treatment business at cost. The unfavorable liability is recorded within both "Accrued and other liabilities" and "Other long-term liabilities" on the consolidated balance sheets and is reduced and recognized to revenues within earnings as sales are made. The amount recognized in revenue for the years ended December 31, 2019, 2018, and 2017 was approximately $105 million, $92 million, and $2 million, respectively.

Certain manufacturing sites and R&D sites were transferred to us at a later date due to various local timing constraints; however, we obtained the economic benefit from these sites during the period from November 1, 2017 to when the sites legally transferred. No additional consideration was paid at the date of the transfers. All sites except for portions of one that did not transfer on November 1, 2017 legally transferred to us on July 1, 2018 and October 1, 2018. The remaining portion of one site transferred to us on February 1, 2020.

In the third quarter of 2017, both the European Commission and Competition Commission of India had conditionally approved our acquisition of certain assets of DuPont’s Crop Protection business. The DuPont Crop Protection Business Acquisition was conditioned upon us divesting the portfolio of products required by the respective regulatory bodies. These divestitures impacted annual 2018 operating profit by approximately $20 million. On February 1, 2018, we sold a portion of FMC's European herbicide Portfolio to Nufarm Limited and received proceeds of approximately $85 million plus $2 million of working capital. We recorded a gain on sale of approximately $85 million. This divestiture satisfied FMC's commitments to the European Commission related to the DuPont Crop Protection Business Acquisition. In December 2017, the Competition

Commission of India issued its final order describing the required Indian remedy. We received anti-trust approval from the Competition Commission of India on August 1, 2018 to complete the sale of the products to Crystal Crop Protection Limited in compliance with that final order. The sale closed on August 16, 2018 and satisfied our commitments to the Competition Commission of India related to the DuPont Crop Protection Business Acquisition. We recorded a gain of approximately $3 million.

Purchase Price Allocation

We applied acquisition accounting under the U.S. GAAP business combinations guidance. Acquisition accounting requires, among other things, that assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. The net assets of the DuPont Crop Protection Business Acquisition will be recorded at the estimated fair values using primarily Level 2 and Level 3 inputs (see Note 19 for an explanation of Level 2 and Level 3 inputs). In valuing acquired assets and assumed liabilities, valuation inputs include an estimate of future cash flows and discount rates based on the internal rate of return and the weighted average rate of return.

The purchase price allocation was considered complete in 2018. The allocation was subject to change within the measurement period (up to one year from the acquisition date) as additional information concerning final asset and liability valuations was obtained.

Any changes to the initial allocation are referred to as measurement-period adjustments. Measurement-period adjustments since our initial preliminary estimates reported in our 2017 10-K were primarily related to increases in the estimated fair values of intangible assets, deferred tax liabilities, and the unfavorable supply contract. The cumulative effect of all measurement-period adjustments resulted in an increase to recognized goodwill of approximately $283 million.

The following table summarizes the consideration paid for the DuPont Crop Protection Business and the amounts of the assets acquired and liabilities assumed as of the acquisition date.

Purchase Price Allocation

(in Millions)		
Trade receivables [1]	$	45.8
Inventories [2]		379.7
Other current assets		51.3
Property, plant & equipment		424.7
Intangible assets:		
Indefinite-lived brands		1,301.2
Customer relationships [3]		763.7
Goodwill [4]		974.7
Deferred tax assets		79.7
Other noncurrent assets		14.2
Total fair value of assets acquired	**$**	**4,035.0**
Accounts payable, trade and other [1]	$	32.9
Accrued and other current liabilities [5]		156.2
Accrued pension and other postretirement benefits, long-term		9.1
Environmental liabilities [6]		2.6
Deferred tax liabilities		196.0
Other long-term liabilities [5]		452.3
Total fair value of liabilities assumed	**$**	**849.1**
Total consideration paid	**$**	**3,185.9**
Less: Noncontrolling interest		(13.2)
Total consideration paid less noncontrolling interest	**$**	**3,172.7**

____
(1) Represents the accounts receivable and accounts payable of the legal entity stock sales as part of the DuPont Crop Protection Acquisition. As part of the Transaction Agreement, these balances will be settled subsequent to the closing date through reimbursement between FMC and DuPont. The offsetting amounts due from and due to DuPont were recorded within Other current assets and Accrued and other current liabilities.
(2) Fair value of finished goods inventory acquired included a step-up in the value of approximately $89.8 million, of which $69.6 million and $20.2 million was amortized during 2018 and 2017, respectively, and included in "Cost of sales and services" on the consolidated statements of income (loss).
(3) The weighted average useful life of the acquired customer relationships is approximately 20 years.
(4) Goodwill largely consists of expected cost synergies and economies of scale resulting from the business combination.
(5) Includes the short-term and long-term portions of the unfavorable supply contract with Dupont recorded in Accrued and other current liabilities and Other long-term liabilities, respectively.
(6) Represents both the short-term and long-term portion of the environmental obligations at certain sites of the acquired DuPont Crop Protection Business that is indemnified by DuPont as part of the Transaction Agreement. The indemnification asset was recorded within Other current assets and Other noncurrent assets.

Unaudited Pro Forma Financial Information

The following unaudited pro forma results of operations assume that the DuPont Crop Protection Business Acquisition occurred at the beginning of the periods presented. The pro forma amounts include certain adjustments, including interest expense on the borrowings used to complete the acquisition, depreciation and amortization expense and income taxes. The pro forma amounts below for the years ended December 31, 2017 exclude acquisition-related charges. The pro forma results do not include adjustments related to cost savings or other synergies that are anticipated as a result of the acquisition. Accordingly, these unaudited pro forma results are presented for informational purposes only and are not necessarily indicative of what the actual results of operations would have been if the acquisitions had occurred as of January 1, 2017, nor are they indicative of future results of operations.

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Pro forma Revenue [(1)]	$ 4,609.8	$ 4,285.3	$ 3,856.6
Pro forma Diluted earnings per share from continuing operations	4.10	3.91	2.25

____
(1) For the years ended December 31, 2019 and 2018, pro forma results and actual results are the same.

Transaction-related charges

Pursuant to U.S. GAAP, costs incurred associated with acquisition activities are expensed as incurred. Historically, these costs have primarily consisted of legal, accounting, consulting, and other professional advisory fees associated with the preparation and execution of these activities. Given the significance and complexity around the integration of the DuPont Crop Protection Business, we have incurred to date, and expect to incur, costs associated with integrating the DuPont Crop Protection Business, which includes planning for the exit of the transitional service agreement ("TSA") as well as implementation of a new worldwide Enterprise Resource Planning ("ERP") system as a result of the TSA exit, the majority of which will be capitalized in accordance with the relevant accounting literature. These costs have been, and are expected to be, significant and we anticipate the majority of these charges will be completed by the first half of 2020 which coincides with significant portions of the ERP system adoption and the TSA exit. The following table summarizes the costs incurred associated with these activities.

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
DuPont Crop Protection Business Acquisition			
Legal and professional fees [(1)]	$ 77.8	$ 86.9	$ 130.2
Inventory fair value amortization [(2)]	—	69.6	20.2
Total transaction-related charges	**$ 77.8**	**$ 156.5**	**$ 150.4**
Restructuring charges			
DuPont Crop restructuring	$ 26.4	$ 108.3	$ —
Total restructuring charges [(3)]	**$ 26.4**	**$ 108.3**	**$ —**

____

(1) Represents transaction costs, costs for transitional employees, other acquired employees related costs, and transactional-related costs such as legal and professional third-party fees. These charges are recorded as a component of “Selling, general and administrative expense" on the consolidated statements of income (loss).
(2) These charges are included in “Costs of sales and services” on the consolidated statements of income (loss).
(3) See Note 9 for more information. These charges are recorded as a component of “Restructuring and other charges (income)” on the consolidated statements of income (loss).

Note 6: Goodwill and Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2018 are presented in the table below:

(in Millions)	Total
Balance, December 31, 2017	**$ 1,198.9**
Foreign currency and other adjustments	(13.7)
Purchase price allocation adjustments [(1)]	282.9
Balance, December 31, 2018	**$ 1,468.1**
Foreign currency and other adjustments	(0.6)
Balance, December 31, 2019	**$ 1,467.5**

____

(1) Represents the cumulative effect of all measurement-period adjustments to the goodwill recorded as part of the DuPont Crop Protection Business Acquisition. Refer to Note 5 for further details.

Our fiscal year 2019 annual goodwill and indefinite life impairment test was performed during the third quarter ended September 30, 2019. We determined no goodwill impairment existed and that the fair value was substantially in excess of the carrying value. There were no events or circumstances indicating that goodwill might be impaired as of December 31, 2019. Additionally, the estimated fair values also substantially exceeded the carrying value for each of our indefinite-lived intangible assets.

Our intangible assets, other than goodwill, consist of the following:

		December 31, 2019			December 31, 2018		
(in Millions)	Weighted avg. useful life at December 31, 2019	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Intangible assets subject to amortization (finite life)							
Customer relationships	17 years	$ 1,139.7	$ (184.7)	$ 955.0	$ 1,146.2	$ (128.7)	$ 1,017.5
Patents	6 years	1.7	(0.9)	0.8	1.7	(0.8)	0.9
Brands [(1)] [(3)]	8 years	16.7	(6.7)	10.0	17.0	(5.9)	11.1
Purchased and licensed technologies	10 years	60.2	(35.2)	25.0	61.3	(32.1)	29.2
Other intangibles	1 year	1.9	(1.8)	0.1	1.9	(1.8)	0.1
		$ 1,220.2	**$ (229.3)**	**$ 990.9**	**$ 1,228.1**	**$ (169.3)**	**$ 1,058.8**
Intangible assets not subject to amortization (indefinite life)							
Crop Protection Brands [(2)]		$ 1,259.1		$ 1,259.1	$ 1,259.1		$ 1,259.1
Brands [(1)] [(3)]		379.0		379.0	384.8		384.8
In-process research and development		—		—	0.7		0.7
		$ 1,638.1		**$ 1,638.1**	**$ 1,644.6**		**$ 1,644.6**
Total intangible assets		**$ 2,858.3**	**$ (229.3)**	**$ 2,629.0**	**$ 2,872.7**	**$ (169.3)**	**$ 2,703.4**

____

(1) Represents trademarks, trade names and know-how.
(2) Represents the proprietary brand portfolios, consisting of trademarks, trade names and know-how, acquired from the DuPont Crop Protection Business Acquisition.
(3) The majority of the Brands relate to our proprietary brand portfolios acquired from the Cheminova acquisition.

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Amortization expense	$ 62.6	$ 62.2	$ 26.8

The estimated pre-tax amortization expense for each of the five years ending December 31, 2020 to 2024 is $62.4 million, $62.3 million, $62.3 million, $62.0 million, and $60.6 million, respectively.

Note 7: Inventories

Inventories consisted of the following:

	December 31,	
(in Millions)	**2019**	**2018**
Finished goods	$ 372.2	$ 430.4
Work in process	559.4	518.8
Raw materials, supplies and other	217.3	206.9
FIFO inventory	**$ 1,148.9**	**$ 1,156.1**
Less: Excess of FIFO cost over LIFO cost	(131.9)	(130.6)
Net inventories	**$ 1,017.0**	**$ 1,025.5**

Approximately 21 percent and 25 percent of our inventories in 2019 and 2018, respectively, were recorded on the LIFO basis.

Note 8: Property, Plant and Equipment

Property, plant and equipment consisted of the following:

	December 31,	
(in Millions)	**2019**	**2018**
Land and land improvements	$ 94.3	$ 99.3
Buildings	367.5	386.4
Machinery and equipment	582.1	508.9
Construction in progress	65.3	50.4
Total cost	**$ 1,109.2**	**$ 1,045.0**
Accumulated depreciation	(351.2)	(288.1)
Property, plant and equipment, net	**$ 758.0**	**$ 756.9**

Depreciation expense was $69.7 million, $73.9 million, and $51.3 million in 2019, 2018 and 2017, respectively.

Note 9: Restructuring and Other Charges (Income)

The following table shows total restructuring and other charges (income) included in the respective line items of the consolidated statements of income (loss):

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Restructuring charges	$ 62.2	$ 124.1	$ 8.5
Other charges (income), net	108.8	(62.9)	64.7
Total restructuring and other charges (income)	**$ 171.0**	**$ 61.2**	**$ 73.2**

Restructuring charges

(in Millions)		Severance and Employee Benefits		Other Charges (Income) (1)		Asset Disposal Charges (2)		Total
DuPont Crop restructuring	$	9.1	$	5.2	$	12.1	$	26.4
Furadan® product exit		—		—		34.1		34.1
Other items		1.7		—		—		1.7
Year ended December 31, 2019	**$**	**10.8**	**$**	**5.2**	**$**	**46.2**	**$**	**62.2**
DuPont Crop restructuring	$	16.3	$	16.9	$	75.1	$	108.3
Other items		5.7		3.1		7.0		15.8
Year ended December 31, 2018	**$**	**22.0**	**$**	**20.0**	**$**	**82.1**	**$**	**124.1**
Other items		—		0.8		7.7		8.5
Year ended December 31, 2017	**$**	**—**	**$**	**0.8**	**$**	**7.7**	**$**	**8.5**

(1) Primarily represents third-party costs associated with miscellaneous restructuring activities. Other income, if applicable, primarily represents favorable developments on previously recorded exit costs and recoveries associated with restructuring.

(2) Primarily represents asset write-offs (recoveries), and accelerated depreciation and impairment charges on long-lived assets, which were or are to be abandoned. To the extent incurred, the acceleration effect of re-estimating settlement dates and revised cost estimates associated with asset retirement obligations due to facility shutdowns, are also included within the asset disposal charges.

Furadan® Product Exit

During the fourth quarter of 2019, we decided to exit sales of all carbofuran formulations (including Furadan® insecticide/nematicide, Curaterr® insecticide/nematicide and any other brands used with carbofuran products) globally effective December 31, 2019. As a result of this decision, we accelerated the recognition of asset retirement obligations and asset write offs associated with the exit.

DuPont Crop Restructuring

On November 1, 2017, we completed the acquisition of the DuPont Crop Protection Business. See Note 5 for more details. As we continue to integrate the DuPont Crop Protection Business, we have started to, and continue to expect to, engage in various restructuring activities. These restructuring activities may include workforce reductions, relocation of current operating locations, lease and other contract termination costs and fixed asset accelerated depreciation as well as other asset disposal charges. We anticipate these restructuring activities will be substantially complete by the first half of 2020 as the majority of the integration will be completed. Details of key activities to date are as follows.

Subsequent to the acquisition, we conducted an in-depth analysis of key competitive capabilities of the combined business in India which resulted in a significant change to how we operate in the market and therefore a restructuring of our business in India. On July 3, 2018, we announced the adoption of an innovation-focused product strategy that uses a unique market access model anchored by our key, large scale distributors rather than the vast customer base we served prior to the DuPont Crop Protection Acquisition. Additionally, we rationalized our product portfolio and decisively exited a vast majority of the low margin product range. As a result of the change to our market access, we incurred charges of approximately $59 million for the year ended December 31, 2018, which primarily included the write-off of stranded accounts receivables and inventory. We also had workforce reductions which resulted in severance and other employee benefit charges of approximately $4 million for the year ended December 31, 2018.

As part of the acquisition, we acquired the Stine R&D facilities ("Stine") from DuPont. Due to its proximity to our previously existing Ewing R&D center ("Ewing"), in March 2018, we decided to migrate our Ewing R&D activities and employees into the newly acquired Stine facilities. As a result of this decision we incurred charges of approximately $28 million. We accelerated the depreciation of certain fixed assets that will no longer be used due to our exit from the facility and incurred charges of $17.4 million of accelerated depreciation charges for the year ended December 31, 2018. The cease use criteria was met as of September 30, 2018 as all employees had exited the Ewing facility and the facility became available for use. We recorded the estimated future liability associated with the rental obligation on the cease use date which resulted in a charge of $11.2 million for the year ended December 31, 2018. This charge was offset by the reduction of the capital lease liability previously recorded in "Other long-term liabilities" of $6.0 million. In addition to lease termination costs, we incurred severance, relocation and other employee related charges of $5.2 million for the year ended December 31, 2018. For the year ended December 31, 2019 we incurred additional severance, relocation and other employee related charges of $9.1 million.

Roll forward of restructuring reserves

The following table shows a roll forward of restructuring reserves that will result in cash spending. These amounts exclude asset retirement obligations.

(in Millions)	Balance at 12/31/17	Change in reserves (3)	Cash payments	Other (4)	Balance at 12/31/18 (5)	Change in reserves (3)	Cash payments	Other (4)	Balance at 12/31/19 (5)
DuPont Crop restructuring (1)	$ —	$ 33.2	$ (15.8)	$ (1.2)	$ 16.2	$ 14.3	$ (15.9)	$ (0.1)	$ 14.5
Cheminova restructuring	1.2	—	(1.2)	—	—	—	—	—	—
Other workforce related and facility shutdowns (2)	2.3	8.8	(8.2)	(1.9)	1.0	1.7	(2.7)	0.1	0.1
Total	**$ 3.5**	**$ 42.0**	**$ (25.2)**	**$ (3.1)**	**$ 17.2**	**$ 16.0**	**$ (18.6)**	**$ —**	**$ 14.6**

____

(1) Primarily consists of real estate exit costs and severance associated with DuPont Crop restructuring activities.
(2) Primarily severance costs related to workforce reductions and facility shutdowns described in the Other items section or the Restructuring charges table above.
(3) Primarily severance, exited lease, contract termination and other miscellaneous exit costs. The accelerated depreciation and impairment charges noted above impacted our property, plant and equipment or intangible balances and are not included in this table.
(4) Primarily foreign currency translation adjustments.
(5) Included in “Accrued and other liabilities” and "Other long-term liabilities" on the consolidated balance sheets.

Other charges (income), net

	Year Ended December 31,		
(in Millions)	2019	2018	2017
Environmental charges, net	$ 108.7	$ 21.7	$ 16.2
Product portfolio sales	0.1	(87.2)	—
Impairment of intangibles	—	—	42.1
Other items, net	—	2.6	6.4
Other charges (income), net	**$ 108.8**	**$ (62.9)**	**$ 64.7**

Environmental charges, net

Environmental charges represent the net charges associated with environmental remediation at continuing operating sites. Environmental obligations for continuing operations primarily represent obligations at shut down or abandoned facilities within businesses that do not meet the criteria for presentation as discontinued operations. During the fourth quarter of 2019, we recorded a charge of $72.8 million as a result of an unfavorable court ruling we received in relation to the Pocatello Tribal Litigation at one of our environmental sites. See Note 12 for further information regarding this matter.

Product portfolio sales

On February 1, 2018, we sold a portion of our European herbicide portfolio to Nufarm Limited. Additionally, on August 16, 2018, we completed the sale of certain products of our India portfolio to Crystal Crop Protection Limited. Both sales were required by regulatory authorities as part of closing conditions for the DuPont Crop Protection Business Acquisition. The gain on these sales are recorded within "Restructuring and other charges (income)" on the consolidated statements of income (loss). Proceeds from these sales are included in investing activities on the consolidated statements of cash flows.

Impairment of intangibles

In 2017, we recorded an impairment charge on certain acquired indefinite-lived intangible assets from the DuPont Crop Protection Business Acquisition solely as a result of the United States' enactment of the Act.

Other items, net

In 2018, other items, net primarily represents a milestone payment on an agreement related to our in-process research and development. Other items, net also includes the loss associated with the divestment of a joint venture.

In 2017, other items, net primarily relates to exit costs resulting from the termination and de-consolidation of our interest in a variable interest entity that was previously consolidated.

Note 10: Receivables

The following table displays a roll forward of the allowance for doubtful trade receivables for fiscal years 2018 and 2019.

(in Millions)		
Balance, December 31, 2017	**$**	**38.6**
Additions — charged to expense [1]		58.0
Transfer from (to) allowance for credit losses (see below)		(17.3)
Net recoveries, write-offs and other [1]		(56.9)
Balance, December 31, 2018	**$**	**22.4**
Additions — charged to expense		3.6
Transfer from (to) allowance for credit losses (see below)		3.4
Net recoveries, write-offs and other		(3.1)
Balance, December 31, 2019	**$**	**26.3**

(1) Includes the charge and write-off of approximately $42 million associated with the stranded accounts receivables written off as part of the restructuring in India. The charge was recorded as a component of "Restructuring and other charges (income)" on the consolidated statements of income (loss). Refer to Note 9 for further information.

We have non-current receivables that represent long-term customer receivable balances related to past due accounts which are not expected to be collected within the current year. The net long-term customer receivables were $123.1 million as of December 31, 2019. These long-term customer receivable balances and the corresponding allowance are included in "Other assets including long-term receivables, net" on the consolidated balance sheets.

A portion of these long-term receivables have payment contracts. We have no reason to believe payments will not be made based upon the credit quality of these customers. Additionally, we also hold significant collateral against these customers including rights to property or other assets as a form of credit guarantee. If the customer does not pay or gives indication that they will not pay, these guarantees allow us to start legal action to block the sale of the customer's harvest. On an ongoing basis, we continue to evaluate the credit quality of our non-current receivables using aging of receivables, collection experience and write-offs, as well as evaluating existing economic conditions, to determine if an additional allowance is necessary.

The following table displays a roll forward of the allowance for credit losses related to long-term customer receivables for fiscal years 2018 and 2019.

(in Millions)		
Balance, December 31, 2017	**$**	**47.1**
Additions — charged to expense		13.4
Transfer from (to) allowance for doubtful accounts (see above)		17.3
Foreign currency adjustments		(4.1)
Net recoveries, write-offs and other		(13.2)
Balance, December 31, 2018	**$**	**60.5**
Additions — charged to expense		17.6
Transfer from (to) allowance for doubtful accounts (see above)		(3.4)
Foreign currency adjustments		(0.5)
Net recoveries, write-offs and other		(13.1)
Balance, December 31, 2019	**$**	**61.1**

Note 11: Discontinued Operations

FMC Lithium (Livent Corporation):

On March 1, 2019, we completed the previously announced distribution of 123 million shares of common stock of Livent as a pro rata dividend on shares of FMC common stock outstanding at the close of business on the record date of February 25, 2019.

The results of our discontinued FMC Lithium operations are summarized below:

	Year Ended December 31,		
(in Millions)	2019	2018	2017
Revenue	$ 52.1	$ 442.5	$ 347.4
Costs of sales and services	41.3	235.4	197.9
Income (loss) from discontinued operations before income taxes (1)	$ 1.1	$ 170.9	$ 85.0
Provision (benefit) for income taxes	6.0	25.5	35.2
Total discontinued operations of FMC Lithium, net of income taxes, before separation-related costs	**$ (4.9)**	**$ 145.4**	**$ 49.8**
Separation-related costs and other adjustments of discontinued operations of FMC Lithium, net of income taxes	(16.4)	(28.1)	—
Discontinued operations of FMC Lithium, net of income taxes	**$ (21.3)**	**$ 117.3**	**$ 49.8**
Less: Discontinued operations of FMC Lithium attributable to noncontrolling interests	—	3.2	—
Discontinued operations of FMC Lithium, net of income taxes, attributable to FMC Stockholders	**$ (21.3)**	**$ 114.1**	**$ 49.8**

(1) For the years ended December 31, 2018 and 2017, amounts include $2.5 million and $8.2 million of restructuring and other charges (income), respectively, and $4.3 million and $34.5 million of non-operating pension settlement charges (income), respectively.

The following table presents the major classes of assets and liabilities of FMC Lithium:

	December 31,	
(in Millions)	2019	2018
Assets		
Current assets of discontinued operations (1)	$ —	$ 293.9
Property, plant and equipment (2)	—	275.7
Other noncurrent assets (2)	—	83.1
Total assets of discontinued operations	**$ —**	**$ 652.7**
Liabilities		
Current liabilities of discontinued operations (3)	$ —	$ (97.3)
Noncurrent liabilities of discontinued operations (4)	—	(46.1)
Total liabilities of discontinued operations	**$ —**	**$ (143.4)**
Total net assets	**$ —**	**$ 509.3**

(1) Primarily consists of cash and cash equivalents, trade receivables, and inventories. Presented as "Current assets of discontinued operations" on the condensed consolidated balance sheets as of December 31, 2018.
(2) Presented as "Noncurrent assets of discontinued operations" on the condensed consolidated balance sheets as of December 31, 2018.
(3) Presented as "Current liabilities of discontinued operations" on the condensed consolidated balance sheets as of December 31, 2018.
(4) Presented as "Noncurrent liabilities of discontinued operations" on the condensed consolidated balance sheets as of December 31, 2018.

Table of Contents

FMC Health and Nutrition:

On August 1, 2017, we completed the sale of the Omega-3 business to Pelagia AS for $38 million.

On November 1, 2017, we completed the previously disclosed sale of our FMC Health and Nutrition business to DuPont. The sale resulted in a gain of approximately $918 million ($727 million, net of tax). In connection with the sale, we entered into a customary transitional services agreement with DuPont to provide for the orderly separation and transition of various functions and processes. These services will be provided by us to DuPont for up to an initial 24 months after closing, with an additional six months extension, which has been exercised. These services include information technology services, accounting, human resource and facility services among other services, while DuPont assumes the operations of FMC Health and Nutrition.

Certain sites were to transfer at a later date due to various local timing constraints. In May 2018, the last site transferred to DuPont. The results of our discontinued FMC Health and Nutrition operations are summarized below, including the results of these delayed sites included in the year ended December 31, 2018.

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Revenue	$ —	$ 3.8	$ 562.9
Costs of sales and services	—	4.0	370.5
Income (loss) from discontinued operations before income taxes (1)	$ —	$ 2.0	$ 113.7
Provision (benefit) for income taxes	—	3.8	9.7
Total discontinued operations of FMC Health and Nutrition, net of income taxes, before divestiture related costs and adjustments (2)	**$ —**	**$ (1.8)**	**$ 104.0**
Gain on sale of FMC Health and Nutrition, net of income taxes (3)	—	—	727.1
Adjustment to gain on sale of FMC Health and Nutrition, net of income taxes (4)	—	7.8	—
Divestiture related costs and other adjustments of discontinued operations of FMC Health and Nutrition, net of income taxes	0.5	—	—
Adjustment to FMC Health and Nutrition Omega-3 net assets held for sale, net of income taxes (5)	—	—	(147.8)
Discontinued operations of FMC Health and Nutrition, net of income taxes, attributable to FMC Stockholders	**$ 0.5**	**$ 6.0**	**$ 683.3**

____

(1) Results for the year ended December 31, 2018 include an adjustment to retained liabilities of the disposed FMC Health and Nutrition business. For the year ended December 31, 2017 amount includes $16.6 million of allocated interest expense, $8.1 million of restructuring and other charges (income), and $3.9 million of a pension curtailment charge. See Note 15 for more information of the pension curtailment charge. Interest was allocated in accordance with relevant discontinued operations accounting guidance.

(2) In accordance with U.S. GAAP, effective March 2017 we stopped amortizing and depreciating all assets classified as held for sale. Assets held for sale under U.S. GAAP are required to be reported at the lower of carrying value or fair value, less costs to sell. However, the fair value of the Omega-3 business, which was previously part of the broader FMC Health and Nutrition reporting unit, was significantly less than its carrying value, which included accumulated foreign currency translation adjustments that were subsequently reclassified to earnings after completion of the sale.

(3) Includes $27.9 million of divestiture related costs, net of tax as well as incremental tax cost of $14.7 million related to certain legal entity restructuring executed during the third quarter of 2017 to facilitate the FMC Health and Nutrition divestiture.

(4) Amount represents the settlement of working capital adjustments subsequent to the sale.

(5) Represents the impairment charge for the year ended December 31, 2017 of approximately $168 million ($148 million, net of tax) associated with the disposal activities of the Omega-3 business to write down the carrying value to its fair value.

In addition to our discontinued FMC Lithium and FMC Health and Nutrition segments, our discontinued operations in our financial statements includes adjustments to retained liabilities from previous discontinued operations. The primary liabilities retained include environmental liabilities, other postretirement benefit liabilities, self-insurance, long-term obligations related to legal proceedings and historical restructuring activities.

Our discontinued operations comprised the following:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Adjustment for workers' compensation, product liability, and other postretirement benefits and other, net of income tax benefit (expense) of $(23.9), $(5.2) and $(0.1), respectively	$ 4.3	$ (1.7)	$ 3.0
Provision for environmental liabilities, net of recoveries, net of income tax benefit (expense) of $6.3, $32.5 and $24.9, respectively [1]	(23.5)	(121.4)	(51.2)
Provision for legal reserves and expenses, net of recoveries, net of income tax benefit (expense) of $6.3,$6.9 and $7.2, respectively	(23.3)	(26.3)	(13.4)
Discontinued operations of FMC Health and Nutrition, net of income tax benefit (expense) of $(0.2), $(7.1) and $(180.1), respectively	0.5	6.0	683.3
Discontinued operations of FMC Lithium, net of income tax benefit (expense) of $(12.3), $(18.0) and $(35.2), respectively	(21.3)	117.3	49.8
Discontinued operations, net of income taxes	**$ (63.3)**	**$ (26.1)**	**$ 671.5**

(1) See a roll forward of our environmental reserves as well as discussion on significant environmental issues that occurred during the year in Note 12.

Reserves for Discontinued Operations, other than Environmental at December 31, 2019 and 2018

	December 31,	
(in Millions)	**2019**	**2018**
Workers' compensation, product liability, and indemnification reserves	$ 15.7	$ 23.6
Postretirement medical and life insurance benefits reserve, net	5.9	7.0
Reserves for legal proceedings	50.3	41.6
Reserve for discontinued operations [1]	**$ 71.9**	**$ 72.2**

(1) Included in "Other long-term liabilities" on the consolidated balance sheets. Refer to Note 12 for discontinued environmental reserves.

The discontinued postretirement medical and life insurance benefits liability equals the accumulated postretirement benefit obligation. Associated with this liability is a net pre-tax actuarial gain and prior service credit of $5.2 million ($4.2 million after-tax) and $5.4 million ($4.9 million after-tax) at December 31, 2019 and 2018, respectively. The estimated net pre-tax actuarial gain and prior service credit that will be amortized from accumulated other comprehensive income into discontinued operations during 2020 are $1.0 million and zero, respectively.

Net spending in 2019, 2018 and 2017 was $3.8 million, $5.4 million and $2.4 million, respectively, for workers' compensation, product liability and other claims; $0.4 million, $1.1 million and $1.0 million, respectively, for other postretirement benefits; and $20.2 million, $21.3 million and $18.9 million, respectively, related to reserves for legal proceedings associated with discontinued operations.

Note 12: Environmental Obligations

We are subject to various federal, state, local and foreign environmental laws and regulations that govern emissions of air pollutants, discharges of water pollutants, and the manufacture, storage, handling and disposal of hazardous substances, hazardous wastes and other toxic materials and remediation of contaminated sites. We are also subject to liabilities arising under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and similar state laws that impose responsibility on persons who arranged for the disposal of hazardous substances, and on current and previous owners and operators of a facility for the clean-up of hazardous substances released from the facility into the environment. We are also subject to liabilities under the Resource Conservation and Recovery Act ("RCRA") and analogous state laws that require owners and operators of facilities that have treated, stored or disposed of hazardous waste pursuant to a RCRA permit to follow certain waste management practices and to clean up releases of hazardous substances into the environment associated with past or present practices. In addition, when deemed appropriate, we enter certain sites with potential liability into voluntary remediation compliance programs, which are also subject to guidelines that require owners and operators, current and previous, to clean up releases of hazardous substances into the environment associated with past or present practices.

Environmental liabilities consist of obligations relating to waste handling and the remediation and/or study of sites at which we are alleged to have released or disposed of hazardous substances. These sites include current operations, previously operated sites, and sites associated with discontinued operations. We have provided reserves for potential environmental obligations that we consider probable and for which a reasonable estimate of the obligation can be made. Accordingly, total reserves of $595.8 million and $529.4 million, respectively, before recoveries, existed at December 31, 2019 and 2018.

The estimated reasonably possible environmental loss contingencies, net of expected recoveries, exceed amounts accrued by approximately $150 million at December 31, 2019. This reasonably possible estimate is based upon information available as of the date of the filing but the actual future losses may be higher given the uncertainties regarding the status of laws, regulations, enforcement policies, the impact of potentially responsible parties, technology and information related to individual sites.

Additionally, although potential environmental remediation expenditures in excess of the reserves and estimated loss contingencies could be significant, the impact on our future consolidated financial results is not subject to reasonable estimation due to numerous uncertainties concerning the nature and scope of possible contamination at many sites, identification of remediation alternatives under constantly changing requirements, selection of new and diverse clean-up technologies to meet compliance standards, the timing of potential expenditures and the allocation of costs among Potentially Responsible Parties ("PRPs") as well as other third parties. The liabilities arising from potential environmental obligations that have not been reserved for at this time may be material to any one quarter's or year's results of operations in the future. However, we believe any liability arising from such potential environmental obligations is not likely to have a material adverse effect on our liquidity or financial condition as it may be satisfied over many years.

The table below is a roll forward of our total environmental reserves, continuing and discontinued, from December 31, 2016 to December 31, 2019.

(in Millions)	Operating and Discontinued Sites Total
Total environmental reserves, net of recoveries at December 31, 2016	**$ 360.4**
2017	
Provision	105.6
Spending, net of recoveries	(63.3)
Acquisitions [(1)]	2.6
Foreign currency translation adjustments	6.5
Net Change	$ 51.4
Total environmental reserves, net of recoveries at December 31, 2017	**$ 411.8**
2018	
Provision	178.2
Spending, net of recoveries	(65.7)
Foreign currency translation adjustments	(2.8)
Net Change	$ 109.7
Total environmental reserves, net of recoveries at December 31, 2018	**$ 521.5**
2019	
Provision	138.8
Spending, net of recoveries	(73.8)
Foreign currency translation adjustments and other adjustments	(0.7)
Net Change	$ 64.3
Total environmental reserves, net of recoveries at December 31, 2019	**$ 585.8**

(1) Amount relates to environmental obligations at certain sites of the acquired DuPont Crop Protection Business.

To ensure we are held responsible only for our equitable share of site remediation costs, we have initiated, and will continue to initiate, legal proceedings for contributions from other PRPs. At December 31, 2019 and 2018, we have recorded recoveries representing probable realization of claims against U.S. government agencies, insurance carriers and other third parties. Recoveries are recorded as either an offset to the “Environmental liabilities, continuing and discontinued” or as “Other assets including long-term receivables, net” on the consolidated balance sheets.

The table below is a roll forward of our total recorded recoveries from December 31, 2017 to December 31, 2019:

(in Millions)	December 31, 2017	Increase (Decrease) in Recoveries	Cash Received	December 31, 2018	Increase (Decrease) in Recoveries	Cash Received	Other	December 31, 2019
Environmental liabilities, continuing and discontinued	$ 13.9	$ (5.5)	$ (0.5)	$ 7.9	$ 2.6	$ (0.5)	$ —	$ 10.0
Other assets [(1)]	32.3	2.6	(4.4)	30.5	0.3	(3.8)	0.3	27.3
Total	**$ 46.2**	**$ (2.9)**	**$ (4.9)**	**$ 38.4**	**$ 2.9**	**$ (4.3)**	**$ 0.3**	**$ 37.3**

____

(1) The amounts are included within “Prepaid and other current assets" and "Other assets including long-term receivables, net" on the consolidated balance sheets. See Note 22 for more details.

The table below provides detail of current and long-term environmental reserves, continuing and discontinued.

(in Millions)	December 31, 2019	December 31, 2018
Environmental reserves, current, net of recoveries [(1)]	$ 115.3	$ 63.0
Environmental reserves, long-term continuing and discontinued, net of recoveries [(2)]	470.5	458.5
Total environmental reserves, net of recoveries	**$ 585.8**	**$ 521.5**

____

(1) These amounts are included within “Accrued and other liabilities” on the consolidated balance sheets.
(2) These amounts are included in "Environmental liabilities, continuing and discontinued" on the consolidated balance sheets.

Our net environmental provisions relate to costs for the continued remediation of both operating sites and for certain discontinued manufacturing operations from previous years. The net provisions are comprised as follows:

(in Millions)	Year Ended December 31, 2019	2018	2017
Continuing operations [(1)]	$ 108.7	$ 21.7	$ 16.2
Discontinued operations [(2)]	29.8	153.9	76.1
Net environmental provision	**$ 138.5**	**$ 175.6**	**$ 92.3**

____

(1) Recorded as a component of “Restructuring and other charges (income)” on our consolidated statements of income. See Note 9. Environmental obligations for continuing operations primarily represent obligations at shut down or abandoned facilities within businesses that do not meet the criteria for presentation as discontinued operations.
(2) Recorded as a component of “Discontinued operations, net of income taxes" on our consolidated statements of income (loss). See Note 11.

On our consolidated balance sheets, the net environmental provisions affect assets and liabilities as follows:

(in Millions)	Year Ended December 31, 2019	2018	2017
Environmental reserves [(1)]	$ 138.8	$ 178.2	$ 105.6
Other assets [(2)]	(0.3)	(2.6)	(13.3)
Net environmental provision	**$ 138.5**	**$ 175.6**	**$ 92.3**

____

(1) See above roll forward of our total environmental reserves as presented on our consolidated balance sheets.
(2) Represents certain environmental recoveries. See Note 22 for details of "Other assets including long-term receivables, net" as presented on our consolidated balance sheets.

Significant Environmental Sites

Pocatello

From 1949 until 2001, we operated the world's largest elemental phosphorus plant in Power County, Idaho, just outside the city of Pocatello. Since the plant's closure, FMC has worked with the EPA, the State of Idaho, and the Shoshone-Bannock Tribes ("Tribes") to develop a proposed cleanup plan for the property. In September 2012, the EPA issued an Interim Record of Decision ("IROD") that is environmentally protective and that ensures the health and safety of both workers and the general public. Since the plant's closure, we have successfully decommissioned our Pocatello plant, completed closure of the RCRA ponds and formally requested that the EPA acknowledge completion of work under a June 1999 RCRA Consent Decree. Future remediation costs include completion of the IROD that addresses groundwater contamination and existing waste disposal areas on the Pocatello plant portion of the Eastern Michaud Flats Superfund Site. In June 2013, the EPA issued a Unilateral Administrative Order to us under which we will implement the IROD remedy. Our current reserves factor in the estimated costs associated with implementing the IROD. In addition to implementing the IROD, we continue to conduct work pursuant to CERCLA unilateral administrative orders to address air emissions from beneath the cap of several of the closed RCRA ponds. Actions also involve impacts of the Tribal Litigation discussed below.

The amount of the reserve for this site, which includes the Pocatello Tribal Litigation described below, was $107.5 million and $33.1 million at December 31, 2019 and 2018, respectively.

Pocatello Tribal Litigation

For a number of years, we engaged in disputes with the Tribes concerning their attempts to regulate our activities on the reservation. On March 6, 2006, a U.S. District Court Judge found that the Tribes were a third-party beneficiary of a 1998 RCRA Consent Decree and ordered us to apply for any applicable Tribal permits relating to the nearly-complete RCRA Consent Decree work. The third-party beneficiary ruling was later reversed by the Ninth Circuit Court of Appeals, but the permitting process continued in the tribal legal system. We applied for the tribal permits, but preserved objections to the Tribes' jurisdiction.

In addition, in 1998, we entered into an agreement that required us to pay the Tribes $1.5 million per year for waste generated from operating our Pocatello plant and stored on site. We paid $1.5 million per year until December 2001 when the plant closed. In our view the agreement was terminated, as the plant was no longer generating waste. The Tribes claimed that the 1998 Agreement has no end date.

On April 25, 2006, the Tribes' Land Use Policy Commission issued us a Special Use Permit for the “disposal and storage of waste” at the Pocatello plant and imposed a $1.5 million per annum permit fee.

FMC challenged this fee at various levels of the Tribal Court system and in April 2014, the Shoshone-Bannock Tribal Appellate Court issued a Statement of Decision finding in favor of the Tribes’ jurisdiction over FMC and awarding costs on appeal to the Tribes. The Tribal Appellate Court conducted further post-trial proceedings and on May 6, 2014 issued Finding and Conclusions and a Final Judgment consistent with its earlier Statement of Decision. FMC challenged the Final Judgment in the United States District Court for the District of Idaho.

On September 28, 2017, the District Court issued a decision finding that the Tribal Court has jurisdiction over FMC to require FMC to pay the $1.5 million per year fee to the Tribes. In 2017, we appealed to the United States Court of Appeals for the Ninth Circuit and oral arguments were held on May 17, 2019. On November 15, 2019, the Ninth Circuit affirmed the District Court's decision that the Tribal Court has jurisdiction over FMC to require FMC to pay the $1.5 million per year fee to the Tribes. As a result of the unfavorable court decision issued on November 15, 2019, we increased our reserves by $72.8 million, which represents both the historical and discounted present value of future annual use permit fees as well as the associated legal costs incurred to date. The increase in reserve was transferred from the previously estimated reasonably possible loss related to this matter. Following the Ninth Circuit's denial of our petition for rehearing en banc, we filed a motion to stay the mandate with the Ninth Circuit. On February 4, 2020, the Ninth Circuit granted our motion to stay the mandate. Because this stay was granted, payment of the judgment, if necessary, will not take place until final disposition by the United States Supreme Court. During 2020, we intend to petition the Supreme Court to consider an appeal of the Ninth Circuit's decision.

In calculating the net present value of future annual permit fees, we used a discount rate of 2.25%, which represents the appropriate risk-free rate. We believe that the application of this rate produces a result which approximates the amount that would hypothetically satisfy our liability in an arms-length transaction. Current estimates for expenditures for each of the five succeeding fiscal years are $29.5 million in 2020 and $1.5 million in annual fees payable each year thereafter. The expected aggregate undiscounted amount related to this matter is $103.0 million of which $72.8 million, on a discounted basis, has been recognized in environmental liabilities on the statements of financial position.

Middleport

Our Middleport, NY facility is currently an Agricultural Solutions formulation and packaging plant that formerly manufactured arsenic-based and other products. As a result of past manufacturing operations and waste disposal practices at this facility, releases of hazardous substances have occurred at the site that have affected soil, sediment, surface water and groundwater at the facility's property and also in adjacent off-site areas. The impact of our discontinued operations was the subject of an Administrative Order on Consent ("1991 AOC") entered into with the EPA and New York State Department of Environmental Conservation ("NYSDEC", and collectively with EPA, the "Agencies") in 1991, which was replaced by a New Order on Consent and Administrative Settlement with the NYSDEC, effective June 6, 2019 ("2019 Order). Like the 1991 AOC, the 2019 Order requires us to (1) define the nature and extent of contamination caused by our historical plant operations, (2) take interim corrective measures and (3) evaluate Corrective Measure Alternatives ("CMA") for discrete contaminated areas, known as "operable units" of which there are 11.

We have defined the nature and extent of the contamination in certain areas, have constructed an engineered cover, taken certain closure actions regarding RCRA regulated surface water impoundments and are collecting and treating both surface water runoff and ground water. To date, we have evaluated and proposed CMAs for six of the 11 identified operable units.

Middleport Litigation

All pending litigation with respect to the Middleport site was settled and/or dismissed in 2019. The 2019 Order supplanted the need for a separate Hazardous Waste Management Permit ("Part 373 permit"), and as a result, the administrative action challenging the Part 373 Permit was dismissed. In connection with the settlement, FMC also dismissed its claims against the EPA that were pending appeal before the United States Court of Appeals for the Second Circuit. The terms of the 2019 Order are materially consistent with our established reserve for Middleport as of December 31, 2018 as a result of the 2019 Order.

Middleport Reserves

In the fourth quarter of 2018, we increased the reserve by $106.3 million, which included our best estimate for remediation costs for OUs 2,4 and 5 in line with the drafted settlement terms between FMC and NYSDEC. Of the $106.3 million reserve increase, $60.6 million related to our best estimate for remediation costs associated with the operable unit that comprises the southern portion of the tributary ("OU 6") plus the impact of inflation. The $60.6 million increase was in addition to a previously established reserve of $29.1 million related to this operable unit.

The remaining $45.7 million reserve increase related to costs associated with the implementation and completion of NYSDEC's selected remedy for OUs 2,4, and 5. Prior to settlement discussions, our reserve balance for OUs 2,4, and 5 of $31.1 million included the estimated liability for clean-up to reflect the costs associated with our recommended CMAs. Our total reserve for all of Middleport is $159.4 million and $180.8 million at December 31, 2019 and 2018, respectively. FMC is in various stages of evaluating the remaining operable units.

The Middleport settlement resulted in $22.2 million of cash outflows in 2019 and will result in cash outflows of approximately $20 million to $30 million per year for years 2020 - 2021 due to front loading of reimbursement in installments of past costs, and thereafter an amount not to exceed an average of $10 million per year until the remediation is complete.

Other Potentially Responsible Party ("PRP") Sites

We have been named a PRP at 30 sites on the federal government's National Priorities List ("NPL"), at which our potential liability has not yet been settled. We have received notice from the EPA or other regulatory agencies that we may be a PRP, or PRP equivalent, at other sites, including 48 sites at which we have determined that it is probable that we have an environmental liability for which we have recorded an estimate of our potential liability in the consolidated financial statements. In cooperation with appropriate government agencies, we are currently participating in, or have participated in, a Remedial Investigation/Feasibility Study ("RI/FS"), or equivalent, at most of the identified sites, with the status of each investigation varying from site to site. At certain sites, a RI/FS has only recently begun, providing limited information, if any, relating to cost estimates, timing, or the involvement of other PRPs; whereas, at other sites, the studies are complete, remedial action plans have been chosen, or a ROD has been issued.

One site where FMC is listed as a PRP is the Portland Harbor Superfund Site ("Portland Harbor"), that includes the river and sediments of a 12 mile section of the lower reach of the Willamette River in Portland, Oregon that runs through an industrialized area. Portland Harbor is listed on the NPL. FMC formerly owned and operated a manufacturing site adjacent to this section of the river and has since sold its interest in this business. Currently, FMC and approximately 70 other parties are involved in a non-judicial allocation process to determine each party's respective share of the cleanup costs. FMC and several other parties have been sued by the Confederated Bands and Tribes of the Yakama Nation for reimbursement of cleanup costs and the costs of performing a natural damage assessment. Based on the information known to date, we are unable to develop a reasonable estimate of our potential exposure of loss at this time. We intend to defend this matter.

On January 6, 2017, EPA issued its Record of Decision (“ROD”) for the Portland Harbor Superfund Site. On December 30, 2019, FMC and EPA entered into an Administrative Settlement Agreement and Order on Consent to perform a remedial design for the area at and around FMC's former operations. The cost of developing a work plan for this remedial design is included in our reserves. Based on the current information available in the ROD as well as the large number of responsible parties for the Superfund Site, we are unable to develop a reasonable estimate of our potential exposure for Portland Harbor at this time. We have no reason to believe that the ultimate resolution of our potential obligations at Portland Harbor will have a material adverse effect on our consolidated financial position, liquidity or results of operations. However, adverse results in the outcome of the EPA allocation could have a material adverse effect on our consolidated financial position, results of operations in any one reporting period, or liquidity.

Note 13: Income Taxes

U.S. Tax Reform

The impacts of the Tax Cuts and Jobs Act ("the Act") were completed in 2018. For the year ended December 31, 2017, we recognized provisional expense of $303.6 million comprised of $190.4 million of expense related to the one-time transition tax on the cumulative earnings and profits of foreign subsidiaries that were not previously taxed for U.S. income tax purposes and $113.2 million of tax expense for the remeasurement of the Company’s U.S. net deferred tax assets. During 2018, in accordance with Staff Accounting Bulletin 118 ("SAB 118"), income tax effects of the Act were refined upon obtaining, preparing, or analyzing additional information during the measurement period. For the year ended December 31, 2018, we recorded an adjustment to our provisional expense in the amount of $7.8 million. At December 31, 2018, the Company had completed its accounting for the impacts of the enactment of the Act.

We do not provide income taxes for other outside basis differences inherent in our investments in subsidiaries because the investments and related unremitted earnings are essentially permanent in duration or we have concluded that no additional tax liability will arise upon disposal or remittance. Determining the amount of unrecognized deferred tax liability related to any remaining undistributed foreign earnings is not practicable due to the complexity of the hypothetical calculation.

Domestic and foreign components of income (loss) from continuing operations before income taxes are shown below:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Domestic	$ (227.4)	$ (234.9)	$ (201.4)
Foreign	882.4	843.3	297.2
Total	**$ 655.0**	**$ 608.4**	**$ 95.8**

The provision (benefit) for income taxes attributable to income (loss) from continuing operations consisted of:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Current:			
Federal (1)	$ (12.0)	$ 25.1	$ 61.9
Foreign	77.0	90.0	49.9
State	0.4	(0.4)	4.1
Total current	**$ 65.4**	**$ 114.7**	**$ 115.9**
Deferred:			
Federal (2)	$ (1.2)	$ (4.4)	$ 127.8
Foreign	42.7	(30.4)	(14.4)
State	4.6	(9.1)	(0.4)
Total deferred	**$ 46.1**	**$ (43.9)**	**$ 113.0**
Total	**$ 111.5**	**$ 70.8**	**$ 228.9**

____

(1) The years ended December 31, 2018 and 2017 include the one-time impacts of the Act, primarily related to transition tax.

(2) The years ended December 31, 2018 and 2017 include the one-time impacts of the Act, primarily related to the measurement of the Company's U.S. domestic net deferred tax assets.

The effective income tax rate applicable to income from continuing operations before income taxes was different from the statutory U.S. federal income tax rate due to the factors listed in the following table:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
U.S. Federal statutory rate (1)	$ 137.5	$ 127.8	$ 33.5
Impacts of Tax Cuts and Jobs Act Enactment (2)	—	7.8	303.6
Foreign earnings subject to different tax rates (3)	(137.7)	(154.9)	(74.5)
Capital loss on internal restructuring	—	—	(45.3)
State and local income taxes, less federal income tax benefit	(2.9)	1.4	(1.5)
Manufacturer's production deduction and miscellaneous tax credits	(3.8)	(3.7)	(8.4)
Tax on dividends, deemed dividends, and GILTI (4)	46.8	45.5	10.6
Changes to unrecognized tax benefits	(5.4)	2.7	6.7
Nondeductible expenses	3.5	12.4	14.2
Change in valuation allowance (5)	49.9	7.4	(29.3)
Exchange gains and losses (6)	(2.1)	5.7	28.1
Other	25.7	18.7	(8.8)
Total Tax Provision	**$ 111.5**	**$ 70.8**	**$ 228.9**

____

(1) The years ended December 31, 2019 and 2018 includes twelve months of earnings associated with the operations of the DuPont Crop Protection Business acquired November 1, 2017. See Note 5 for additional information.
(2) Includes the one-time impacts of the of the Act, primarily related to transition tax and the decrease to the U.S. tax rate, further discussed above within Note 13.
(3) The years ended December 31, 2019 and 2018 reflects the income mix associated with twelve months of foreign earnings of the DuPont Crop Protection business acquired November 1, 2017.
(4) The years ended December 31, 2019 and 2018 includes tax expense of $41.6 million and $43.8 million, respectively, associated with the global intangible low-taxed income (GILTI) provisions of the Act.
(5) The year ended December 31, 2019 includes approximately $21 million associated with our India operations, primarily related to net operating losses with limited carryforward.
(6) Includes the impact of transaction gains or losses on net monetary assets for which no corresponding tax expense or benefit is realized and the tax provision for statutory taxable gains or losses in foreign jurisdictions for which there is no corresponding amount in income before taxes.

Significant components of our deferred tax assets and liabilities were attributable to:

	December 31,	
(in Millions)	**2019**	**2018**
Reserves for discontinued operations, environmental and restructuring	$ 188.3	$ 148.7
Accrued pension and other postretirement benefits	2.4	2.1
Capital loss, foreign tax and other credit carryforwards	7.5	6.0
Net operating loss carryforwards	227.0	219.3
Deferred expenditures capitalized for tax	18.7	15.2
Other	163.6	143.3
Deferred tax assets	**$ 607.5**	**$ 534.6**
Valuation allowance, net	(303.3)	(261.4)
Deferred tax assets, net of valuation allowance	**$ 304.2**	**$ 273.2**
Intangibles and property, plant and equipment, net	380.0	331.2
Deferred tax liabilities	**$ 380.0**	**$ 331.2**
Net deferred tax assets (liabilities)	**$ (75.8)**	**$ (58.0)**

We evaluate our deferred income taxes quarterly to determine if valuation allowances are required or should be adjusted. GAAP accounting guidance requires companies to assess whether valuation allowances should be established against deferred tax assets based on all available evidence, both positive and negative, using a “more likely than not” standard. In assessing the need for a valuation allowance, appropriate consideration is given to all positive and negative evidence related to the realization of deferred tax assets. This assessment considers, among other matters, the nature and severity of current and cumulative losses, forecasts of future profitability, the duration of statutory carryforward periods, and tax planning alternatives. We operate and derive income across multiple jurisdictions. As our business experiences changes in operating results across its geographic footprint, we may encounter losses in jurisdictions that have been historically profitable, and as a result might require additional valuation allowances to be recorded. We are committed to implementing tax planning actions, when deemed appropriate, in jurisdictions that experience losses in order to realize deferred tax assets prior to their expiration.

At December 31, 2019, we had net operating loss and tax credit carryforwards as follows: U.S. state net operating loss carryforwards of $25.6 million (tax-effected) expiring in future tax years through 2039, foreign net operating loss carryforwards of $201.4 million (tax-effected) expiring in various future years, and other tax credit carryforwards of $7.5 million expiring in various future years.

At December 31, 2019, our net valuation allowance was primarily comprised of balances within continuing operations locations of Brazil of $98.8 million, U.S. state of $28.1 million, Luxembourg of $30.9 million, India of $20.7 million, and Switzerland of $31.6 million and within discontinued operations in Spain of $66.4 million. The valuation allowance balances at these locations are associated mainly with net operating losses, but in some cases relate to other additional deferred tax assets in the jurisdiction.

Uncertain Income Tax Positions

U.S. GAAP accounting guidance for uncertainty in income taxes prescribes a model for the recognition and measurement of a tax position taken or expected to be taken in a tax return, and provides guidance on derecognition, classification, interest and penalties, disclosure and transition.

We file income tax returns in the U.S. federal jurisdiction, and various states and foreign jurisdictions. The income tax returns for FMC entities taxable in the U.S. and significant foreign jurisdictions are open for examination and adjustment. As of December 31, 2019, the U. S. federal and state income tax returns are open for examination and adjustment for the years 2016 - 2019 and 1999 - 2019, respectively. Our significant foreign jurisdictions, which total 14, are open for examination and adjustment during varying periods from 2009 - 2019.

As of December 31, 2019, we had total unrecognized tax benefits of $68.2 million, of which $29.4 million would favorably impact the effective tax rate from continuing operations if recognized. As of December 31, 2018, we had total unrecognized tax benefits of $79.1 million, of which $29.5 million would favorably impact the effective tax rate if recognized. Interest and penalties related to unrecognized tax benefits are reported as a component of income tax expense. For the years ended December 31, 2019, 2018 and 2017, we recognized interest and penalties of $1.4 million, $0.9 million, and $5.2 million, respectively, in the consolidated statements of income (loss). As of December 31, 2019 and 2018, we have accrued interest and penalties in the consolidated balance sheets of $15.4 million and $14.0 million, respectively.

Due to the potential for resolution of federal, state, or foreign examinations, and the expiration of various jurisdictional statutes of limitation, it is reasonably possible that our liability for unrecognized tax benefits will decrease within the next 12 months by a range of $15.8 million to $37.2 million.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

(in Millions)	2019	2018	2017
Balance at beginning of year	$ 79.1	$ 84.0	$ 111.6
Increases related to positions taken in the current year	4.1	11.8	9.4
Increases and decreases related to positions taken in prior years	3.4	(1.8)	(4.6)
Decreases related to lapse of statutes of limitations	(13.0)	(13.5)	(14.2)
Settlements during the current year	(2.8)	(1.4)	(0.3)
Decreases for tax positions on dispositions	(2.6)	—	(17.9)
Balance at end of year (1)	**$ 68.2**	**$ 79.1**	**$ 84.0**

(1) At December 31, 2019, 2018, and 2017 we recognized an offsetting non-current asset of $34.0 million, $45.3 million, and $59.8 million respectively, relating to the indirect income tax benefits associated with specific uncertain tax positions presented above.

Note 14: Debt

Debt maturing within one year:

Debt maturing within one year consists of the following:

	December 31,	
(in Millions)	2019	2018
Short-term foreign debt (1)	$ 144.9	$ 106.5
Commercial paper	—	55.2
Total short-term debt	**$ 144.9**	**$ 161.7**
Current portion of long-term debt	82.8	386.0
Short-term debt and current portion of long-term debt	**$ 227.7**	**$ 547.7**

(1) At December 31, 2019, the average effective interest rate on the borrowings was 16.3 percent.

Long-term debt:

Long-term debt consists of the following:

	December 31, 2019		December 31,	
(in Millions)	Interest Rate Percentage	Maturity Date	2019	2018
Pollution control and industrial revenue bonds (less unamortized discounts of $0.2 and $0.2, respectively)	1.85% - 6.45%	2021 - 2032	$ 51.6	$ 51.6
Senior notes (less unamortized discounts of $1.3 and $0.8, respectively)	3.20% - 4.50%	2022 - 2049	2,198.7	999.2
2017 Term Loan Facility	3.0%	2022	800.0	1,400.0
Revolving Credit Facility (1)	4.3%	2024	—	—
Foreign debt	0% - 7.2%	2021 - 2024	83.8	89.1
Debt issuance cost			(20.2)	(8.9)
Total long-term debt			**$ 3,113.9**	**$ 2,531.0**
Less: debt maturing within one year			82.8	386.0
Total long-term debt, less current portion			**$ 3,031.1**	**$ 2,145.0**

(1) Letters of credit outstanding under the Revolving Credit Facility totaled $217.0 million and available funds under this facility were $1,283.0 million at December 31, 2019.

Senior Notes

On September 20, 2019, we issued $500 million aggregate principal amount of 3.200% Senior Notes due 2026, $500 million aggregate principal amount 3.450% Senior Notes due 2029, and $500 million aggregate principal amount 4.500% Senior Notes due 2049. A portion of the net proceeds from the offering were used for paydowns of both outstanding commercial paper and 2017 Term Loan Facility balances and for general corporate purposes. We used the remaining net proceeds of approximately $300 million to redeem all of our Senior notes that matured in the fourth quarter of 2019.

Fees incurred to secure the senior notes have been deferred and will be amortized over the terms of the arrangement.

See Note 19 for details on the interest rate swap settlement which will also be amortized over the terms of the arrangement.

Revolving Credit Facility

On May 17, 2019, we entered into an amended and restated credit agreement (the "Revolving Credit Agreement"). The unsecured Revolving Credit Agreement provides for a $1.5 billion revolving credit facility, $400 million of which is available for the issuance of letters of credit for the account of the Revolving Borrowers and $50 million of which is available for swing loans to certain of the Revolving Borrowers, with an option, subject to certain conditions and limitations, to increase the aggregate amount of the revolving credit commitments to $2.25 billion (the “Revolving Credit Facility”). The current termination date of the Revolving Credit Facility is May 17, 2024.

Revolving loans under the Revolving Credit Agreement will bear interest at a floating rate, which will be a base rate or a Eurocurrency rate equal to the London interbank offered rate for the relevant interest period, plus, in each case, an applicable margin, as determined in accordance with the provisions of the Revolving Credit Agreement. The base rate will be the highest of: the rate of interest announced publicly by Citibank, N.A. in New York, New York from time to time as its “base rate”; the federal funds effective rate plus 1/2 of 1%; and the Eurocurrency rate for a one-month period plus 1%. The Company is required to pay a facility fee on the average daily amount (whether used or unused) of each Revolving Credit Lender’s revolving credit commitment from the effective date for such Revolving Credit Lender until the termination date of such Revolving Credit Lender at a rate per annum equal to an applicable percentage in effect from time to time for the facility fee, as determined in accordance with the provisions of the Revolving Credit Agreement. The initial facility fee is 0.125% per annum. The applicable margin and the facility fee are subject to adjustment as provided in the Revolving Credit Agreement.

The Revolving Credit Agreement contains customary financial and other covenants, including a maximum leverage ratio and minimum interest coverage ratio.

Fees incurred to secure the Revolving Credit Facility have been deferred and will be amortized over the term of the arrangement.

Maturities of long-term debt

Maturities of long-term debt outstanding, excluding discounts, at December 31, 2019, are $82.8 million in 2020, $1.6 million in 2021, $1,100.9 million in 2022, $0.3 million in 2023, $400.0 million in 2024 and $1,550.0 million thereafter.

Covenants

Among other restrictions, the Revolving Credit Facility and 2017 Term Loan Facility contain financial covenants applicable to FMC and its consolidated subsidiaries related to leverage (measured as the ratio of debt to adjusted earnings) and interest coverage (measured as the ratio of adjusted earnings to interest expense). Our actual leverage for the four consecutive quarters ended December 31, 2019 was 2.8 which is below the maximum leverage of 4.0. By the end of 2020, the maximum leverage ratio will step down to 3.5 in accordance with the provisions of the Revolving Credit Facility and the 2017 Term Loan Facility. Our actual interest coverage for the four consecutive quarters ended December 31, 2019 was 7.6 which is above the minimum interest coverage of 3.5. We were in compliance with all covenants at December 31, 2019.

Compensating Balance Agreements

We maintain informal credit arrangements in many foreign countries. Foreign lines of credit, which include overdraft facilities, typically do not require the maintenance of compensating balances, as credit extension is not guaranteed but is subject to the availability of funds.

Note 15: Pension and Other Postretirement Benefits

The funded status of our U.S. qualified and nonqualified defined benefit pension plans, our Germany, France, and Belgium defined benefit pension plans, plus our U.S. other postretirement healthcare and life insurance benefit plans for continuing operations, together with the associated balances and net periodic benefit cost recognized in our consolidated financial statements as of December 31, are shown in the tables below.

We are required to recognize in our consolidated balance sheets the overfunded and underfunded status of our defined benefit postretirement plans. The overfunded or underfunded status is defined as the difference between the fair value of plan assets and the projected benefit obligation. We are also required to recognize as a component of other comprehensive income the actuarial gains and losses and the prior service costs and credits that arise during the period.

The following table summarizes the weighted-average assumptions used to determine the benefit obligations at December 31 for the U.S. Plans:

	Pensions and Other Benefits	
	December 31,	
	2019	2018
Discount rate qualified	3.22 %	4.35 %
Discount rate nonqualified plan	2.74 %	3.97 %
Discount rate other benefits	2.89 %	4.08 %
Rate of compensation increase	3.10 %	3.10 %

The following table summarizes the components of our defined benefit postretirement plans and reflect a measurement date of December 31:

	Pensions		Other Benefits (1)	
	December 31,			
(in Millions)	2019	2018	2019	2018
Change in projected benefit obligation				
Projected benefit obligation at January 1	$ 1,261.3	$ 1,385.8	$ 18.9	$ 19.0
Service cost	4.2	6.3	—	—
Interest cost	47.6	44.5	0.6	0.7
Actuarial loss (gain) (2)	153.0	(89.9)	(2.2)	0.6
Amendments	—	—	—	(0.1)
Foreign currency exchange rate changes and other	—	(0.4)	—	—
Plan participants’ contributions	—	—	0.4	0.7
Special termination benefits	—	3.9	—	—
Settlements	(3.5)	(4.4)	—	—
Curtailments	—	(0.9)	—	0.2
Benefits paid	(83.5)	(83.6)	(1.9)	(2.2)
Projected benefit obligation at December 31	**$ 1,379.1**	**$ 1,261.3**	**$ 15.8**	**$ 18.9**
Change in plan assets				
Fair value of plan assets at January 1	$ 1,269.7	$ 1,339.9	$ —	$ —
Actual return on plan assets	196.2	(18.0)	—	—
Foreign currency exchange rate changes	(0.2)	(0.2)	—	—
Company contributions	11.9	36.0	1.5	1.5
Plan participants’ contributions	—	—	0.4	0.7
Settlements	(3.5)	(4.4)	—	—
Benefits paid	(83.5)	(83.6)	(1.9)	(2.2)
Fair value of plan assets at December 31	**$ 1,390.6**	**$ 1,269.7**	**$ —**	**$ —**
Funded Status				
U.S. plans with assets	$ 44.2	$ 42.8	$ —	$ —
U.S. plans without assets	(22.4)	(24.6)	(15.8)	(18.9)
Non-U.S. plans with assets	(1.3)	(1.9)	—	—
All other plans	(9.0)	(7.9)	—	—
Net funded status of the plan (liability)	**$ 11.5**	**$ 8.4**	**$ (15.8)**	**$ (18.9)**
Amount recognized in the consolidated balance sheets:				
Pension asset (3)	$ 44.2	$ 42.8	$ —	$ —
Accrued benefit liability (4)	(32.7)	(34.4)	(15.8)	(18.9)
Total	**$ 11.5**	**$ 8.4**	**$ (15.8)**	**$ (18.9)**

(1) Refer to Note 11 for information on our discontinued postretirement benefit plans.
(2) The actuarial loss in 2019 and actuarial gain in 2018 was primarily driven by the change in discount rate on the U.S. qualified plan. Additionally, the Society of Actuaries released an updated mortality table projection scale for measurement of retirement program obligations in both 2019 and 2018. Adoption of the most recent projection scale for each applicable year decreased the U.S. defined benefit obligations by approximately $13 million and $4 million at December 31, 2019 and 2018, respectively.
(3) Recorded as "Other assets including long-term receivables, net" on the consolidated balance sheets.
(4) Recorded as "Accrued pension and other postretirement benefits, current and long-term" on the consolidated balance sheets.

The amounts in accumulated other comprehensive income (loss) that have not yet been recognized as components of net periodic benefit cost are as follows:

	Pensions		Other Benefits [1]	
	December 31,			
(in Millions)	2019	2018	2019	2018
Prior service (cost) credit	$ (0.9)	$ (1.1)	$ —	$ (0.1)
Net actuarial (loss) gain	(367.3)	(370.6)	5.5	4.2
Accumulated other comprehensive income (loss) – pretax	**$ (368.2)**	**$ (371.7)**	**$ 5.5**	**$ 4.1**
Accumulated other comprehensive income (loss) – net of tax [2]	**(277.2)**	**(226.1)**	**3.7**	**2.6**

(1) Refer to Note 11 for information on our discontinued postretirement benefit plans.
(2) Accumulated other comprehensive income (loss) - net of tax as of December 31, 2019 includes the reclassification of stranded income tax effects. See Note 2 for more information.

The accumulated benefit obligation for all pension plans was $1,364.2 million and $1,248.8 million at December 31, 2019 and 2018, respectively.

(in Millions)	December 31	
Information for pension plans with projected benefit obligation in excess of plan assets	2019	2018
Projected benefit obligations	$ 37.2	$ 39.1
Accumulated benefit obligations	37.5	39.2
Fair value of plan assets	4.5	4.7

(in Millions)	December 31	
Information for pension plans with accumulated benefit obligation in excess of plan assets	2019	2018
Projected benefit obligations	$ 37.2	$ 39.1
Accumulated benefit obligations	37.5	39.2
Fair value of plan assets	4.5	4.7

Other changes in plan assets and benefit obligations for continuing operations recognized in other comprehensive loss (income) are as follows:

	Pensions		Other Benefits [1]	
	Year Ended December 31,			
(in Millions)	2019	2018	2019	2018
Current year net actuarial loss (gain)	$ 11.0	$ (8.7)	$ (2.3)	$ 0.8
Current year prior service cost (credit)	—	—	—	(0.1)
Amortization of net actuarial (loss) gain	(12.9)	(16.0)	1.0	0.5
Amortization of prior service (cost) credit	(0.2)	(0.4)	(0.1)	0.1
Recognition of prior service cost due to curtailment	—	(0.3)	—	—
Transfer of actuarial (loss) gain from continuing to discontinued operations	—	—	—	(0.1)
Curtailment loss [2]	—	(0.9)	—	—
Settlement loss	(1.4)	(1.8)	—	—
Foreign currency exchange rate changes on the above line items	—	(0.4)	—	—
Total recognized in other comprehensive (income) loss, before taxes	**$ (3.5)**	**$ (28.5)**	**$ (1.4)**	**$ 1.2**
Total recognized in other comprehensive (income) loss, after taxes	**(3.0)**	**(22.3)**	**(1.1)**	**0.9**

(1) Refer to Note 11 for information on our discontinued postretirement benefit plans.
(2) During the year ended December 31, 2018, due to the announced plans to separate FMC Lithium, we triggered a curtailment of our U.S. pension plans. As a result, we revalued our pension plans as of October 31, 2018 in addition to the normal December 31st remeasurement, which resulted in adjustments to comprehensive income. The $0.9 million in 2018 reflects the adjustment to the continuing operations liability and other comprehensive income based on the revaluation of the plan. The associated curtailment expense is recorded within "Non-operating pension and postretirement charges (income)" on the consolidated statements of income (loss).

The estimated net actuarial loss and prior service cost for our pension plans that will be amortized from accumulated other comprehensive income (loss) into our net annual benefit cost (income) during 2020 are $9.8 million and $0.2 million, respectively. The estimated net actuarial gain and prior service cost for our other benefits that will be amortized from accumulated other comprehensive income (loss) into net annual benefit cost (income) during 2020 will be $(0.9) million and zero, respectively.

The following table summarizes the weighted-average assumptions used for and the components of net annual benefit cost (income):

	Year Ended December 31,					
	Pensions			Other Benefits [1]		
(in Millions, except for percentages)	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Discount rate	4.36 %	3.68 %	4.22 %	4.08 %	3.41 %	3.77 %
Expected return on plan assets	4.25 %	5.00 %	6.50 %	—	—	—
Rate of compensation increase	3.10 %	3.10 %	3.60 %	—	—	—
Components of net annual benefit cost:						
Service cost	$ 4.2	$ 6.3	$ 7.4	$ —	$ —	$ —
Interest cost	47.6	44.5	44.3	0.6	0.7	0.7
Expected return on plan assets	(53.4)	(63.0)	(79.1)	—	—	—
Amortization of prior service cost	0.2	0.4	0.6	0.1	(0.1)	(0.1)
Amortization of net actuarial and other (gain) loss	12.9	16.0	15.5	(1.0)	(0.5)	(0.9)
Recognized (gain) loss due to settlement	1.4	1.8	3.2	—	—	—
Net annual benefit cost (income)	**$ 12.9**	**$ 6.0**	**$ (8.1)**	**$ (0.3)**	**$ 0.1**	**$ (0.3)**

(1) Refer to Note 11 for information on our discontinued postretirement benefit plans.

For the years ended December 31, 2018 and 2017, we recognized a $4.3 million loss due to curtailment and special termination benefits associated with the planned separation of FMC Lithium and a combined curtailment and termination benefits loss of $3.9 million associated with the disposal of our FMC Health and Nutrition Business, respectively, which were recorded within "Discontinued operations, net of income taxes" within the consolidated statements of income (loss).

For the year ended December 31, 2017, we recorded a settlement charge of $35.7 million. The settlement charge includes $3.2 million related to the non-qualified plan in the U.S. and a $32.5 million settlement charge related to the termination of the U.K. pension plan. The $32.5 million settlement charge was recorded within "Discontinued operations, net of income taxes" within the consolidated statements of income (loss).

Our U.S. qualified defined benefit pension plan (“U.S. Plan”) holds the majority of our pension plan assets. The expected long-term rate of return on these plan assets was 4.25 percent for the year ended December 31, 2019, 5.0 percent for the year ended December 31, 2018 (except for the period between the November 1, 2018 remeasurement and December 31, 2018 during which it was 4.5 percent), and 6.5 percent for the year ended December 31, 2017. The expected long-term rate of return on these plan assets decreased by 0.75 percent in 2019 compared to 2018, due to the 2019 portfolio consisting of a full year of 100 percent fixed income investments, whereas the prior year portfolio transitioned to 100 percent fixed income in October 2018. In developing the assumption for the long-term rate of return on assets for our U.S. Plan, we take into consideration the technical analysis performed by our outside actuaries, including historical market returns, information on the assumption for long-term real returns by asset class, inflation assumptions and expectations for standard deviation related to these best estimates. Given an actively managed investment portfolio, the expected annual rates of return by asset class for our portfolio, assuming an estimated inflation rate of approximately 2.1 percent, is in line with our assumption for the rate of return on assets. The target asset allocation at December 31, 2019 by asset category is 100 percent fixed income investments.

Our U.S. Plan reached fully funded status during 2018. The primary investment strategy is a liability hedging approach with an objective of maintaining the funded status of the plan such that the funded status volatility is minimized and the likelihood that we will be required to make significant contributions to the plan is limited. The portfolio is comprised of 100 percent fixed income securities and cash. Investment performance and related risks are measured and monitored on an ongoing basis through monthly liability measurements, periodic asset liability studies, and quarterly investment portfolio reviews.

The following tables present our fair value hierarchy for our major categories of pension plan assets by asset class. See Note 19 for the definition of fair value and the descriptions of Level 1, 2 and 3 in the fair value hierarchy.

(in Millions)	December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and short-term investments	$ 19.8	$ 19.8	$ —	$ —
Fixed income investments:				
Investment contracts	150.1	—	150.1	—
U.S. Government Securities	331.0	294.3	36.7	—
Mutual funds	65.2	65.2	—	—
Corporate debt instruments	824.5	—	824.5	—
Total assets	**$ 1,390.6**	**$ 379.3**	**$ 1,011.3**	**$ —**

(in Millions)	December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and short-term investments	$ 92.5	$ 92.5	$ —	$ —
Fixed income investments:				
Investment contracts	144.9	—	144.9	—
U.S. Government Securities	469.9	465.1	4.8	—
Mutual funds	55.7	55.7	—	—
Corporate debt instruments	506.7	—	506.7	—
Total assets	**$ 1,269.7**	**$ 613.3**	**$ 656.4**	**$ —**

We made the following contributions to our pension and other postretirement benefit plans:

	Year Ended December 31,	
(in Millions)	2019	2018
U.S. qualified pension plan	$ 7.0	$ 30.0
U.S. nonqualified pension plan	4.9	6.0
Other postretirement benefits	1.5	1.5
Total	**$ 13.4**	**$ 37.5**

The following table reflects the estimated future benefit payments for our pension and other postretirement benefit plans. These estimates take into consideration expected future service, as appropriate:

	Estimated Net Future Benefit Payments					
(in Millions)	**2020**	**2021**	**2022**	**2023**	**2024**	**2025 - 2029**
Pension Benefits	$ 90.2	$ 86.7	$ 86.9	$ 85.0	$ 85.3	$ 408.7
Other Benefits	1.7	1.6	1.5	1.5	1.4	5.4

Assumed health care cost trend rates have an effect on the other postretirement benefit obligations and net periodic other postretirement benefit costs reported for the health care portion of the other postretirement plan. A one-percentage point change in the assumed health care cost trend rates would be immaterial to our net periodic other postretirement benefit costs for the year ended December 31, 2019, and our other postretirement benefit obligation at December 31, 2019.

FMC Corporation Savings and Investment Plan. The FMC Corporation Savings and Investment Plan is a qualified salary-reduction plan under Section 401(k) of the Internal Revenue Code in which substantially all of our U.S. employees may participate by contributing a portion of their compensation. For eligible employees participating in the Plan, except for those employees covered by certain collective bargaining agreements, the Company makes matching contributions of 80 percent of the portion of those contributions up to 5 percent of the employee's compensation. Eligible employees participating in the Plan that do not participate in the U.S. qualified pension plan are entitled to receive an employer contribution of 5 percent of the employee's eligible compensation. Charges against income for all contributions were $15.3 million in 2019, $15.0 million in 2018, and $9.7 million in 2017.

Note 16: Share-based Compensation

Stock Compensation Plans

We have a share-based compensation plan, which has been approved by the stockholders, for certain employees, officers and directors. This plan is described below.

FMC Corporation Incentive Compensation and Stock Plan

The FMC Corporation Incentive Compensation and Stock Plan (the "Plan") provides for the grant of a variety of cash and equity awards to officers, directors, employees and consultants, including stock options, restricted stock, performance units (including restricted stock units), stock appreciation rights, and multi-year management incentive awards payable partly in cash and partly in common stock. The Compensation and Organization Committee of the Board of Directors (the "Committee"), subject to the provisions of the Plan, approves financial targets, award grants, and the times and conditions for payment of awards to employees. The total number of shares of common stock authorized for issuance under the Plan is 30.2 million of which approximately 3.5 million shares of common stock are available for future grants of share based awards under the Plan as of December 31, 2019. The FMC Corporation Non-Employee Directors' Compensation Policy, administered by the Nominating and Corporate Governance Committee of the Board of Directors, sets forth the compensation to be paid to the directors, including stock options, stock appreciation rights, restricted stock, restricted stock units, performance-based restricted stock units, and cash awards to be made to directors under the Plan.

Stock options granted under the Plan may be incentive or nonqualified stock options. The exercise price for stock options may not be less than the fair market value of the stock at the date of grant. Awards granted under the Plan vest or become exercisable or payable at the time designated by the Committee, which has generally been three years from the date of grant. Incentive and nonqualified options granted under the Plan expire no later than 10 years from the grant date.

Under the Plan, awards of restricted stock and restricted stock units may be made to selected employees. The awards vest over periods designated by the Committee, which has generally been three years, with vesting conditional upon continued employment. Compensation cost is recognized over the vesting periods based on the market value of the stock on the date of the award. Restricted stock units granted to directors under the Plan vest immediately if granted as part of, or in lieu of, the annual retainer; other restricted stock units granted to directors vest at the Annual Meeting of Shareholders in the calendar year following the May 1 annual grant date (but are subject to forfeiture on a pro rata basis if the director does not serve the full year except under certain circumstances).

At December 31, 2019 and 2018, there were restricted stock units representing an aggregate of 276,145 shares and 248,465 shares of common stock, respectively, credited to the directors' accounts.

Stock Compensation

We recognized the following stock compensation expense:

	Year Ended December 31,		
(in Millions)	**2019**	**2018**	**2017**
Stock option expense, net of taxes of $1.5, $1.3 and $2.4 (1)	$ 5.7	$ 4.9	$ 4.5
Restricted stock expense, net of taxes of $2.2, $2.3 and $3.5 (2)	8.2	8.4	6.4
Performance based expense, net of taxes of $1.7, $1.2 and $1.5	6.3	4.4	2.8
Total stock compensation expense, net of taxes of $5.4, $4.8 and $7.4 (3)	**$ 20.2**	**$ 17.7**	**$ 13.7**

____

(1) We applied an estimated forfeiture rate of 4.0% per stock option grant in the calculation of the expense.
(2) We applied an estimated forfeiture rate of 2.0% of outstanding grants in the calculation of the expense.
(3) This expense is classified as "Selling, general and administrative expenses" in our consolidated statements of income (loss). Total stock compensation expense, net of tax, not included in the above table of $0.1 million, $4.0 million, and $4.4 million for the years ended December 31, 2019, 2018 and 2017, respectively, is included in "Discontinued operations, net of income taxes" in the consolidated statements of income (loss).

We received $50.7 million, $10.7 million and $22.5 million in cash related to stock option exercises for the years ended December 31, 2019, 2018 and 2017, respectively. The shares used for the exercise of stock options occurring during the years ended December 31, 2019, 2018 and 2017 came from treasury shares.

Impacts of Livent Distribution

On March 1, 2019, we completed the previously announced distribution of 123 million shares of common stock of Livent as a pro rata dividend on shares of FMC common stock outstanding at the close of business on the record date of February 25, 2019. All outstanding and nonvested equity awards relating to FMC's stock immediately prior to the effective date were generally converted into FMC and Livent units pursuant to the employee matters agreement.

Stock Options

The grant-date fair values of the stock options we granted in the years ended December 31, 2019, 2018 and 2017 were estimated using the Black-Scholes option valuation model, the key assumptions for which are listed in the table below. The dividend yield assumption reflects anticipated dividends on our common stock. The expected volatility assumption is based on the actual historical experience of our common stock. The expected life represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on U.S. Treasury securities with terms equal to the expected timing of stock option exercises as of the grant date. Employee stock options generally vest after a three year period and expire ten years from the date of grant.

Black Scholes valuation assumptions for stock option grants:

	2019	**2018**	**2017**
Expected dividend yield	1.83%	0.77%	1.15%
Expected volatility	26.07%	26.85%	27.04%
Expected life (in years)	6.5	6.5	6.5
Risk-free interest rate	2.53%	2.79%	2.10%

The weighted-average grant-date fair value of options granted during the years ended December 31, 2019, 2018 and 2017 was $18.66, $25.70 and $15.66 per share, respectively.

The following summary shows stock option activity for employees under the Plan for the three years ended December 31, 2019:

(Shares in Thousands)	Number of Options Granted But Not Exercised	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price Per Share	Aggregate Intrinsic Value (in Millions)
December 31, 2016 (1,292 shares exercisable and 1,373 shares expected to vest or be exercised)	**2,749**	**6.1 years**	**$ 45.34**	**$ 37.6**
Granted	370		57.63	
Exercised	(590)		39.93	20.1
Forfeited	(94)		49.10	
December 31, 2017 (920 shares exercisable and 1,452 shares expected to vest or be exercised)	**2,435**	**6.3 years**	**$ 48.37**	**$ 112.7**
Granted	250		85.19	
Exercised	(260)		41.80	11.7
Forfeited	(61)		52.51	
December 31, 2018 (1,044 shares exercisable and 1,287 shares expected to vest or be exercised)	**2,364**	**6.0 years**	**$ 52.87**	**$ 52.5**
Granted	380		75.76	
Conversion impact from Livent spin (1)	210		53.09	
Exercised	(1,414)		39.17	67.2
Forfeited	(36)		67.82	
December 31, 2019 (628 shares exercisable and 835 shares expected to vest or be exercised)	**1,504**	**6.5 years**	**$ 58.06**	**$ 62.8**

(1) Awards converted as a result of March 1, 2019 Livent separation.

The number of stock options indicated in the above table as being exercisable as of December 31, 2019, had an intrinsic value of $33.2 million, a weighted-average remaining contractual term of 4.2 years, and a weighted-average exercise price of $47.02.

As of December 31, 2019, we had total remaining unrecognized compensation cost related to unvested stock options of $3.9 million which will be amortized over the weighted-average remaining requisite service period of approximately 1.79 years.

Restricted and Performance Based Equity Awards

The grant-date fair value of restricted stock awards and stock units under the Plan is based on the market price per share of our common stock on the date of grant. The related compensation cost is amortized to expense on a straight-line basis over the vesting period during which the employees perform related services, which is typically three years except for those eligible for retirement prior to the stated vesting period as well as non-employee directors.

Starting in 2015, we began granting performance based restricted stock awards. The performance based share awards represent a number of shares of common stock to be awarded upon settlement based on the achievement of a total shareholder return ("TSR") relative to peer companies over a three year period. These awards generally vest upon the completion of a three year period from the date of grant; however, starting with the 2016 grants, certain performance criteria is measured on an annual basis. Starting with the 2019 grants, vesting was based on a TSR relative to peer companies and a cumulative operating cash flow metric. The fair value of the equity classified performance-based share awards is determined based on the number of shares of common stock expected to be awarded and a Monte Carlo valuation model.

The following table shows our employee restricted award activity for the three years ended December 31, 2019:

	Restricted Equity		Performance Based Equity	
(Number of Awards in Thousands)	**Number of awards**	**Weighted-Average Grant Date Fair Value Per Share**	**Number of awards**	**Weighted-Average Grant Date Fair Value Per Share**
Nonvested at December 31, 2016	**496**	**$ 48.56**	**158**	**$ 49.55**
Granted	121	57.66	105	66.93
Vested	(98)	64.75	—	—
Forfeited	(30)	47.60	(3)	52.74
Nonvested at December 31, 2017	**489**	**$ 47.63**	**260**	**$ 53.36**
Granted	137	84.94	133	88.65
Vested	(154)	55.14	(58)	81.15
Forfeited	(13)	65.39	—	—
Nonvested at December 31, 2018	**459**	**$ 55.75**	**335**	**$ 56.42**
Granted	108	76.22	106	83.89
Conversion impact from Livent spin [(1)]	(29)	67.46	(12)	84.58
Vested	(223)	37.54	(222)	42.18
Forfeited	(13)	69.69	(1)	78.92
Nonvested at December 31, 2019	**302**	**$ 67.89**	**206**	**$ 72.06**

(1) Awards transferred to Livent employees as a result of March 1, 2019 Livent separation.

As of December 31, 2019, we had total remaining unrecognized compensation cost related to unvested restricted awards of $10.0 million which will be amortized over the weighted-average remaining requisite service period of approximately 1.77 years.

Note 17: Equity

The following is a summary of our capital stock activity over the past three years:

	Common Stock Shares	Treasury Stock Shares
December 31, 2016	185,983,792	52,293,686
Stock options and awards	—	(640,450)
December 31, 2017	185,983,792	51,653,236
Stock options and awards	—	(390,553)
Repurchases of common stock, net	—	2,439,495
December 31, 2018	185,983,792	53,702,178
Stock options and awards	—	(1,563,307)
Repurchases of common stock, net	—	4,720,627
December 31, 2019	**185,983,792**	**56,859,498**

Accumulated other comprehensive income (loss)

Summarized below is the roll forward of accumulated other comprehensive income (loss), net of tax.

(in Millions)	Foreign currency adjustments	Derivative Instruments [1]	Pension and other postretirement benefits [2]	Total
Accumulated other comprehensive income (loss), net of tax at December 31, 2016	**$ (194.0)**	**$ 7.1**	**$ (291.5)**	**$ (478.4)**
2017 Activity				
Other comprehensive income (loss) before reclassifications	$ 173.9	$ (1.2)	$ 0.6	$ 173.3
Amounts reclassified from accumulated other comprehensive income (loss)	13.9	(0.7)	51.6	64.8
Accumulated other comprehensive income (loss), net of tax at December 31, 2017	**$ (6.2)**	**$ 5.2**	**$ (239.3)**	**$ (240.3)**
2018 Activity				
Other comprehensive income (loss) before reclassifications	$ (95.3)	$ 13.7	$ 4.2	$ (77.4)
Amounts reclassified from accumulated other comprehensive income (loss)	—	(7.7)	16.5	8.8
Accumulated other comprehensive income (loss), net of tax at December 31, 2018	**$ (101.5)**	**$ 11.2**	**$ (218.6)**	**$ (308.9)**
2019 Activity				
Other comprehensive income (loss) before reclassifications	$ (15.2)	$ (69.0)	$ (6.5)	$ (90.7)
Amounts reclassified from accumulated other comprehensive income (loss)	—	(8.2)	9.9	1.7
Net current period other comprehensive income (loss)	$ (15.2)	$ (77.2)	$ 3.4	$ (89.0)
Adoption of accounting standard (Note 2)	—	1.0	(54.1)	(53.1)
Distribution of FMC Lithium [3]	39.0	—	—	39.0
Accumulated other comprehensive income (loss), net of tax at December 31, 2019	**$ (77.7)**	**$ (65.0)**	**$ (269.3)**	**$ (412.0)**

(1) See Note 19 for more information.
(2) See Note 15 for more information.
(3) Represents the effects of the distribution of FMC Lithium. Refer to Note 1 for further information.

Reclassifications of accumulated other comprehensive income (loss)

The table below provides details about the reclassifications from accumulated other comprehensive income (loss) and the affected line items in the consolidated statements of income (loss) for each of the periods presented.

Details about Accumulated Other Comprehensive Income (Loss) Components	Amounts Reclassified from Accumulated Other Comprehensive Income (Loss) [1]			Affected Line Item in the Consolidated Statements of Income (Loss)
	Year Ended December 31,			
(in Millions)	2019	2018	2017	
Foreign currency translation adjustments:				
Divestiture of FMC Health and Nutrition [2]	$ —	$ —	$ (13.9)	Discontinued operations, net of income taxes
Derivative instruments:				
Foreign currency contracts	$ 10.0	$ 18.9	$ (10.0)	Costs of sales and services
Energy contracts	—	—	0.8	Costs of sales and services
Foreign currency contracts	1.9	(8.0)	10.0	Selling, general and administrative expenses
Interest rate contracts	(0.7)	(0.4)	—	Interest expense
Total before tax	**$ 11.2**	**$ 10.5**	**$ 0.8**	
	(3.0)	(2.8)	(0.1)	Provision for income taxes
Amount included in net income	**$ 8.2**	**$ 7.7**	**$ 0.7**	
Pension and other postretirement benefits [3]:				
Amortization of prior service costs	$ (0.3)	$ (0.3)	$ (0.5)	Selling, general and administrative expenses
Amortization of unrecognized net actuarial and other gains (losses)	(10.8)	(14.4)	(14.4)	Selling, general and administrative expenses
Recognized loss due to settlement/curtailment	(1.4)	(6.1)	(51.2)	Selling, general and administrative expenses; Discontinued operations, net of income taxes [4]
Total before tax	**$ (12.5)**	**$ (20.8)**	**$ (66.1)**	
	2.6	4.3	14.5	Provision for income taxes
Amount included in net income	**$ (9.9)**	**$ (16.5)**	**$ (51.6)**	
Total reclassifications for the period	**$ (1.7)**	**$ (8.8)**	**$ (64.8)**	Amount included in net income

(1) Amounts in parentheses indicate charges to the consolidated statements of income (loss).
(2) The reclassification of historical cumulative translation adjustments was the result of the sale of our FMC Health and Nutrition and Omega-3 business. The loss recognized from this reclassification is considered permanent for tax purposes and therefore no tax has been provided. See Note 11 within these consolidated financial statements for more information. In accordance with accounting guidance, this amount was previously factored into the lower of cost or fair value test associated with the Omega-3 asset held for sale write-down charges.
(3) Pension and other postretirement benefits amounts include the impact from both continuing and discontinued operations. For detail on the continuing operations components of pension and other postretirement benefits, see Note 15.
(4) The loss due to curtailment for the year ended December 31, 2017 related to the disposal of FMC Health and Nutrition was recorded to "Discontinued operations, net of income taxes" on the consolidated statements of income (loss).

Transactions with Noncontrolling Interest

As a result of the IPO and underwriters' exercise to purchase additional shares of common stock in the fourth quarter of 2018, our controlling interest in FMC Lithium was approximately 84 percent. On March 1, 2019, we completed the previously announced distribution of the remaining shares of common stock of Livent. See Note 1 for further information.

As part of the DuPont Crop Protection Business Acquisition, we acquired an 80 percent controlling interest in DuPont Agricultural Chemicals Limited, Shanghai, a joint venture registered in the People's Republic of China.

During the first quarter of 2017, we terminated our interest in a variable interest entity. See Note 9 for more information.

Dividends and Share Repurchases

On January 16, 2020, we paid dividends totaling $57.0 million to our shareholders of record as of December 31, 2019. This amount is included in "Accrued and other liabilities" on the consolidated balance sheets as of December 31, 2019. For the years ended December 31, 2019, 2018 and 2017, we paid $210.3 million, $89.2 million and $88.8 million in dividends, respectively.

In 2019, 4.7 million shares were repurchased under the publicly announced repurchase program. At December 31, 2019, approximately $600 million remained unused under our Board-authorized repurchase program. This repurchase program does not include a specific timetable or price targets and may be suspended or terminated at any time. Shares may be purchased through open market or privately negotiated transactions at the discretion of management based on its evaluation of market conditions and other factors. We also reacquire shares from time to time from employees in connection with the vesting, exercise and forfeiture of awards under our equity compensation plans.

Note 18: Earnings Per Share

Earnings per common share ("EPS") is computed by dividing net income by the weighted average number of common shares outstanding during the period on a basic and diluted basis.

Our potentially dilutive securities include potential common shares related to our stock options, restricted stock and restricted stock units. Diluted earnings per share ("Diluted EPS") considers the impact of potentially dilutive securities except in periods in which there is a loss because the inclusion of the potential common shares would have an antidilutive effect. Diluted EPS excludes the impact of potential common shares related to our stock options in periods in which the option exercise price is greater than the average market price of our common stock for the period. For the years ended December 31, 2019 and 2018, there were 0.3 million and 0.2 million potential common shares excluded from Diluted EPS, respectively. For the year ended December 31, 2017, we had a net loss from continuing operations attributable to FMC stockholders. As a result, all 1.5 million potential common shares were excluded from Diluted EPS.

Our non-vested restricted stock awards contain rights to receive non-forfeitable dividends, and thus, are participating securities requiring the two-class method of computing EPS. The two-class method determines EPS by dividing the sum of distributed earnings to common stockholders and undistributed earnings allocated to common stockholders by the weighted average number of shares of common stock outstanding for the period. In calculating the two-class method, undistributed earnings are allocated to both common shares and participating securities based on the weighted average shares outstanding during the period.

Earnings applicable to common stock and common stock shares used in the calculation of basic and diluted earnings per share are as follows:

	Year Ended December 31,		
(in Millions, Except Share and Per Share Data)	2019	2018	2017
Earnings (loss) attributable to FMC stockholders:			
Continuing operations, net of income taxes	$ 540.7	$ 531.4	$ (135.7)
Discontinued operations, net of income taxes	(63.3)	(29.3)	671.5
Net income (loss) attributable to FMC stockholders	**$ 477.4**	**$ 502.1**	**$ 535.8**
Less: Distributed and undistributed earnings allocable to restricted award holders	(1.5)	(2.4)	—
Net income (loss) allocable to common stockholders	**$ 475.9**	**$ 499.7**	**$ 535.8**
Basic earnings (loss) per common share attributable to FMC stockholders:			
Continuing operations	$ 4.12	$ 3.94	$ (1.01)
Discontinued operations	(0.48)	(0.22)	5.00
Net income (loss)	**$ 3.64**	**$ 3.72**	**$ 3.99**
Diluted earnings (loss) per common share attributable to FMC stockholders:			
Continuing operations	$ 4.10	$ 3.91	$ (1.01)
Discontinued operations	(0.48)	(0.22)	5.00
Net income (loss)	**$ 3.62**	**$ 3.69**	**$ 3.99**
Shares (in thousands):			
Weighted average number of shares of common stock outstanding - Basic	130,761	134,406	134,255
Weighted average additional shares assuming conversion of potential common shares	1,241	1,473	—
Shares – diluted basis	**132,002**	**135,879**	**134,255**

Note 19: Financial Instruments, Risk Management and Fair Value Measurements

Our financial instruments include cash and cash equivalents, trade receivables, other current assets, certain receivables classified as other long-term assets, accounts payable, and amounts included in investments and accruals meeting the definition of financial instruments. The carrying value of these financial instruments approximates their fair value. Our other financial instruments include the following:

Financial Instrument	Valuation Method
Foreign exchange forward contracts	Estimated amounts that would be received or paid to terminate the contracts at the reporting date based on current market prices for applicable currencies.
Commodity forward and option contracts	Estimated amounts that would be received or paid to terminate the contracts at the reporting date based on quoted market prices for applicable commodities.
Debt	Our estimates and information obtained from independent third parties using market data, such as bid/ask spreads for the last business day of the reporting period.

The estimated fair value of the financial instruments in the above table have been determined using standard pricing models which take into account the present value of expected future cash flows discounted to the balance sheet date. These standard pricing models utilize inputs derived from, or corroborated by, observable market data such as interest rate yield curves and currency and commodity spot and forward rates. In addition, we test a subset of our valuations against valuations received from the transaction's counterparty to validate the accuracy of our standard pricing models. Accordingly, the estimates presented may not be indicative of the amounts that we would realize in a market exchange at settlement date and do not represent potential gains or losses on these agreements. The estimated fair values of foreign exchange forward contracts, commodity forward and option contracts and interest rate contracts are included in the tables within this Note. The estimated fair value of debt is $3,393.8 million and $2,715.2 million and the carrying amount is $3,258.8 million and $2,692.7 million as of December 31, 2019 and December 31, 2018, respectively.

Use of Derivative Financial Instruments to Manage Risk

We mitigate certain financial exposures, including currency risk, commodity purchase exposures and interest rate risk through a program of risk management that includes the use of derivative financial instruments. We enter into foreign exchange contracts, including forward and purchased option contracts, to reduce the effects of fluctuating foreign currency exchange rates.

We formally document all relationships between hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions. This process includes relating derivatives that are designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific firm commitments or forecasted transactions. We also assess both at the inception of the hedge and on an ongoing basis, whether each derivative is highly effective in offsetting changes in fair values or cash flows of the hedged item. If we determine that a derivative is not highly effective as a hedge, or if a derivative ceases to be a highly effective hedge, we discontinue hedge accounting with respect to that derivative prospectively.

Foreign Currency Exchange Risk Management

We conduct business in many foreign countries, exposing earnings, cash flows, and our financial position to foreign currency risks. The majority of these risks arise as a result of foreign currency transactions. Our policy is to minimize exposure to adverse changes in currency exchange rates. This is accomplished through a controlled program of risk management that includes the use of foreign currency debt and forward foreign exchange contracts. We also use forward foreign exchange contracts to hedge firm and highly anticipated foreign currency cash flows, with an objective of balancing currency risk to provide adequate protection from significant fluctuations in the currency markets.

The primary currencies for which we have exchange rate exposure are the U.S. dollar versus the Brazilian Real, the Euro, the Chinese yuan, the Mexican peso, Indian rupee and the Argentine peso.

Commodity Price Risk

We are exposed to risks in energy costs due to fluctuations in energy prices, particularly natural gas. We attempt to mitigate our exposure to increasing energy costs by hedging the cost of future deliveries of natural gas.

Interest Rate Risk

We use various strategies to manage our interest rate exposure, including entering into interest rate swap agreements to achieve a targeted mix of fixed and variable-rate debt. In the agreements we exchange, at specified intervals, the difference between fixed and variable-interest amounts calculated on an agreed-upon notional principal amount.

Concentration of Credit Risk

Our counterparties to derivative contracts are primarily major financial institutions. We limit the dollar amount of contracts entered into with any one financial institution and monitor counterparties’ credit ratings. We also enter into master netting agreements with each financial institution, where possible, which helps mitigate the credit risk associated with our financial instruments. While we may be exposed to credit losses due to the nonperformance of counterparties, we consider this risk remote.

Financial Guarantees and Letter-of-Credit Commitments

We enter into various financial instruments with off-balance sheet risk as part of the normal course of business. These off-balance sheet instruments include financial guarantees and contractual commitments to extend financial guarantees under letters of credit and other assistance to customers. See Notes 1 and 20 for more information. Decisions to extend financial guarantees to customers, and the amount of collateral required under these guarantees, is based on our evaluation of creditworthiness on a case-by-case basis.

Accounting for Derivative Instruments and Hedging Activities

Cash Flow Hedges

We recognize all derivatives on the balance sheet at fair value. On the date we enter into the derivative instrument, we generally designate the derivative as a hedge of the variability of cash flows to be received or paid related to a forecasted transaction (cash flow hedge). We record in AOCI changes in the fair value of derivatives that are designated as, and meet all the required criteria for, a cash flow hedge. We then reclassify these amounts into earnings as the underlying hedged item affects earnings. In contrast we immediately record in earnings changes in the fair value of derivatives that are not designated as cash flow hedges.

As of December 31, 2019, we had open foreign currency forward contracts in AOCI in a net after-tax loss position of $0.4 million designated as cash flow hedges of underlying forecasted sales and purchases. Current open contracts hedge forecasted transactions until December 31, 2020. At December 31, 2019, we had open forward contracts with various expiration dates to buy, sell or exchange foreign currencies with a U.S. dollar equivalent of approximately $1,633 million.

As of December 31, 2019, we had open interest rate contracts in AOCI in a net after-tax loss position of $0.7 million designated as cash flow hedges of underlying floating rate interest payments on a portion of our variable-rate debt. At December 31, 2019 we had interest rate swap contracts outstanding with a total aggregate notional value of approximately $200 million.

In conjunction with the issuance of the Senior Notes, on September 20, 2019 we settled on various interest rate swap agreements which were entered into to hedge the variability in treasury rates. This settlement resulted in a loss of $83.1 million which was recorded in other comprehensive income and will be amortized over the various terms of the Senior Notes. Refer to Note 14 for further details on the Senior Notes.

As of December 31, 2019, we had no open commodity contracts in AOCI designated as cash flow hedges of underlying forecasted purchases. At December 31, 2019, we had no mmBTUs (millions of British Thermal Units) in aggregate notional volume of outstanding natural gas commodity forward contracts.

Approximately $1.0 million of net after-tax losses, representing open foreign currency exchange contracts, option contracts and interest rate contracts will be realized in earnings during the twelve months ending December 31, 2020 if spot rates in the future are consistent with forward rates as of December 31, 2019. The actual effect on earnings will be dependent on the actual spot rates when the forecasted transactions occur. We recognize derivative gains and losses in the “Costs of sales and services” line in the consolidated statements of income (loss).

Derivatives Not Designated As Hedging Instruments

We hold certain forward contracts that have not been designated as cash flow hedging instruments for accounting purposes. Contracts used to hedge the exposure to foreign currency fluctuations associated with certain monetary assets and liabilities are not designated as cash flow hedging instruments, and changes in the fair value of these items are recorded in earnings.

We had open forward contracts not designated as cash flow hedging instruments for accounting purposes with various expiration dates to buy, sell or exchange foreign currencies with a U.S. dollar equivalent of approximately $1,264 million at December 31, 2019.

Fair Value of Derivative Instruments

The following tables provide the gross fair value and net balance sheet presentation of our derivative instruments as of December 31, 2019 and 2018.

	December 31, 2019				
	Gross Amount of Derivatives				
(in Millions)	Designated as Cash Flow Hedges	Not Designated as Hedging Instruments	Total Gross Amounts	Gross Amounts Offset in the Consolidated Balance Sheet [(3)]	Net Amounts
Derivatives					
Foreign exchange contracts	$ 8.0	$ 0.3	$ 8.3	$ (8.1)	$ 0.2
Total derivative assets [(1)]	**$ 8.0**	**$ 0.3**	**$ 8.3**	**$ (8.1)**	**$ 0.2**
Foreign exchange contracts	$ (12.1)	$ (4.2)	$ (16.3)	$ 8.1	$ (8.2)
Interest rate contracts	(0.9)	—	(0.9)	$ —	(0.9)
Total derivative liabilities [(2)]	**$ (13.0)**	**$ (4.2)**	**$ (17.2)**	**$ 8.1**	**$ (9.1)**
Net derivative assets (liabilities)	**$ (5.0)**	**$ (3.9)**	**$ (8.9)**	**$ —**	**$ (8.9)**

	December 31, 2018				
	Gross Amount of Derivatives				
(in Millions)	Designated as Cash Flow Hedges	Not Designated as Hedging Instruments	Total Gross Amounts	Gross Amounts Offset in the Consolidated Balance Sheet [(3)]	Net Amounts
Derivatives					
Foreign exchange contracts	$ 18.3	$ 1.5	$ 19.8	$ (8.1)	$ 11.7
Total derivative assets [(1)]	**$ 18.3**	**$ 1.5**	**$ 19.8**	**$ (8.1)**	**$ 11.7**
Foreign exchange contracts	$ (8.0)	$ (0.2)	$ (8.2)	$ 8.1	$ (0.1)
Interest rate contracts	(0.2)	—	(0.2)	—	(0.2)
Total derivative liabilities [(2)]	**$ (8.2)**	**$ (0.2)**	**$ (8.4)**	**$ 8.1**	**$ (0.3)**
Net derivative assets (liabilities)	**$ 10.1**	**$ 1.3**	**$ 11.4**	**$ —**	**$ 11.4**

(1) Net balance is included in “Prepaid and other current assets” in the consolidated balance sheets.
(2) Net balance is included in “Accrued and other liabilities” in the consolidated balance sheets.
(3) Represents net derivatives positions subject to master netting arrangements.

The following tables summarize the gains or losses related to our cash flow hedges and derivatives not designated as hedging instruments.

Derivatives in Cash Flow Hedging Relationships

	Contracts			
(in Millions)	Foreign exchange	Energy	Interest rate	Total
Accumulated other comprehensive income (loss), net of tax at December 31, 2016	**$ 4.6**	**$ 1.4**	**$ 1.1**	**$ 7.1**
2017 Activity				
Unrealized hedging gains (losses) and other, net of tax	$ (0.4)	$ (0.8)	$ —	$ (1.2)
Reclassification of deferred hedging (gains) losses, net of tax [1]	0.2	(0.6)	(0.3)	(0.7)
Total derivative instrument impact on comprehensive income, net of tax	$ (0.2)	$ (1.4)	$ (0.3)	$ (1.9)
Accumulated other comprehensive income (loss), net of tax at December 31, 2017	**$ 4.4**	**$ —**	**$ 0.8**	**$ 5.2**
2018 Activity				
Unrealized hedging gains (losses) and other, net of tax	$ 14.2	$ —	$ (0.5)	$ 13.7
Reclassification of deferred hedging (gains) losses, net of tax [1]	(8.2)	—	0.5	(7.7)
Total derivative instrument impact on comprehensive income, net of tax	$ 6.0	$ —	$ —	$ 6.0
Accumulated other comprehensive income (loss), net of tax at December 31, 2018	**$ 10.4**	**$ —**	**$ 0.8**	**$ 11.2**
2019 Activity				
Unrealized hedging gains (losses) and other, net of tax	$ (3.1)	$ —	$ (65.9)	$ (69.0)
Reclassification of deferred hedging (gains) losses, net of tax [1]	(8.7)	—	0.5	(8.2)
Total derivative instrument impact on comprehensive income, net of tax	$ (11.8)	$ —	$ (65.4)	$ (77.2)
Accumulated other comprehensive income (loss), net of tax at December 31, 2019	**$ (1.4)**	**$ —**	**$ (64.6)**	**$ (66.0)**

(1) Amounts are included in “Costs of sales and services” and "Interest expense" on the consolidated statements of income (loss).

Derivatives Not Designated as Hedging Instruments

	Amount of Pre-tax Gain (Loss) Recognized in Income on Derivatives [1]		
	Year Ended December 31,		
(in Millions)	2019	2018	2017
Foreign exchange contracts	$ (26.7)	$ (10.9)	$ (12.5)
Total	**$ (26.7)**	**$ (10.9)**	**$ (12.5)**

(1) Amounts in the columns represent the gain or loss on the derivative instrument offset by the gain or loss on the hedged item. These amounts are included in “Costs of sales and services” on the consolidated statements of income (loss).

Fair Value Measurements

Fair value is 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. Market participants are defined as buyers or sellers in the principle or most advantageous market for the asset or liability that are independent of the reporting entity, knowledgeable and able and willing to transact for the asset or liability.

Fair Value Hierarchy

We have categorized our assets and liabilities that are recorded at fair value, based on the priority of the inputs to the valuation technique, into a three-level fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure the assets and liabilities fall within different levels of the hierarchy, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

Recurring Fair Value Measurements

The following tables present our fair value hierarchy for those assets and liabilities measured at fair value on a recurring basis in our consolidated balance sheets.

(in Millions)	December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Derivatives – Foreign exchange (1)	$ 0.2	$ —	$ 0.2	$ —
Other (2)	20.2	20.2	—	—
Total Assets	**$ 20.4**	**$ 20.2**	**$ 0.2**	**$ —**
Liabilities				
Derivatives – Foreign exchange (1)	$ 8.2	$ —	$ 8.2	$ —
Derivatives - Interest Rate (1)	0.9	—	0.9	—
Other (3)	32.8	29.7	3.1	—
Total Liabilities	**$ 41.9**	**$ 29.7**	**$ 12.2**	**$ —**

(in Millions)	December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Derivatives – Foreign exchange (1)	$ 11.7	$ —	$ 11.7	$ —
Other (2)	17.7	17.7	—	—
Total Assets	**$ 29.4**	**$ 17.7**	**$ 11.7**	**$ —**
Liabilities				
Derivatives – Foreign exchange (1)	$ 0.1	$ —	$ 0.1	$ —
Derivatives - Interest Rate (1)	0.2	—	0.2	—
Other (3)	27.4	24.3	3.1	—
Total Liabilities	**$ 27.7**	**$ 24.3**	**$ 3.4**	**$ —**

____

(1) See the Fair Value of Derivative Instruments table within this Note for classifications on our consolidated balance sheets.

(2) Consists of a deferred compensation arrangement, through which we hold various investment securities, recognized on our balance sheet. Both the asset and liability are recorded at fair value. Asset amounts included in “Other assets including long-term receivables, net” in the consolidated balance sheets.

(3) Primarily consists of a deferred compensation arrangement recognized on our balance sheet. Both the asset and liability are recorded at fair value. Liability amounts included in “Other long-term liabilities” in the consolidated balance sheets.

Nonrecurring Fair Value Measurements

The following table presents our fair value hierarchy for those assets and liabilities measured at fair value on a non-recurring basis in our consolidated balance sheets during the year ended December 31, 2018. There were no non-recurring fair value measurements in the consolidated balance sheets during the year ended December 31, 2019.

(in Millions)	December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Gains (Losses) (Year Ended December 31, 2018)
Assets					
Impairment of intangibles (1)	$ 3.1	$ —	$ —	$ 3.1	$ (1.8)
Total Assets	**$ 3.1**	**$ —**	**$ —**	**$ 3.1**	**$ (1.8)**

____

(1) We recorded an impairment charge to write down the carrying value of the generic brand portfolio of approximately $2 million to its fair value.

Note 20: Guarantees, Commitments and Contingencies

We continue to monitor the conditions that are subject to guarantees and indemnifications to identify whether a liability must be recognized in our financial statements.

The following table provides the estimated undiscounted amount of potential future payments for each major group of guarantees at December 31, 2019. These guarantees arise during the ordinary course of business from relationships with customers and nonconsolidated affiliates. Non-performance by the guaranteed party triggers the obligation requiring us to make payments to the beneficiary of the guarantee. Based on our experience these types of guarantees have not had a material effect on our consolidated financial position or on our liquidity. Our expectation is that future payment or performance related to the non-performance of others is considered unlikely.

(in Millions)	
Guarantees:	
Guarantees of vendor financing - short term (1)	$ 75.7
Other debt guarantees (2)	2.1
Total	**$ 77.8**

____

(1) Represents guarantees to financial institutions on behalf of certain customers for their seasonal borrowing. The short-term amount is recorded as “Guarantees of vendor financing” on the consolidated balance sheets.

(2) These guarantees represent support provided to third-party banks for credit extended to various customers and nonconsolidated affiliates. The liability for the guarantees is recorded at an amount that approximates fair value (i.e. representing the stand-ready obligation) based on our historical collection experience and a current assessment of credit exposure. We believe the fair value of these guarantees is immaterial. The majority of these guarantees have an expiration date of less than one year.

Excluded from the chart above are parent-company guarantees we provide to lending institutions that extend credit to our foreign subsidiaries. Since these guarantees are provided for consolidated subsidiaries, the consolidated financial position is not affected by the issuance of these guarantees. Also excluded from the chart, in connection with our property and asset sales and divestitures, we have agreed to indemnify the buyer for certain liabilities, including environmental contamination and taxes that occurred prior to the date of sale or provided guarantees to third parties relating to certain contracts assumed by the buyer. Our indemnification or guarantee obligations with respect to certain liabilities may be indefinite as to duration and may or may not be subject to a deductible, minimum claim amount or cap. As such, it is not possible for us to predict the likelihood that a claim will be made or to make a reasonable estimate of the maximum potential loss or range of loss. If triggered, we may be able to recover some of the indemnity payments from third parties. Therefore, we have not recorded any specific liabilities for these guarantees. For certain obligations related to our divestitures for which we can make a reasonable estimate of the maximum potential loss or range of loss and is probable, a liability in those instances has been recorded.

Commitments

Purchase Obligations

Our minimum commitments under our take-or-pay purchase obligations associated with the sourcing of materials and energy total approximately $1,126 million. Since the majority of our minimum obligations under these contracts are over the life of the contract on a year-by-year basis, we are unable to determine the periods in which these obligations could be payable under these contracts. However, we intend to fulfill the obligations associated with these contracts through our purchases associated with the normal course of business.

Contingencies

Livent Corporation class action. On May 13, 2019, purported stockholders of our former subsidiary Livent Corporation ("Livent") filed a putative class action complaint in the Pennsylvania Court of Common Pleas, Philadelphia County, in connection with Livent's October 2018 initial public offering (the "Livent IPO"). The complaint in this case, *Plymouth County Retirement Association v. Livent Corp.*, *et al.*, named as defendants Livent, certain of its current and former executives and directors, FMC Corporation, and underwriters involved in the Livent IPO ("Defendants"). The complaint alleges generally that the offering documents for the Livent IPO failed to adequately disclose certain information related to Livent's business and prospects. The complaint alleges violations of Sections 11, 12(a)(2), and 15 of the Securities Act of 1933 and seeks unspecified damages and other relief on behalf of all persons and entities who purchased or otherwise acquired Livent common stock pursuant and/or traceable to the Livent IPO offering documents. On July 2, 2019, defendants moved to stay the *Plymouth County* action, in favor of two similar putative class actions relating to the Livent IPO, in which FMC had not been named as a defendant, which are pending in the United States District Court of the Eastern District of Pennsylvania. On July 18, 2019, a separate state action was filed against the same defendants in the Pennsylvania Court of Common Pleas, Philadelphia County, *Bizzaria v. Livent Corp.*, *et al*. On July 26, 2019, *Plymouth County* filed an amended complaint in its state court case. On September 23, 2019, the actions were consolidated under the caption *In re Livent Corporation Securities Litigation*, No. 190501229. On October 11, 2019, defendants filed preliminary objections seeking to dismiss the case in its entirety. On October 22, 2019, the Court denied Defendants' motion to stay the case, but granted a separate motion of the defendants to stay all discovery.

Separately, on October 18, 2019, purported stockholders of Livent amended a putative class action complaint filed in the U.S. District Court for the Eastern District of Pennsylvania, to add FMC Corporation as a defendant. The operative complaint in that case, *Bisser Nikolov v. Livent Corp., et al.* makes similar substantive allegations as the state court case, including alleged violations of Sections 11, 12(a)(2), and 15 of the Securities Act of 1933 and seeks unspecified damages and other relief on behalf of all persons and entities who purchased or otherwise acquired Livent common stock pursuant and/or traceable to the Livent IPO offering documents. Pursuant to a stipulated scheduling order, Defendants filed a motion to dismiss the *Nikolov* case on November 18, 2019. Plaintiffs filed their opposition to the motion to dismiss on December 30, 2019, and Defendants shall have 30 days to file a reply in further support of a motion to dismiss. All discovery is stayed in this case pending a ruling on the motion to dismiss.

Livent has agreed to defend and indemnify FMC with regard to these cases. FMC is cooperating with Livent and other defendants to defend the litigation.

Competition / antitrust litigation related to the discontinued FMC Peroxygens segment. We are subject to actions brought by private plaintiffs relating to alleged violations of European and Canadian competition and antitrust laws, as further described below.

European competition action. Multiple European purchasers of hydrogen peroxide who claim to have been harmed as a result of alleged violations of European competition law by hydrogen peroxide producers assigned their legal claims to a single entity formed by a law firm. The single entity then filed a lawsuit in Germany in March 2009 against European producers, including our wholly-owned Spanish subsidiary, Foret. An initial hearing was held during the first quarter of 2011, at which time case management issues were discussed. At a subsequent hearing in October 2011, the Court indicated that it was considering seeking guidance from the European Court of Justice ("ECJ") as to whether the German courts have jurisdiction over these claims. After submission of written comments on this issue by the parties, on March 1, 2012, the judge announced that she would refer the jurisdictional issues to the ECJ, which she did on April 29, 2013. On May 21, 2015, the ECJ issued its decision, upholding the jurisdiction of the German court. The case is now back before the German judge. We filed a motion to dismiss the proceedings in September 2015. We anticipate a response by the court sometime in 2020. Since the case is in the preliminary stages and is based on a novel procedure - namely the attempt to create a cross-border "class action" which is not a recognized proceeding under EU or German law - we are unable to develop a reasonable estimate of our potential exposure of loss at this time. A settlement agreement is currently being negotiated by the parties but the terms have not yet been finalized. If the matter cannot be resolved, we will defend the case vigorously.

Canadian antitrust actions. FMC signed a settlement agreement on September 27, 2018, providing for a payment of CAD 3.25 million ($2.5 million) to the plaintiffs. The settlement payment was made in the fourth quarter of 2018 and was recorded within "Discontinued operations, net of income taxes" on the consolidated statements of income (loss). The Ontario Superior Court of Justice subsequently approved the settlement and dismissed the action on January 18, 2019, which fully and finally resolved the Canadian litigation.

Asbestos claims. Like hundreds of other industrial companies, we have been named as one of many defendants in asbestos-related personal injury litigation. Most of these cases allege personal injury or death resulting from exposure to asbestos in premises of FMC or to asbestos-containing components installed in machinery or equipment manufactured or sold by discontinued operations.

We intend to continue managing these asbestos-related cases in accordance with our historical experience. We have established a reserve for this litigation within our discontinued operations and believe that any exposure of a loss in excess of the established reserve cannot be reasonably estimated. Our experience has been that the overall trends in asbestos litigation have changed over time. Over the last several years, we have seen changes in the jurisdictions where claims against FMC are being filed and changes in the mix of products named in the various claims. Because these claim trends have yet to form a predictable pattern, we are presently unable to reasonably estimate our asbestos liability with respect to claims that may be filed in the future.

Other contingent liabilities. In addition to the matters disclosed above, we have certain other contingent liabilities arising from litigation, claims, products we have sold, guarantees or warranties we have made, contracts we have entered into, indemnities we have provided, and other commitments or obligations incident to the ordinary course of business. In Brazil, we are subject to claims from various governmental agencies regarding alleged additional indirect (non-income) taxes or duties as well as product liability matters and labor cases related to our operations. These disputes take many years to resolve as the matters move through administrative or judicial courts. We have provided reserves for such Brazilian matters that we consider probable and for which a reasonable estimate of the obligation can be made in the amount of $4.9 million and $1.7 million as of December 31, 2019 and 2018, respectively. The aggregate estimated reasonably possible loss contingencies related to such Brazilian matters exceed amounts accrued by approximately $90 million at December 31, 2019. This reasonably possible estimate is based upon information available as of the date of the filing and the actual future losses may be higher given the uncertainties regarding the ultimate decision by administrative or judicial authorities in Brazil. Regarding other contingencies arising from operations, some of these contingencies are known - for example pending product liability litigation or claims - but are so preliminary that the merits cannot be determined, or if more advanced, are not deemed material based on current knowledge. Some contingencies are unknown - for example, claims with respect to which we have no notice or claims which may arise in the future, resulting from products we have sold, guarantees or warranties we have made, or indemnities we have provided. Therefore, we are unable to develop a reasonable estimate of our potential exposure of loss for these contingencies, either individually or in the aggregate, at this time. Based on information currently available and established reserves, we have no reason to believe that the ultimate resolution of our known contingencies, including the matters described in this Note, will have a material adverse effect on our consolidated financial position, liquidity or results of operations. However, there can be no assurance that the outcome of these contingencies will be favorable, and adverse results in certain of these contingencies could have a material adverse effect on our consolidated financial position, results of operations in any one reporting period, or liquidity.

See Note 12 for the Pocatello Tribal litigation, Middleport litigation, and Portland Harbor site for legal proceedings associated with our environmental contingencies.

Note 21: Segment Information

As discussed in Note 1, we operate as a single business segment providing innovative solutions to growers around the world with a robust product portfolio fueled by a market-driven discovery and development pipeline in crop protection, plant health, and professional pest and turf management.

For revenue by major geographical region, refer to Note 3. The following table provides our long-lived assets by major geographical region.

	December 31,	
(in Millions)	**2019**	**2018**
Long-lived assets [1]		
North America [2]	$ 1,190.7	$ 1,060.8
Latin America	837.0	809.9
Europe, Middle East, and Africa [2]	1,448.0	1,421.9
Asia [2]	2,064.8	2,019.9
Total	**$ 5,540.5**	**$ 5,312.5**

____

(1) Geographic long-lived assets exclude long-term deferred income taxes and assets of discontinued operations on the consolidated balance sheets.

(2) The countries with long-lived assets in excess of 10 percent of consolidated long-lived assets at December 31, 2019 and 2018 are Singapore, which totaled $1,547.0 million and $1,558.9 million, the U.S., which totaled $1,177.7 million and $1,052.0 million, and Denmark, which totaled $1,045.3 million and $1,044.2 million, respectively.

Note 22: Supplemental Information

The following tables present details of prepaid and other current assets, other assets including long-term receivables, net, accrued and other liabilities and other long-term liabilities as presented on the consolidated balance sheets:

	December 31,	
(in Millions)	2019	2018
Prepaid and other current assets		
Prepaid insurance	$ 8.2	$ 7.9
Tax related items including value added tax receivables	229.2	215.2
Refund asset (1)	37.7	49.7
Environmental obligation recoveries (Note 12)	12.3	6.2
Derivative assets (Note 19)	0.2	11.7
Acquisition related items	3.0	3.4
Other prepaid and current assets	196.9	138.5
Total	**$ 487.5**	**$ 432.6**

	December 31,	
(in Millions)	2019	2018
Other assets including long-term receivables, net		
Non-current receivables (Note 10)	$ 123.1	$ 84.5
Advance to contract manufacturers	116.3	69.9
Capitalized software, net	117.0	61.8
Environmental obligation recoveries (Note 12)	15.0	24.3
Income taxes indirect benefits	32.7	41.9
Operating lease ROU asset (Note 4)	164.7	—
Deferred compensation arrangements (Note 19)	20.2	17.7
Pension and other postretirement benefits (Note 15)	44.2	42.8
Other long-term assets	52.1	40.5
Total	**$ 685.3**	**$ 383.4**

____

(1) In accordance with revenue standard requirements, a sales return liability is recognized for the consideration paid by a customer to which FMC does not expect to be entitled, together with a corresponding refund asset to recover the product from the customer.

(in Millions)	December 31, 2019	December 31, 2018
Accrued and other liabilities		
Restructuring reserves (Note 9)	$ 8.1	$ 8.2
Dividend payable (Note 17)	57.0	53.2
Accrued payroll	101.2	87.0
Environmental reserves, current, net of recoveries (Note 12)	115.3	63.0
Derivative liabilities (Note 19)	8.9	0.3
Furadan® product exit asset retirement obligations	33.0	—
Unfavorable contracts (1)	109.2	103.1
Operating lease current liabilities (Note 4)	31.5	—
Other accrued and other liabilities (2)	216.4	256.0
Total	**$ 680.6**	**$ 570.8**

(in Millions)	December 31, 2019	December 31, 2018
Other long-term liabilities		
Restructuring reserves (Note 9)	$ 6.5	$ 9.0
Asset retirement obligations, long-term (Note 1)	2.7	2.6
Transition tax related to Tax Cuts and Jobs Act (3)	123.6	145.6
Contingencies related to uncertain tax positions (Note 13)	71.4	79.5
Deferred compensation arrangements (Note 19)	29.7	24.3
Derivative liabilities (Note 19)	0.2	—
Self-insurance reserves (primarily workers' compensation)	1.8	2.2
Lease obligations (Note 4)	163.2	17.3
Reserve for discontinued operations (Note 11)	71.9	72.2
Unfavorable contracts (1)	206.0	327.6
Other long-term liabilities	31.4	62.6
Total	**$ 708.4**	**$ 742.9**

(1) Primarily represents the technical insecticide product supply agreements with DuPont for use in their retained seed treatment business. Refer to Note 5 for more details.
(2) Other accrued and other liabilities includes the gross up of the estimated sales returns as part of our adoption of ASC 606. The impact of the adoption impacted accrued and other liabilities by $37.7 million and $49.7 million, respectively.
(3) Represents noncurrent portion of overall transition tax to be paid over the next six years.

Note 23: Quarterly Financial Information (Unaudited)

(in Millions, Except Share and Per Share Data)	2019 1Q	2019 2Q	2019 3Q	2019 4Q	2018 1Q	2018 2Q	2018 3Q	2018 4Q
Revenue	$ 1,192.1	$ 1,206.1	$ 1,014.3	$ 1,197.3	$ 1,107.9	$ 1,154.4	$ 923.6	$ 1,099.4
Gross margin	544.7	550.5	432.4	556.0	502.5	490.4	395.2	491.7
Income (loss) from continuing operations before equity in (earnings) loss of affiliates, non-operating pension and postretirement charges (income), interest expense, net and income taxes	281.8	267.8	159.9	112.1	325.0	133.3	105.1	177.5
Income (loss) from continuing operations	207.6	194.4	110.8	30.7	230.2	99.8	50.9	156.7
Discontinued operations, net of income taxes (1)	9.6	(18.1)	(21.3)	(33.5)	39.4	32.7	23.9	(122.1)
Net income (loss)	$ 217.2	$ 176.3	$ 89.5	$ (2.8)	$ 269.6	$ 132.5	$ 74.8	$ 34.6
Less: Net income (loss) attributable to noncontrolling interests	1.5	1.8	(0.9)	0.4	2.4	2.8	2.0	2.2
Net income (loss) attributable to FMC stockholders	**$ 215.7**	**$ 174.5**	**$ 90.4**	**$ (3.2)**	**$ 267.2**	**$ 129.7**	**$ 72.8**	**$ 32.4**
Amounts attributable to FMC stockholders:								
Continuing operations, net of income taxes	$ 206.1	$ 192.6	$ 111.7	$ 30.3	$ 227.8	$ 97.0	$ 48.9	$ 157.7
Discontinued operations, net of income taxes	9.6	(18.1)	(21.3)	(33.5)	39.4	32.7	23.9	(125.3)
Net income (loss)	**$ 215.7**	**$ 174.5**	**$ 90.4**	**$ (3.2)**	**$ 267.2**	**$ 129.7**	**$ 72.8**	**$ 32.4**
Basic earnings (loss) per common share attributable to FMC stockholders (2):								
Continuing operations	$ 1.56	$ 1.46	$ 0.85	$ 0.23	$ 1.69	$ 0.72	$ 0.36	$ 1.17
Discontinued operations	0.07	(0.14)	(0.16)	(0.25)	0.29	0.24	0.18	(0.93)
Basic net income (loss) per common share	**$ 1.63**	**$ 1.32**	**$ 0.69**	**$ (0.02)**	**$ 1.98**	**$ 0.96**	**$ 0.54**	**$ 0.24**
Diluted earnings (loss) per common share attributable to FMC stockholders (2):								
Continuing operations	$ 1.55	$ 1.46	$ 0.85	$ 0.23	$ 1.67	$ 0.72	$ 0.36	$ 1.17
Discontinued operations	0.07	(0.14)	(0.16)	(0.25)	0.29	0.24	0.18	(0.93)
Diluted net income (loss) per common share	**$ 1.62**	**$ 1.32**	**$ 0.69**	**$ (0.02)**	**$ 1.96**	**$ 0.96**	**$ 0.54**	**$ 0.24**
Weighted average shares outstanding:								
Basic	131.9	131.1	130.4	129.7	134.6	134.8	134.9	133.7
Diluted	133.2	132.3	131.6	130.9	136.2	136.2	136.4	135.1

(1) In the fourth quarter of 2018, we recorded a charge of $106.3 million related to our discontinued environmental site at Middleport, New York. See Note 12 for further details.

(2) The sum of quarterly earnings per common share may differ from the full-year amount.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
FMC Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of FMC Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income (loss), comprehensive income (loss), changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes and schedule II – valuation and qualifying accounts and reserves (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements 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 years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), 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 and our report dated February 28, 2020 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leases (Topic 842)* and the related amendments.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Evaluation of the allowance for trade receivables and long-term receivables associated with customers located in Brazil

As discussed in Notes 1 and 10 to the consolidated financial statements, the Company develops an analysis of trade receivables and long-term receivables to determine its best estimate of the probable losses associated with potential customer defaults. The most significant portion of the allowance for trade receivables and long-term receivables is related to customers located in Brazil.

We identified the evaluation of the allowance for trade receivables and long-term receivables associated with customers located in Brazil as a critical auditing matter. Specifically, the length of standard credit terms offered and customer liquidity may be significantly influenced by economic conditions and unfavorable weather conditions impacting crop quality. This increased the need for subjective judgment and knowledge in assessing customer liquidity constraints to estimate probable losses.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's collectability determination process, including controls over the identification of at-risk trade receivables and long-term receivables balances and related estimate of probable losses associated with such balances. We inspected underlying documentation for collateral arrangements, legal disputes, and historical trends and analysis performed by the Company for historical collection results. The Company's assumptions underlying the collectability of trade receivables and long-term receivables were tested by evaluating:

- The Company's rationale for and appropriateness of changes in assumptions from those used in the prior year related to its expected collection period for specific customers;

- Local Brazil economic and weather conditions that might impact the assumptions;

- Adjustments to the prior period reserve and assessing if those adjustments provided information that was contradictory to the current year's assumptions; and

- Deterioration of trade receivables and long-term receivables balances subsequent to year-end, to identify the presence of trends not considered by the Company when it developed its assumptions.

Evaluation of unrecognized tax benefits

As discussed in Note 13, the Company has $68.2 million of unrecognized tax benefits as of December 31, 2019. The Company recognizes the largest amount of tax benefit that it believes is more than 50 percent likely to be sustained. A significant amount of the Company's earnings are generated by certain foreign subsidiaries whose earnings are taxed at lower rates than the United States federal statutory rate.

We identified the evaluation of the Company's unrecognized tax benefits related to the earnings of certain foreign subsidiaries as a critical audit matter. Complex auditor judgment was required in evaluating the Company's interpretation of tax law, the transfer pricing structure, and its analysis of the recognition of its tax benefits.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's unrecognized tax benefits process, including controls related to the transfer pricing structure which affects the determination of earnings of certain foreign subsidiaries. We also involved tax and transfer pricing professionals with specialized skills and knowledge, who assisted in:

- Examining the Company's tax positions, including the methodology for evaluating unrecognized tax benefits;

- Assessing transfer pricing studies with applicable laws and regulations;

- Evaluating the Company's interpretation of tax laws and income tax consequences of intercompany transactions;

- Considering applicable settlements with taxing authorities; and

- Evaluating the Company's determination of unrecognized tax benefits.

/s/ **KPMG LLP**

We have served as the Company's auditor since 1928.

Philadelphia, Pennsylvania
February 28, 2020

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f). FMC'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 U.S. generally accepted accounting principles. Internal control over financial reporting includes those written policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of FMC;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles;
- provide reasonable assurance that receipts and expenditures of FMC are being made only in accordance with authorization of management and directors of FMC; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting includes the controls themselves, monitoring and internal auditing practices and actions taken to correct deficiencies as identified.

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.

We assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. We based this assessment on criteria for effective internal control over financial reporting described in "Internal Control—Integrated Framework (COSO 2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Management's assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of our internal control over financial reporting. We reviewed the results of our assessment with the Audit Committee of our Board of Directors.

Based on this assessment, we determined that, as of December 31, 2019, FMC has effective internal control over financial reporting.

KPMG LLP, our independent registered public accounting firm, has issued an attestation report on the effectiveness of internal control over financial reporting as of December 31, 2019, which appears on the following page.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
FMC Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited FMC Corporation and subsidiaries' (the Company) 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. 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 Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income (loss), comprehensive income (loss), changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes and schedule II – valuation and qualifying accounts and reserves (collectively, the consolidated financial statements), and our report dated February 28, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

/s/ KPMG LLP

Philadelphia, Pennsylvania
February 28, 2020

FMC CORPORATION

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

(in Millions)	Balance, Beginning of Year	Provision (Benefit) Charged to Costs and Expenses	Provision (Benefit) Charged to Other Comprehensive Income	Net recoveries, write-offs and other [(1)]	Balance, End of Year
December 31, 2019					
Reserve for doubtful accounts [(2)]	$ 82.9	21.2	—	(16.7)	$ 87.4
Deferred tax valuation allowance	261.4	42.2	(0.3)	—	303.3
December 31, 2018					
Reserve for doubtful accounts [(2)(3)]	$ 85.7	71.4	—	(74.2)	$ 82.9
Deferred tax valuation allowance	272.0	(8.8)	(1.8)	—	261.4
December 31, 2017					
Reserve for doubtful accounts [(2)]	$ 65.7	22.1	—	(2.1)	$ 85.7
Deferred tax valuation allowance	286.4	(17.0)	2.6	—	272.0

(1) Write-offs are net of recoveries.
(2) Includes short-term and long-term portion.
(3) Includes the charge and write-off of approximately $42 million associated with the stranded accounts receivables written off as part of the restructuring in India. The charge was recorded as a component of "Restructuring and other charges (income)" on the consolidated statements of income (loss).

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of disclosure controls and procedures. Based on management’s evaluation (with the participation of the Company’s Chief Executive Officer and Chief Financial Officer), the Chief Executive Officer and Chief Financial Officer have concluded that, as of the end of the period covered by this report, the Company’s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934) are effective to provide reasonable assurance that information required to be disclosed by the Company in reports filed or submitted under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management’s annual report on internal control over financial reporting. Refer to Management’s Annual Report on Internal Control Over Financial Reporting which is included in Item 8 of Part II of this Annual Report on Form 10-K and is incorporated by reference to this Item 9A.

Audit report of the independent registered public accounting firm. Refer to Report of Independent Registered Public Accounting Firm which is included in Item 8 of Part II of this Annual Report on Form 10-K and is incorporated by reference to this Item 9A.

(b) Change in Internal Controls. There have been no changes in internal controls over financial reporting that occurred during the quarter ended December 31, 2019 that materially affected or are reasonably likely to materially affect our internal control over financing reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information concerning directors, appearing under the caption "III. Board of Directors" in our Proxy Statement to be filed with the SEC in connection with the Annual Meeting of Stockholders scheduled to be held on April 28, 2020 (the "Proxy Statement"), information concerning executive officers, appearing under the caption "Item 4A. Information about our Executive Officers" in Part I of this Annual Report on Form 10-K, information concerning the Audit Committee, appearing under the caption "IV. Information About the Board of Directors and Corporate Governance - Committees and Independence of Directors - Audit Committee" in the Proxy Statement, and information concerning the Code of Ethics, appearing under the caption "IV. Information About the Board of Directors and Corporate Governance - Corporate Governance - Code of Ethics and Business Conduct Policy" in the Proxy Statement, is incorporated herein by reference in response to this Item 10.

ITEM 11. EXECUTIVE COMPENSATION

The information contained in the Proxy Statement in the section titled "VI. Executive Compensation" with respect to executive compensation, in the section titled "IV. Information About the Board of Directors and Corporate Governance—Director Compensation" and "—Corporate Governance—Compensation and Organization Committee Interlocks and Insider Participation" is incorporated herein by reference in response to this Item 11.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information contained in the section titled "V. Security Ownership of FMC Corporation" in the Proxy Statement, with respect to security ownership of certain beneficial owners and management, is incorporated herein by reference in response to this Item 12.

Equity Compensation Plan Information

The table below sets forth information with respect to compensation plans under which equity securities of FMC are authorized for issuance as of December 31, 2019. All of the equity compensation plans pursuant to which we are currently granting equity awards have been approved by stockholders.

(Shares in thousands)	Number of Securities to be issued upon exercise of outstanding options and restricted stock awards (A) [(2)]	Weighted-average exercise price of outstanding options awards (B) [(1)]	Number of Securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (A)) (C)
Equity Compensation Plans approved by stockholders	2,288	$ 58.06	3,500

(1) Taking into account all outstanding awards included in this table, the weighted-average exercise price of such stock options is $58.06 and the weighted-average term-to-expiration is 6.5 years.

(2) Includes 1,504 thousand stock options and 508 thousand restricted stock awards granted to employees and 276 thousand restricted stock units held by directors.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information contained in the Proxy Statement concerning our independent directors and related party transactions under the caption "IV. Information About the Board of Directors and Corporate Governance—Committees and Independence of Directors," and the information contained in the Proxy Statement concerning our related party transactions policy, appearing under the caption "IV. Information About the Board of Directors and Corporate Governance—Corporate Governance—Related Party Transactions Policy," is incorporated herein by reference in response to this Item 13.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information contained in the Proxy Statement in the section titled "II. The Proposals to be Voted On—Ratification of Appointment of Independent Registered Public Accounting Firm" is incorporated herein by reference in response to this Item 14.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents filed with this Report

1. Consolidated financial statements of FMC Corporation and its subsidiaries are incorporated under Item 8 of this Form 10-K.

2. The following supplementary financial information is filed in this Form 10-K:

	Page
Financial Statements Schedule II – Valuation and qualifying accounts and reserves for the years ended December 31, 2019, 2018 and 2017	113

The schedules not included herein are omitted because they are not applicable or the required information is presented in the financial statements or related notes.

3. Exhibits – The following exhibits are filed as a part of, or incorporated by reference into, this Form 10-K:

(a) Exhibits

Exhibit No.	Exhibit Description
(2)	**Plan of acquisition, reorganization, arrangement, liquidation or succession**
*2.1a	Transaction Agreement, dated March 31, 2017, by and between E.I. du Pont de Nemours and Company and FMC Corporation (Exhibit 2.1 to the Current Report on Form 8-K filed on April 4, 2017)
*2.1b	Purchase Price Allocation Side Letter Agreement, dated as of May 12, 2017, by and between E. I. du Pont de Nemours and Company and FMC Corporation (Exhibit 10.26 to the Quarterly Report on Form 10-Q filed on November 7, 2017)
(3)	**Articles of Incorporation and By-Laws**
*3.1	Restated Certificate of Incorporation, as amended through April 30, 2019 (Exhibit 3.1 to the Quarterly Report on Form 10-Q filed on May 8, 2019)
*3.2	Restated By-Laws of FMC Corporation as of April 30, 2019 (Exhibit 3.2 to the Quarterly Report on Form 10-Q filed on May 8, 2019)
(4)	**Instruments defining the rights of security holders, including indentures.** FMC Corporation undertakes to furnish to the SEC upon request, a copy of any instrument defining the rights of holders of long-term debt of FMC Corporation and its consolidated subsidiaries and for any of its unconsolidated subsidiaries for which financial statements are required to be filed.
*4.1	Indenture, dated as of November 15, 2009, by and between FMC Corporation and U.S. Bank National Association, as trustee (Exhibit 4.1 to the Current Report on Form 8-K filed on November 30, 2009)
*4.2	First Supplemental Indenture, dated as of November 30, 2009, by and between FMC Corporation and U.S. Bank National Association, as trustee (including the form of the Note) (Exhibit 4.2 to the Current Report on Form 8-K filed on November 30, 2009)
*4.3	Second Supplemental Indenture, dated as of November 22, 2011, by and between the Company and U.S. Bank National Association, as trustee (including the form of the Note) (Exhibit 4.2 to the Current Report on Form 8-K filed on November 22, 2011)
*4.4	Third Supplemental Indenture, dated as of November 15, 2013, by and between the Company and U.S. Bank National Association, as trustee (including the form of the Note) (Exhibit 4.1 to the Current Report on Form 8-K filed on November 15, 2013)
*4.5	Fourth Supplemental Indenture, dated as of September 20, 2019, by and between the Company and U.S. Bank National Association, as trustee (including the forms of the Notes attached as Exhibit A, Exhibit B and Exhibit C thereto) (Exhibit 4.2 to the Current Report on Form 8-K filed on September 23, 2019)
4.6	Description of Capital Stock
(10)	**Material contracts**
*10.1a	Term Loan Agreement, dated as of May 2, 2017, among FMC Corporation, certain subsidiaries of FMC Corporation party thereto, the lenders party thereto, and Citibank, N.A., as Administrative Agent for such lenders. (Exhibit 10.2 to the Current Report on Form 8-K filed on May 2, 2017)

*10.1b	Amendment No. 1, dated September 28, 2018, to the Term Loan Agreement, dated as of May 2, 2017, among FMC Corporation, certain subsidiaries of FMC Corporation from time to time party thereto as borrowers, Citibank, N.A., as Administrative Agent, each lender from time to time party thereto and the other parties thereto. (Exhibit 10.2 to the Current Report on Form 8-K filed on October 3, 2018)
*10.1c	Third Amended and Restated Credit Agreement, dated as of May 17, 2019, among FMC Corporation, certain subsidiaries of FMC Corporation party thereto, the lenders and issuing banks party thereto, and Citibank, N.A., as Administrative Agent for such lenders. (Exhibit 10.1 to the Current Report on Form 8-K filed on May 20, 2019)
†10.2	FMC Corporation Compensation Plan for Non-Employee Directors As Amended and Restated Effective April 28, 2020
†*10.2.a	Non-Employee Director Restricted Stock Unit Award Agreement - Annual Grant (Exhibit 10.4.a to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.2.b	Non-Employee Director Restricted Stock Unit Award Agreement - Annual Retainer (Exhibit 10.4.b to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.3	FMC Corporation Salaried Employees’ Equivalent Retirement Plan, as amended and restated effective as of January 1, 2009 (Exhibit 10.5 to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.4	FMC Corporation Salaried Employees’ Equivalent Retirement Plan Grantor Trust, as amended and restated effective as July 31, 2001 (Exhibit 10.6.a to the Quarterly Report on Form 10-Q filed on November 7, 2001)
†*10.5	FMC Corporation Non-Qualified Savings and Investment Plan, as adopted by the Company on December 17, 2008 (Exhibit 10.7 to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.5a	Adoption Agreement for FMC Corporation Non-Qualified Savings and Investment Plan, effective as of December 17, 2008 (Exhibit 4.2 to the Registration Statement on Form S-8 filed on December 19, 2019)
†*10.5b	Amendment to the Adoption Agreement for FMC Corporation Non-Qualified Savings and Investment Plan, effective as of January 1, 2018 (Exhibit 4.2.a to the Registration Statement on Form S-8 filed on December 19, 2019)
†*10.6	FMC Corporation Non-Qualified Savings and Investment Plan Trust, as amended and restated effective as of September 28, 2001 (Exhibit 10.7.a to the Quarterly Report on Form 10-Q filed on November 7, 2001)
†* 10.6a	First Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of October 1, 2003 (Exhibit 10.15a to the Annual Report on Form 10-K filed on March 11, 2004)
†* 10.6b	Second Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust, effective as of January 1, 2004 (Exhibit 10.12b to the Annual Report on Form 10-K filed on March 14, 2005)
†*10.6c	Third Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of February 14, 2005 (Exhibit 10.8.c to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.6d	Fourth Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of July 1, 2005 (Exhibit 10.8.d to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.6e	Fifth Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of April 23, 2008 (Exhibit 10.8.e to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.6f	Sixth Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of March 26, 2009 (Exhibit 10.7f to the Annual Report on Form 10-K filed on February 28, 2017)
†*10.6g	Seventh Amendment to FMC Corporation Non-Qualified Savings and Investment Plan Trust between Fidelity Management Trust Company and FMC Corporation, effective as of April 1, 2017 (Exhibit 10.7g to the Annual Report on Form 10-K filed on February 28, 2017)
†*10.7	FMC Corporation Incentive Compensation and Stock Plan as amended and restated through April 25, 2017 (Exhibit 10.8 to the Annual Report on Form 10-K filed on February 28, 2018)
†*10.7a	Form of Employee Restricted Stock Unit Agreement Pursuant to the FMC Corporation Incentive Compensation and Stock Plan (Exhibit 10.8a to the Annual Report on Form 10-K filed on February 28, 2017)

†*10.7b	Form of Nonqualified Stock Option Agreement Pursuant to the FMC Corporation Incentive Compensation and Stock Plan (Exhibit 10.8b to the Annual Report on Form 10-K filed on February 28, 2017)
†*10.7c	Form of Key Manager Restricted Stock Agreement Pursuant to the FMC Corporation Incentive Compensation and Stock Plan (Exhibit 10.8c to the Annual Report on Form 10-K filed on February 28, 2017)
*10.7d	Form of Performance-Based Restricted Stock Unit Award Agreement Pursuant to FMC Corporation Incentive Compensation and Stock Plan (Exhibit 10.8d to the Quarterly Report on Form 10-Q filed on August 2, 2017)
†*10.7e	Form of Performance-Based Restricted Stock Unit Award Agreement Pursuant to FMC Corporation Incentive Compensation and Stock Plan (Relative Total Shareholder Return Metric) (Exhibit 10.8e to the Quarterly Report on Form 10-Q filed on May 8, 2019)
†10.7f	Form of Performance-Based Restricted Stock Unit Award Agreement Pursuant to FMC Corporation Incentive Compensation and Stock Plan (Operating Cash Flow Metric)
†*10.8	FMC Corporation Executive Severance Plan, as amended and restated effective as of January 1, 2009 (Exhibit 10.10 to the Annual Report on Form 10-K filed on February 23, 2009)
†*10.9	FMC Corporation Executive Severance Grantor Trust Agreement, dated July 31, 2001 (Exhibit 10.10a to the Quarterly Report on Form 10-Q filed on November 7, 2001)
†*10.10	Amended and Restated Executive Severance Agreement, dated November 6, 2012, between FMC Corporation and Pierre Brondeau. (Exhibit 10.2 to FMC Corporation's Current Report on Form 8-K filed on November 9, 2012) Pursuant to Instruction 2 to Item 601 of Regulation S-K, an Amended and Restated Executive Severance Agreement that is substantially identical in all material respects, except as to the parties thereto, between the Company and Mark Douglas was not filed.
†*10.11	Letter Agreement dated October 23, 2009 between FMC Corporation and Pierre Brondeau (Exhibit 10.18 to FMC Corporation's Annual Report on Form 10-K filed on February 22, 2010)
†*10.11a	Amendment to October 23, 2009 Letter Agreement, dated November 6, 2012, between FMC Corporation and Pierre Brondeau. (Exhibit 10.1 to FMC Corporation's Current Report on Form 8-K filed on November 9, 2012)
*10.12	Separation and Distribution Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.1 to the Current Report on Form 8-K of Livent Corporation, filed on October 15, 2018, SEC File No. 1-38694) (the "Livent October 2018 Form 8-K"))
*10.13	Transition Services Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.2 to the Livent October 2018 Form 8-K)
*10.14	Shareholders' Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.3 to the Livent October 2018 Form 8-K)
*10.15	Tax Matters Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.4 to the Livent October 2018 Form 8-K)
*10.16	Registration Rights Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.5 to the Livent October 2018 Form 8-K)
†*10.17	Amended and Restated Employee Matters Agreement, dated as of February 4, 2019, by and between Livent Corporation and FMC Corporation (Exhibit 10.22 to the Annual Report to the Form 10-K filed on February 28, 2019)
*10.18	Trademark License Agreement, dated as of October 15, 2018, by and between Livent Corporation and FMC Corporation (Exhibit 10.7 to the Livent October 2018 Form 8-K)
†*10.19	Executive Severance Agreement, dated May 15, 2018, between FMC Corporation and Andrew D. Sandifer (Exhibit 10.28 to the Annual Report on Form 10-K filed on February 28, 2019)
†10.20	Executive Severance Agreement, dated April 1, 2019, between FMC Corporation and Michael Reilly
21	FMC Corporation List of Significant Subsidiaries
23.1	Consent of KPMG LLP
31.1	Chief Executive Officer Certification
31.2	Chief Financial Officer Certification
32.1	Chief Executive Officer Certification of Annual Report
32.2	Chief Financial Officer Certification of Annual Report

101	Interactive Data File

* Incorporated by reference
† Management contract or compensatory plan or arrangement

ITEM 16. FORM 10-K SUMMARY

Optional disclosure, not included in this Report.

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.

FMC CORPORATION
(Registrant)

By: /S/ ANDREW D. SANDIFER
Andrew D. Sandifer
Executive Vice President and Chief Financial Officer

Date: February 28, 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 and on the date indicated.

Signature	Title	Date
/S/ ANDREW D. SANDIFER **Andrew D. Sandifer**	Executive Vice President and Chief Financial Officer	February 28, 2020
/S/ NICHOLAS L. PFEIFFER **Nicholas L. Pfeiffer**	Vice President, Corporate Controller and Chief Accounting Officer	February 28, 2020
/S/ PIERRE R. BRONDEAU **Pierre R. Brondeau**	Chief Executive Officer and Chairman of the Board	February 28, 2020
/S/ G. PETER D’ALOIA **G. Peter D’Aloia**	Director	February 28, 2020
/S/ EDUARDO E. CORDEIRO **Eduardo E. Cordeiro**	Director	February 28, 2020
/S/ C. SCOTT GREER **C. Scott Greer**	Director	February 28, 2020
/S/ DIRK A. KEMPTHORNE **Dirk A. Kempthorne**	Director	February 28, 2020
/S/ PAUL J. NORRIS **Paul J. Norris**	Director	February 28, 2020
/S/ ROBERT C. PALLASH **Robert C. Pallash**	Director	February 28, 2020
/S/ VINCENT R. VOLPE, JR. **Vincent R. Volpe, Jr.**	Director	February 28, 2020
/S/ WILLIAM H. POWELL **William H. Powell**	Director	February 28, 2020
/S/ MARGARETH ØVRUM **Margareth Øvrum**	Director	February 28, 2020
/S/ K'LYNNE JOHNSON **K'Lynne Johnson**	Director	February 28, 2020

Exhibit 4.6

DESCRIPTION OF CAPITAL STOCK

The summary below and that contained in any prospectus supplement are not complete and are qualified in their entirety by reference to our restated certificate of incorporation and restated by-laws, as amended. The terms of these securities also may be affected by the General Corporation Law of the State of Delaware, or the DGCL.

Description of Common Stock

Our authorized common stock consists of 260 million shares of common stock, $0.10 par value. As of December 31, 2019, there were 129,124,294 shares of common stock issued and outstanding. In addition, up to 3.5 million shares of unissued common stock have been reserved for stock options and awards under our incentive compensation plans as of December 31, 2019. The shares of common stock are listed on the New York Stock Exchange and the Chicago Stock Exchange under the symbol “FMC.” Wells Fargo Bank, N.A., Shareowner Services, is the transfer agent and registrar of the shares of common stock.

The common stock is not redeemable, does not have any conversion rights and is not subject to call. Holders of shares of common stock have no preemptive rights to maintain their percentage of ownership in future offerings or sales of our stock. Holders of shares of common stock have one vote per share in all elections of directors and on all other matters submitted to a vote of our stockholders. The holders of common stock are entitled to receive dividends, if any, as and when declared from time to time by our Board of Directors out of funds legally available for distribution. Upon our liquidation, dissolution or winding up of our affairs, the holders of common stock will be entitled to participate equally and ratably, in proportion to the number of shares held, in our net assets available for distribution to holders of common stock. The shares of common stock offered hereby, upon issuance against full payment of the purchase price therefor, will be fully paid and nonassessable.

Certain Certificate of Incorporation Provisions

General

We have adopted a number of provisions in our restated certificate of incorporation that might discourage certain types of transactions that involve an actual or threatened change in control of FMC Corporation. The provisions may make it more difficult and time-consuming to change majority control of our Board of Directors and thus reduce our vulnerability to an unsolicited offer, particularly an offer that does not contemplate the acquisition of all of our outstanding shares.
These provisions are intended to encourage persons seeking to acquire control of FMC Corporation to initiate such an acquisition through arm’s-length negotiations with our management and Board of Directors. Additionally, such provisions provide management with the time and information necessary to evaluate a takeover proposal and to study alternative proposals. Nonetheless, the provisions could have the effect of discouraging a third party from making a tender offer or otherwise attempting to obtain control of FMC Corporation, even though such an attempt might be beneficial to us and our stockholders.

Business Combination

Our restated certificate of incorporation provides that significant asset sales, dispositions of stock, liquidations, mergers and certain other business combinations involving us and persons beneficially owning 10% or more of the voting power of our outstanding shares of common stock must be approved by the holders of at least 80% of the voting power of our outstanding voting stock. The restated certificate of incorporation requires the affirmative vote of the holders of 80% or more of the outstanding voting stock to amend, alter or repeal, or to adopt any provisions inconsistent with, such provisions.

Stockholders’ Meetings

Our restated certificate of incorporation provides that special meetings of the stockholders may only be called pursuant to a resolution approved by a majority of the Board of Directors. This limitation prevents a stockholder or group of stockholders from forcing us to conduct a stockholders’ meeting at any time not sanctioned by the Board of Directors, regardless of the number of shares of common stock held by such stockholder or group of stockholders.

No Action by Stockholder Consent

Our restated certificate of incorporation prohibits action that is required or permitted to be taken at any annual or special meeting of our stockholders from being taken by the written consent of stockholders without a meeting. This provision may be altered, amended or repealed only if the holders of 80% or more of our outstanding voting stock vote in favor of such action.

Description of Preferred Stock

Our authorized preferred stock consists of 5 million shares of preferred stock, without par value, in one or more series and with rights, preferences, privileges and restrictions, including dividend rights, voting rights, conversion rights, terms of redemption and liquidation preferences, that may be fixed or designated by our Board of Directors pursuant to a certificate of designation without any further vote or action by our stockholders.

As of the date of this prospectus, no shares of preferred stock are issued or outstanding.

The issuance of preferred stock may have the effect of delaying, deferring or preventing a change in control of FMC Corporation. Preferred stock, upon issuance against full payment of the purchase price therefor, will be fully paid and nonassessable. The specific terms of a particular series of preferred stock will be described in the prospectus supplement relating to that series. The description of preferred stock set forth below and the description of the terms of a particular series of preferred stock set forth in the related prospectus supplement do not purport to be complete and are qualified in their entirety by reference to the certificate of designation relating to that series. The related prospectus supplement will contain a description of certain United States federal income tax consequences relating to the purchase and ownership of the series of preferred stock described in such prospectus supplement.

The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to such series. A prospectus supplement, relating to each series, will specify the terms of the preferred stock as follows:

- The maximum number of shares to constitute the series and the distinctive designation thereof;
- The annual dividend rate, if any, on shares of the series, whether such rate is fixed or variable or both, the date or dates from which dividends will begin to accrue or accumulate and whether dividends will be cumulative;
- The price at and the terms and conditions on which the shares of the series may be redeemed, including the time during which shares of the series may be redeemed and any accumulated dividends thereon that the holders of shares of the series shall be entitled to receive upon the redemption thereof;
- The liquidation preference, if any, and any accumulated dividends thereon, that the holders of shares of the series shall be entitled to receive upon the liquidation, dissolution or winding up of the affairs of FMC Corporation;
- Whether or not the shares of the series will be subject to operation of a retirement or sinking fund, and, if so, the extent and manner in which any such fund shall be applied to the purchase or redemption of the shares of the series for retirement or for other corporate purposes and the terms and provisions relating to the operation of such fund;
- The terms and conditions, if any, on which the shares of the series shall be convertible into, or exchangeable for, shares of any other class or classes of our capital stock of or a third party or of any other series of the same class, including the price or prices or the rate or rates of conversion or exchange and the method, if any, of adjusting the same and whether such conversion is mandatory or optional;
- The stated value of the shares of such series;
- The voting rights, if any, of the shares of the series; and
- Any or all other preferences and relative, participating, optional or other special rights or qualifications, limitations or restrictions thereof.

In the event of any voluntary liquidation, dissolution or winding up of the affairs of FMC Corporation, the holders of any series of any class of preferred stock shall be entitled to receive in full out of our assets, including our capital, before any amount shall be paid or distributed among the holders of our common stock or any other shares ranking junior to such series, the amounts fixed by our Board of Directors with respect to such series and set forth in the applicable prospectus supplement plus an amount equal to all dividends accrued and unpaid thereon to the date of payment of the amount due pursuant to such liquidation, dissolution or winding up of the affairs. After payment to the holders of preferred stock of the full preferential amounts to which they are entitled, the holders of preferred stock, as such, shall have no right or claim to any of our remaining assets.

If liquidating distributions shall have been made in full to all holders of preferred stock, our remaining assets shall be distributed among the holders of any other classes or series of capital stock ranking junior to the preferred stock upon liquidation, dissolution or winding up, according to their respective rights and preferences and in each case according to their respective numbers of shares. Our merger or consolidation into or with any other corporation, or the sale, lease or conveyance of all or substantially all of our assets, shall not constitute a dissolution, liquidation or winding up of FMC Corporation.

Section 203 of the Delaware General Corporation Law

We are a Delaware corporation. Section 203 of the DGCL prohibits a Delaware corporation from engaging in a business combination with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder. The term "business combination" is broadly defined to include mergers, consolidations, sales and other dispositions of assets having an aggregate market value equal to 10% or more of the consolidated assets of the corporation, and other specified transactions resulting in financial benefits to the interest stockholder. Under Section 203, an interested stockholder generally is defined as a person who, together with affiliates and associates, owns (or within the three prior years did own) 15% or more of the corporation's outstanding voting stock.

This prohibition is effective unless:

- the business combination or the transaction that resulted in the interested stockholder becoming an interested stockholder is approved by the corporation's board of directors prior to the time the interested stockholder becomes an interested stockholder;
- upon consummation of the transaction that resulted in the interested stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation, other than stock held by directors who are also officers or by specified employee stock plans; or
- at or after the time the stockholder becomes an interested stockholder, the business combination is approved by a majority of the board of directors and, at an annual or special meeting, by the affirmative vote of two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

In general, the prohibition does not apply to business combinations with persons who were interested stockholders before the corporation became subject to Section 203.

Limitation on Liability and Indemnification Matters

Our restated certificate of incorporation provides that none of our directors will be liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- under Section 174 of the DGCL (relating to unlawful payments of dividends or stock repurchases); or
- for any transaction from which the director derived an improper personal benefit.

In addition, our restated by-laws provide for indemnification, to the fullest extent permitted by the DGCL, of every officer and director and certain other persons made or threatened to be made a party to any action, suit or proceeding by reason of the fact that the person is, or was a director, officer or agent of ours or is or was serving at our request as a director, officer, employee or agent for another enterprise, against all expense, liability and loss reasonably incurred or suffered by such person in connection with the action, suit or proceeding and specifies procedures to be followed by us and any person requesting indemnification in connection with any claim.

Transfer Agent and Registrar

Equinti Trust Company serves as the registrar and transfer agent for our common stock.

Stock Exchange Listing

Exhibit 4.6

Our common stock is listed on the New York Stock Exchange and the Chicago Stock Exchange under the trading symbol “FMC.”

FMC CORPORATION

COMPENSATION POLICY FOR NON-EMPLOYEE DIRECTORS

(AS AMENDED AND RESTATED EFFECTIVE APRIL 28, 2020)

PART I GENERAL PROVISIONS

1. *Purpose*. The purpose of this Policy is to provide a compensation program to attract and retain qualified individuals not employed by the Company or its Affiliates to serve on the Board and to further align the interests of those directors with those of stockholders by providing that a substantial portion of compensation will be linked directly to increases in stockholder value.

2. *Definitions*. Except as otherwise defined herein, terms used herein in capitalized form will have the meanings attributed to them as set forth below or in the Stock Plan.

(a) **“Annual Retainer”** means the retainer fee established by the Board and paid to a director for services on the Board for a year in accordance with Section 1 of Part II of this Policy.

(b) **“Audit Committee Fee”** means the annual fee established by the Board and paid to a director for service as a member of the Audit Committee of the Board in accordance with Section 4 of Part II of this Policy.

(c) **“Board”** means the Board of Directors of the Company.

(d) **“Change in Control”** has the meaning set forth in the Stock Plan; *provided* that, solely for vesting purposes, in no event will a Change in Control be deemed to have occurred with respect to the Participant if the Participant is part of a purchasing Person which consummates the Change in Control. The Participant will be deemed to be “part of a purchasing Person” for purposes of the preceding sentence if the Participant is an equity participant in the purchasing Person (except for: (i) passive ownership of less than 3% of the stock of the purchasing Person; or (ii) ownership of equity participation in the purchasing company or Person which is otherwise not significant, as determined prior to the Change in Control by a majority of the non-employee continuing directors of the Board).

In addition, solely for purposes of Section 5(a) of Part III of this Policy, no event or transaction will constitute a Change in Control unless that event or transaction also constitutes a “change in ownership” of the Company, a “change in effective control” of the Company or a “change in the ownership of a substantial portion of the assets” of the Company, as those terms are used in Section 409A(a)(2)(v) of the Code and defined in regulations issued thereunder.

(e) **“Committee Chairman Fee”** means the annual fee established by the Board and paid to a director for service as chairman of any committee of the Board in accordance with Section 3 of Part II of this Policy.

(f) **“Company”** means FMC Corporation, a Delaware corporation.

(g) **“Lead Director Fee”** means the annual fee established by the Board and paid to a director for service as the Lead Director of the Board in accordance with Section 2 of Part II of this Policy.

(h) **“Non-Employee Director”** means a member of the Board who is not an employee of the Company or any of its Affiliates, as determined in the discretion of the Board.

(i) **“Participant”** means a Non-Employee Director who is eligible to participate in this Policy.

(j) **“Policy”** means this FMC Corporation Compensation Policy for Non-Employee Directors, as may be amended from time to time.

(k) “**RSU**” means a Restricted Stock Unit within the meaning of the Stock Plan.

(l) **“Separation from Service”** means a “Separation from Service” as that term is used in Section 409A(a)(2)(i) of the Code and defined in regulations issued thereunder.

(m) **“Service”** means the Participant’s service to the Company or any of its Affiliates, solely during the period of such affiliation.

(n) **“Stock Plan”** means the FMC Corporation Incentive Compensation and Stock Plan, as may be amended from time to time.

PART II COMPENSATION

1. Annual Retainer.

(a) Each Participant will be entitled to receive an Annual Retainer in such amount as will be determined from time to time by the Board. Until changed by resolution of the Board, the Annual Retainer will be $100,000, which will be payable in cash in equal installments at the end of each calendar year quarter.

(b) Notwithstanding the foregoing, no later than the last day of any calendar year, a Participant may elect that all (or a portion, to the extent permitted by the Company) of the Annual Retainer payable in the following calendar year be paid in the form of RSUs, as set forth in Section 1 of Part III, by providing written notice of such election to the Company in the form and manner prescribed by the Company. Any such election will be effective on the first day of the next calendar year beginning after the date of such election.

(c) Notwithstanding anything to the contrary in Section 1(b), a Participant who is newly elected or appointed to the Board may elect within 30 days after joining the Board, by written notice to the Company in the form and manner prescribed by the Company, to receive all (or a portion, to the extent permitted by the Company) of the Annual Retainer that is payable to such Participant with respect to the remainder of the first calendar year of his or her service in the form of RSUs (as set forth in Section 1 of Part III).

2. Lead Director Fee. The Participant who serves as the Lead Director of the Board will be entitled to receive a Lead Director Fee in such amount as will be determined from time to time by the Board, in addition to (and not in lieu of) any other compensation to which such Participant may be entitled pursuant to any other provision of this Policy. Until changed by resolution of the Board, the Lead Director Fee will be $30,000, which will be paid in cash in equal installments at the end of each calendar year quarter.

3. Committee Chairman Fees. Each Participant who serves as a chairman of a committee of the Board will be entitled to receive a Committee Chairman Fee in such amount as will be determined from time to time by the Board, for the tenure of such service, in addition to (and not in lieu of) any other compensation to which such Participant may be entitled pursuant to any other provision of this Policy. Until changed by resolution of the Board, the Committee Chairman Fees for each committee of the Board will be paid in cash at the annualized rates set forth in the table below in equal installments at the end of each calendar year quarter.

Audit Committee Chairman Fee	$20,000
Compensation & Organization Committee Chairman Fee	$15,000
Nominating & Corporate Governance Committee Chairman Fee	$15,000
Sustainability Committee Chairman Fee	$15,000

4. Audit Committee Fee. Each Participant who serves as a member of the Audit Committee of the Board, including the Audit Committee Chairman, will be entitled to receive additional fees in respect of such service in such amount as will be determined from time to time by the Board, in addition to (and not in lieu of) any other compensation to which such Participant may be entitled pursuant to any other provision of this Policy. Until changed by resolution of the Board, this additional Audit Committee fee will be paid in cash at an annualized rate of $5,000 in equal installments at the end of each calendar year quarter.

5. In the event that a Participant ceases to serve as a member of the Audit Committee, a Committee Chairman, Lead Director, or a member of the Board, in each case prior to the end of a calendar year quarter, cash fees that would otherwise have been payable to the Participant under Part II of this Policy with respect to such service shall be pro-rated based upon his or her partial service during the calendar year quarter. Notwithstanding the foregoing, in the event that the Participant's cessation of service as a member of the Board was due to the Participant's death or Disability, any amounts for that year not yet paid in respect of Section 1(a) of Part II of this Policy shall then be paid in full, and shall not be subject to pro-ration.

PART III STOCK COMPENSATION

1. *Retainer Grant.*

(a) In the event a Participant has made an election pursuant to Section 1(b) or 1(c) of Part II in respect of his or her Annual Retainer for the next calendar year, then effective as of the next annual meeting of the Company's stockholders, such Participant will receive a number of RSUs determined by dividing (i) the portion of the Participant's Annual Retainer payable in that calendar year with respect to which the Participant has made an election in accordance with Section 1(b) or 1(c) of Part II *by* (ii) the Fair Market Value of a share of Common Stock on the date of grant. RSUs granted under this Section 1 of Part III are hereinafter referred to as **"Retainer Units."** Retainer Units will be granted pursuant to, and subject to the terms of, the Stock Plan.

(b) Subject to the Participant's continued Service, Retainer Units will vest ratably on a daily basis over a one (1) year period commencing on the date of grant, *provided* that any unvested Retainer Units will vest upon a Change in Control. Upon the Participant's Separation from Service, any Retainer Units that have not become vested prior to the Separation from Service will be automatically forfeited and the Participant will have no further rights with respect thereto. Notwithstanding the foregoing, in the event of the Participant's Separation from Service due to his or her death or Disability, any unvested Retainer Units will vest as of the Participant's Separation from Service.

2. Annual Equity Grant.

(a) Effective as of the annual meeting of the Company's stockholders, each Participant will be granted a number of RSUs determined by dividing $140,000 by the Fair Market Value of a share of Common Stock on the date of grant. RSUs granted under this Section 2 are hereinafter referred to as **"Annual Units."** Annual Units will be granted pursuant to, and subject to the terms of, the Stock Plan.

(b) Annual Units will vest in full on the earliest of (i) the first anniversary of the date of grant, (ii) a Change in Control, and (iii) the Participant's Separation from Service as a result of his or her death or Disability; *provided* in each case that the Participant has remained in Service through the applicable time. Any portion of a Participant's Annual Units that have not vested on or prior to his or her Separation from Service will then be forfeited and all rights of the Participant to or with respect to such Annual Units will then automatically terminate.

3. Dividend Equivalent Rights. If a cash dividend or distribution is paid with respect to outstanding shares of Common Stock, then effective as of the dividend or distribution payment date, each outstanding award of Retainer Units and Annual Units (including any additional Retainer Units and Annual Units previously credited pursuant to this Section 3) will be increased by a number of additional Retainer Units or Annual Units, as applicable, equal to the quotient of (i) the total dividend or distribution that would then be payable with respect to a number of shares of Common Stock equal to the number of Retainer Units or Annual Units, as applicable, held by the Participant on the dividend or distribution record date *divided by* (ii) the Fair Market Value of a share of Common Stock on the dividend or distribution record date (the "Dividend

Equivalent Rights”). The Dividend Equivalent Rights will be subject to the same vesting conditions as the Retainer Units or Annual Units to which they relate.

4. Fractional Units. All RSUs, as well as Dividend Equivalent Rights credited with respect to such RSUs, will be credited in whole units, with any fractional unit being rounded up to the nearest whole number.

5. Form and Time of Payment.

(a) Payments with respect to vested RSUs will be made upon the earlier of (i) the Participant’s Separation from Service, (ii) a Change in Control, (iii) such other date (if any) elected by the Participant in a form and manner specified by the Company, or (iv) upon the Company’s termination of the plan including such RSUs in accordance with Treas. Reg. § 1.409A-3(j)(4)(ix).

(b) Payments will be made in shares of Common Stock, unless otherwise determined by the Compensation and Organization Committee in accordance with the terms of the Stock Plan.

(c) Notwithstanding any other provision in this Policy, to the extent compliance with the requirements of Treas. Reg. § 1.409A-3(i)(2) is necessary to avoid the application of an additional tax under Section 409A of the Code, shares of Common Stock that are otherwise issuable upon the Participant’s Separation from Service will be deferred (without interest) and issued to the Participant immediately following the six month delay period.

6. Rights. Except to the extent otherwise set forth herein, a Participant will not have any of the rights of a stockholder with respect to the RSUs unless and until such time as shares of Common Stock have been issued to the Participant in settlement of the vested RSUs.

PART IV ADDITIONAL PROVISIONS

1. Administration. The Board administers the Policy. The Board has full power to interpret the Policy, formulate additional details and regulations for carrying out the Policy and amend or terminate the Policy as from time to time it deems proper and in the best interest of the Company. Any decision or interpretation of the Board is final and conclusive.

2. *Statement of Account*. Each Participant will receive an annual statement showing the number and status of and essential terms applicable to RSUs that have been awarded to the Participant.

3. *Unsegregated Funds*. The Company will not segregate any funds or securities in respect of the Participant’s interests under this Policy, and the Participant’s Service is the Participant’s acknowledgement and agreement that any interests of the Participant remain a part of the Company’s general funds and are subject to the claims of the Company’s general creditors. Nothing in this Policy will be construed as creating any trust, express or implied, for the benefit of any Participant.

4. *Awards Issued Pursuant to the Policy*. All equity-based awards described herein will be granted under, and subject to the terms of, the Stock Plan (or any successor plan thereto) and the applicable Notice thereunder. In the event of a conflict between any term or provision contained in this Policy on the one hand, and the Stock Plan (or any successor plan thereto) and the applicable Notice on the other hand, the applicable terms and provisions of the Stock Plan (or any successor thereto) and the Notice will govern.

5. *Payments Upon Death.* In the event of the Participant's death, payments under this Policy will be made to the beneficiary designated by the Participant to receive such payments or, in the absence of a duly executed and filed beneficiary designation form, to the Participant's estate.

6. *Payment of Certain Costs of the Participant*. If a dispute arises regarding the interpretation or enforcement of this Policy and the Participant (or in the event of his or her death, his beneficiary) obtains a final judgment in his or her favor from a court of competent jurisdiction from which no appeal may be taken, whether because the time to do so has expired or otherwise, or his or her claim is settled by the Company prior to the rendering of such a judgment, all reasonable legal and other professional fees and expenses incurred by the Participant in contesting or disputing any such claim or in seeking to obtain or enforce any right or benefit provided for in this Policy or in otherwise pursuing his or her claim will be promptly paid by the Company with interest thereon at the highest Delaware statutory rate for interest on judgments against private parties from the date of payment thereof by the Participant to the date of reimbursement by the Company.

7. *Reservation of Rights.* Nothing in this Policy will be construed to (a) give any Participant any right to defer compensation received for services as a director of the Company other than as expressly authorized and permitted in this Policy or in any other plan or arrangement approved by the Board, (b) create any obligation on the part of the Board to nominate any Participant for reelection by the Company's stockholders or (c) limit in any way the right of the Board to remove a Participant as a director of the Board.

8. *Amendment or Termination*. The Board may, at any time by resolution, terminate or amend this Policy *provided* that no such termination or amendment will adversely affect the rights of Participants with respect to awards granted under this Policy prior to such termination or amendment, without the consent of the Participant.

9. *Withholding*. The Company will have the right to deduct or withhold from all payments of compensation any taxes required by law to be withheld with respect to such payments.

10. *Directors Elected Between Annual Stockholders' Meetings*. Notwithstanding anything to the contrary in this Policy, unless otherwise determined by the Board, the compensation hereunder of an individual who becomes a Participant as a result of his or her election to the Board other than at an annual meeting of the Company's stockholders will be prorated for the period of service commencing with his or her initial election and ending on the Company's next annual stockholders' meeting.

11. *Section 409A*. This Policy and any compensation granted hereunder is intended to comply with, or be exempt from, the provisions of Section 409A of the Code. If any provision of the Policy would otherwise frustrate or conflict with this intent, the provision, term or condition shall be interpreted and deemed amended so as to avoid this conflict. Notwithstanding the foregoing, the tax treatment of the benefits provided under the Policy is not warranted or guaranteed, and in no event shall the Company be liable for all or any portion of any taxes, penalties, interest or other expenses that may be incurred by any Participant on account of non-compliance with Section 409A of the Code.

(Operating Cash Flow Metric)

PERFORMANCE-BASED RESTRICTED STOCK UNIT AWARD AGREEMENT
FMC CORPORATION
INCENTIVE COMPENSATION AND STOCK PLAN

THIS RESTRICTED STOCK UNIT AWARD AGREEMENT (this "Agreement") is made by and between FMC Corporation (the "Company") and [__________________][1](the "Participant").

WHEREAS, the Company maintains the FMC Corporation Incentive Compensation and Stock Plan (the "Plan"); and

WHEREAS, the Plan authorizes the grant of Restricted Stock Units; and

WHEREAS, to compensate the Participant for his or her past and anticipated future contributions to the Company and to further align the Participant's personal financial interests with those of the Company's stockholders, the Compensation and Organization Committee of the Company's Board of Directors (the "Committee") approved this grant of Restricted Stock Units to the Participant on the terms described below, effective [__________________][2] (the "Grant Date").

NOW, THEREFORE, in consideration of the mutual covenants herein contained and other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. Grant of Restricted Stock Units.

(a) Pursuant to the Plan and as of the Grant Date, the Company hereby awards to the Participant a target number of [_________] Restricted Stock Units (the "Units"). The terms of the Plan are incorporated herein by this reference and made a part of this Agreement. Capitalized terms not otherwise defined herein will have the same meanings as in the Plan. To the extent there is a conflict between the Plan and this Agreement, the Plan will prevail.

(b) Each Unit, once vested, represents an unfunded, unsecured right of the Participant to receive one share of Common Stock (each a "Share") at a specified time. The Units will be earned, and Shares will be issued in respect of earned Units, as set forth in this Agreement.

2. Determination of Units Earned. Subject to the Participant's continued employment by the Company or any of its Affiliates through December 31, [Year 3] (the "Specified Date"), between 0%-200% of the Units shall become earned in accordance with the table set forth below based on the Company's operating cash flow (as defined in <u>Exhibit A</u> hereto, the "Operating Cash Flow") during the three year period beginning on January 1, [Year 1] and ending on December 31, [Year 3] (the "Measurement Period"):

---

(1) Insert name of participant.
(2) Insert date of committee action to approve the grant.

Level	**Operating Cash Flow**	**Percentage of Units Earned**
Below Threshold	[_________]	0%
Threshold	[_________]	25%
Target	[_________]	100%
Maximum	[_________]	200%

If the Company's Operating Cash Flow is between the levels set forth above, then the percentage of the Units earned will be ratably interpolated. Any Units that are not earned as of the end of the Measurement Period will be forfeited immediately and automatically and the Participant will have no further rights with respect thereto.

(b) If the Participant's employment terminates by reason of (i) Disability, (ii) death, (iii) Non-Approved Retirement, or (iv) by the Company without Cause other than within two years following a Change in Control, then the extent to which the Units are earned shall be determined as if the Participant had continued in active service to the Company through the Specified Date, but shall be prorated based on the number of days the Participant was employed by the Company during the Measurement Period.

(c) In the event the Participant's employment terminates by reason of Approved Retirement, then the extent to which the Units are earned shall be determined as if the Participant had continued in active service to the Company through the Specified Date.

(d) In the event the Participant's employment terminates within two years following a Change in Control due to either (i) a termination by the Company without Cause or (ii) a resignation by the Participant with Good Reason, then the Units shall be deemed earned at the target (i.e., 100%) level and Shares will be distributed in respect thereof in accordance with Section 4(a) below. For avoidance of doubt, this section will not apply if the Participant has satisfied the conditions for Approved Retirement or Non-Approved Retirement as of the date of his or her termination (in that case, Section 2(b)(iii) or 2(c) will apply, as applicable).

(e) The application of Sections 2(b)(iii), 2(b)(iv), 2(c), and 2(d) is in each case conditioned on (i) the Participant's execution and delivery to the Company of a general release of claims against the Company and its affiliates in a form prescribed by the Company, and (ii) such release becoming irrevocable within 60 days following the cessation of the Participant's employment or such shorter period specified by the Company. For avoidance of doubt, if this release requirement is not timely satisfied, all the Units will be forfeited as of the effective date of the cessation of the Participant's employment and the Participant will have no further rights with respect thereto.

(f) Upon a cessation of the Participant's employment with the Company or any of its Affiliates, all Units that do not specifically remain outstanding pursuant to Section 2(b), 2(c) or 2(d) will then be forfeited immediately and automatically and the Participant will have no further rights with respect thereto.

3. Definitions.

(a) “Approved Retirement” means the cessation of the Participant’s employment after June 30, [Year 1] and after the Participant has (A) both attained age 62 and completed 10 years of service with the Company or its Affiliates or (B) attained age 65, provided that the Participant has commenced succession planning with the Company’s chief human resources executive (in accordance with procedures established by the Company) at least six months before the effective date of the Participant’s cessation of employment.

(b) “Good Reason” will have the meaning defined in the Participant’s Individual Agreement, if any. If no Individual Agreement exists, “Good Reason” will mean the occurrence of any one or more of the following: (i) the assignment to the Participant of duties materially inconsistent with his or her authorities, duties, responsibilities or position, or a material adverse change in the Participant’s authorities, duties, responsibilities, position or reporting requirements; (ii) the Company’s relocation of the Participant’s principal worksite by more than (50) miles, excepting travel substantially consistent with the Participant’s business obligations; or (iii) a material reduction in the Participant’s base salary; provided that any such event will constitute Good Reason only if the Participant notifies the Company in writing of such event within 90 days following the initial occurrence thereof, the Company fails to cure such event within 30 days after receipt from the Participant of written notice thereof, and the Participant resigns his or her employment within 180 days following the initial occurrence of such event.

(c) “Non-Approved Retirement” means the cessation of the Participant’s employment after the Participant has (i) both attained age 62 and completed 10 years of service with the Company or its Affiliates or (ii) attained age 65, other than an Approved Retirement.

4. Timing of Issuance.

(a) Subject to Section 4(b), Shares will be issued in respect of all earned Units (including any additional Units credited under Section 7(b)) during the first two and a half months of the calendar year beginning after the Specified Date.

(b) Notwithstanding anything herein to the contrary:

(i) to the extent permitted by Treas. Reg. § 1.409A-3(j)(4)(vi), the issuance of Shares in respect of a number of earned Units may be accelerated to the date that employment taxes become payable with respect to this Award. Such number of Units will be equal to the reasonably estimated amount of employment taxes then required to be withheld and remitted, divided by the then current Fair Market Value;
(ii) to the extent the requirements of Treas. Reg. § 1.409A-2(b)(7)(ii) are met, the issuance of Shares hereunder will be delayed to the extent the Company reasonably anticipates that the issuance will violate Federal securities laws or other applicable laws; and

(iii) the Company may terminate this arrangement at any time prior to the end of the Measurement Period in a manner consistent with the requirements of Treas. Reg. § 1.409A-3(j)(4)(ix).

(c) Fractional Shares will be rounded down to the next whole Share.

5. Non-Transferability. Neither the Units nor any right with respect thereto may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by the Participant other than by will or by the laws of descent and distribution, and any purported assignment, alienation, pledge, attachment, sale, transfer or encumbrance will be void and unenforceable against the Company.

6. Clawback Policy. To the extent the Participant is a current or former executive officer of the Company, the Award, any cash paid in respect of the Award, and the rights of the Participant hereunder, are subject to any policy (whether currently in existence or later adopted) established by the Company providing for clawback or recovery of amounts paid or credited to current or former executive officers of the Company. The Committee will make any determination for clawback or recovery under any such policy in its sole discretion and in accordance with any applicable law or regulation, and the Participant agrees to be bound by any such determination.

7. Stockholder Rights.

(a) In General. The Participant will not have any stockholder rights or privileges, other than dividend equivalent rights as set forth below, with respect to the Shares subject to Units until such Shares are actually issued and registered in the Participant’s name in the Company’s books and records.

(b) Dividend Equivalent Credits. The Participant shall be credited with an additional number of earned Units as of the Specified Date determined as the quotient of “y” divided by “z” where “y” equals the aggregate amount of any cash dividends paid with respect to Shares during the Measurement Period with respect to a number of Shares equal to the number of Units earned under Section 2 and “z” equals the closing price per Share on the Specified Date, rounded to the nearest whole Share.

8. No Limitation on Rights of the Company. The granting of Units will not in any way affect the right or power of the Company to make adjustments, reclassifications or changes in its capital or business structure or to merge, consolidate, reincorporate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

9. Employment. Nothing in this Agreement or in the Plan will confer on the Participant any right to continue in service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or Affiliate employing or retaining the Participant) to terminate the Participant’s employment at any time for any reason, with or without cause.

10. Tax Treatment and Withholding.

(a) The Participant has had the opportunity to review with his or her own tax advisors the federal, state and local tax consequences of the transactions contemplated by this

Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents.

(b) It is a condition to the Company’s obligation to issue Shares hereunder that the Participant pay to the Company such amount as may be required to satisfy all tax withholding obligations arising in connection with this Award (or otherwise make arrangements acceptable to the Company for the satisfaction of such tax withholding obligations). If the required withholding amount required is not timely paid or satisfied, the Participant’s right to receive such Shares will be permanently forfeited. The Company, in its discretion, may withhold Shares otherwise issuable hereunder in satisfaction of the amount required to be withheld in connection with this Award (based on the Fair Market Value of such Shares on the date of such withholding). All cash payments under this Agreement are subject to applicable withholding, as determined by the Company in its discretion.

11. Notices.

(a) Any notice required to be given or delivered to the Company under the terms of this Agreement will be addressed to it in care of its Secretary, FMC Corporation, at FMC Tower at Cira Centre South, 2929 Walnut Street, Philadelphia, PA 19104, and any notice to the Participant (or other person entitled to receive the Units) will be addressed to such person at the Participant’s address now on file with the Company, or to such other address as either may designate to the other in writing. Except as otherwise provided below in Section 11(b), any notice will be deemed to be duly given when enclosed in a properly sealed envelope addressed as stated above and deposited, postage paid, in a post office or branch post office regularly maintained by the United States government.

(b) The Participant hereby authorizes the Company to deliver electronically any prospectuses or other documentation related to this Award, the Plan and any other compensation or benefit plan or arrangement in effect from time to time (including, without limitation, reports, proxy statements or other documents that are required to be delivered to participants in such plans or arrangements pursuant to federal or state laws, rules or regulations). For this purpose, electronic delivery will include, without limitation, delivery by means of e-mail or e-mail notification that such documentation is available on the Company’s Intranet site. Upon written request, the Company will provide to the Participant a paper copy of any document also delivered to the Participant electronically. The authorization described in this paragraph may be revoked by the Participant at any time by written notice to the Company.

12. Beneficiaries. In the event of the death of the Participant, the issuance of Shares, if any, under this Agreement shall be made in accordance with the Participant’s written beneficiary designation on file with the Company or its representative and/or agent (if such a designation has been duly filed with the Company or its representative and/or agent, in the form prescribed by the Company and in accordance with the notice provisions of Section 11(a)). In the absence of any such beneficiary designation, the delivery of Shares, if any, hereunder will be made to the Participant’s estate.

13. Administration. By entering into this Agreement, the Participant agrees and acknowledges that (a) the Company has provided or made available to the Participant a copy of the Plan, (b) he or she has read the Plan, (c) all Units are subject to the Plan, (d) in the event of a conflict between any term or provision contained herein and a term or provision of the Plan, the applicable terms and provisions of the Plan will govern, and (e) pursuant to the Plan, the Committee is authorized to interpret the Plan and to adopt rules and regulations not inconsistent with the Plan as it deems appropriate. The Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee with respect to questions arising under the Plan or this Agreement.

14. Entire Agreement. This Agreement, together with the Plan, represents the entire agreement between the parties with respect to the subject matter hereof and supersedes any prior agreement, written or otherwise, relating to the subject matter hereof. This Agreement may only be amended by a writing signed by each of the parties hereto.

15. Governing Law. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the State of Delaware without regard to the principles of conflicts-of-laws.

16. Privacy. By signing this Agreement, the Participant hereby acknowledges and agrees to the Company's transfer of certain personal data of such Participant to the Company for purposes of implementing, performing or administering the Plan or any related benefit. Participant expressly gives his or her consent to the Company to process such personal data.

17. Section Headings. The headings of sections and paragraphs of this Agreement are inserted for convenience only and shall not in any way affect the meaning or construction of any provision of this Agreement.

18. Counterparts; Facsimile. This Agreement may be executed in multiple counterparts (including by facsimile signature), each of which will be deemed to be an original, but all of which together will constitute but one and the same instrument.

IN WITNESS WHEREOF, the Company’s duly authorized representative and the Participant have each executed this Agreement on the respective date below indicated.

FMC CORPORATION

By:
Title:
Date:

PARTICIPANT

Signature:
Address:

Date:

Exhibit A

“Operating Cash Flow” means the sum of the Company’s Adjusted Operating Cash Flow for each of the three years in the Measurement Period.

The Company’s Adjusted Operating Cash Flow for each year is the sum of (1) and (2) below:

1. the “adjusted EBITDA” for such year, which represents the Company’s net income (loss) before corporate special charges (income); discontinued operations, net of income taxes; interest expense, net; depreciation and amortization; and the provision (benefit) for income taxes, as reported in the Company’s audited financial statements for the relevant year, and

2. the “change in Working Capital” for such year (which change might be positive or negative), which represents the sum of (a) trade receivables (net), (b) guarantees of vendor financing, (c) inventories, (d) accounts payable (trade and other), (e) advance payments from customers, and (f) accrued customer rebates, each as reported in the Company’s consolidated statements of cash flow for the relevant year.

The Operating Cash Flow may be equitably adjusted in the discretion of the Committee, to account for changes in accounting rules, laws, or regulations, acquisitions or divestitures, interest expenses associated with the Company’s repurchase of shares of common stock, business restructuring, material changes in the North America crop pre-payment program, and other extraordinary events or transactions.

Exhibit 10.20

FMC Corporation

Executive Severance Agreement

THIS EXECUTIVE SEVERANCE AGREEMENT is made and entered into as of the 1st day of April, 2019 (the "Effective Date") by and between FMC Corporation (hereinafter referred to as the "Company") and **Michael Reilly** (hereinafter referred to as the "Executive") (the "Agreement").

WHEREAS, the Executive presently serves the Company in a position of authority and responsibility.

NOW THEREFORE, to assure the Company that it will have the continued dedication of the Executive and the availability of the Executive's service notwithstanding the possibility, threat, or occurrence of a Change in Control of the Company, and to induce the Executive to remain in the employ of the Company, and for other good and valuable consideration, the Company and the Executive agree to the amendment and restatement of the Prior Agreement as follows:

Article 1. Establishment, Term, and Purpose

This Agreement is effective from the Effective Date and will continue in effect until April 1, 2020. On that date, and on each subsequent anniversary thereof, the term of this Agreement will be extended automatically for one (1) additional year, unless the Committee delivers written notice six (6) months prior to such date to the Executive that this Agreement will not be extended. If timely notice not to extend is given, this Agreement will terminate at the end of the term, or extended term, then in progress.

However, in the event a Change in Control occurs during the original or any extended term, this Agreement will remain in effect for the longer of: (i) twenty-four (24) months beyond the end of the month in which such Change in Control occurred; and (ii) until all obligations of the Company hereunder have been fulfilled, and until all benefits required hereunder have been paid to the Executive.

Article 2. Definitions

Whenever used in this Agreement, the following terms will have the meanings set forth below and, when the meaning is intended, the initial letter of the word is capitalized.

2.1 Affiliate means a corporation or other entity controlled by, controlling or under common control with the Company, including, without limitation, any corporation partnership, joint venture or other entity during any period in which at least a fifty percent (50%) voting or profits interest is owned, directly or indirectly, by the Company or any successor to the Company.

2.2 Base Salary means the salary of record paid to an Executive as annual salary, excluding amounts received under incentive or other bonus plans, whether or not deferred.

2.3 Beneficiary means the persons or entities designated or deemed designated by the Executive pursuant to Section 11.2 herein.

2.4 Board means the Board of Directors of the Company.

2.5 Cause means:

(a) the Executive's Willful and continued failure to substantially perform the Executive's employment duties in any material respect (other than any such failure resulting from physical or mental incapacity or occurring after issuance by the Executive of a Notice of Termination for Good Reason), after a written demand for substantial performance is delivered to the Executive that specifically identifies the manner in which the Company believes the Executive has failed to perform the Executive's duties, and after the Executive has failed to resume substantial performance of the Executive's duties on a continuous basis within thirty (30) calendar days of receiving such demand;

(b) the Executive's Willfully engaging in conduct (other than conduct covered under (a) above) which is demonstrably and materially injurious to the Company or an Affiliate; or

(c) the Executive's having been convicted of, or pleading guilty or nolo contendere to, a felony under federal or state law on or prior to a Change in Control.

2.6 Change in Control means the happening of any of the following events:

(a) An acquisition by any Person of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of twenty percent (20%) or more of either (i) the then outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (ii) the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); excluding, however, the following: (A) any acquisition directly from the Company, other than an acquisition by virtue of the exercise of a conversion privilege unless the security being so converted was itself acquired directly from the Company, (B) any acquisition by the Company, (C) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any entity controlled by the Company, or (D) any acquisition pursuant to a transaction which complies with Subsections (i), (ii) and (iii) of Subsection (c) of this Section 2.6;

(b) A change in the composition of the Board such that the individuals who, as of the Effective Date, constitute the Board (such Board will be hereinafter referred to as the “Incumbent Board”) cease for any reason to constitute at least a majority of the Board; provided, however, for purposes of this Section 2.6, that any individual who becomes a member of the Board subsequent to the Effective Date, whose election, or nomination for election by the Company’s stockholders, was approved by a vote of at least a majority of those individuals who are members of the Board and who were also members of the Incumbent Board (or deemed to be such pursuant to this proviso) will be considered as though such individual were a member of the Incumbent Board; but, provided further, that any such individual whose initial assumption of office occurs as a result of either an actual or threatened election contest (as such terms are used in Rule 14a-11 of Regulation 14A promulgated under the Exchange Act) or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board will not be so considered as a member of the Incumbent Board;

(c) Consummation of a reorganization, merger or consolidation, sale or other disposition of all or substantially all of the assets of the Company, or acquisition by the Company of the assets or stock of another entity (“Corporate Transaction”); excluding, however, such a Corporate Transaction pursuant to which (i) all or substantially all of the individuals and entities who are the beneficial owners, respectively, of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Corporate Transaction will beneficially own, directly or indirectly, more than sixty percent (60%) of, respectively, the outstanding shares of common stock, and the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the corporation resulting from such Corporate Transaction (including, without limitation, a corporation which as a result of such transaction owns the Company or all or substantially all of the Company’s assets either directly or through one or more subsidiaries) in substantially the same proportions as their ownership, immediately prior to such Corporate Transaction, of the Outstanding Company Common Stock and Outstanding Company Voting Securities, as the case may be, (ii) no Person (other than the Company, any employee benefit plan (or related trust) of the Company or such corporation resulting from such Corporate Transaction) will beneficially own, directly or indirectly, twenty percent (20%) or more of, respectively, the outstanding shares of common stock of the corporation resulting from such Corporate Transaction or the combined voting power of the outstanding voting securities of such corporation entitled to vote generally in the election of directors except to the extent that such ownership existed prior to the Corporate Transaction, and (iii) individuals who were members of the Incumbent Board will constitute at least a majority of the members of the board of directors of the corporation resulting from such Corporate Transaction; or

(d) The approval by the stockholders of the Company of a complete liquidation or dissolution of the Company.

2.7 Code means the Internal Revenue Code of 1986, as amended from time to time, and any successor thereto.

2.8 Committee means the Compensation and Organization Committee of the Board or any other committee of the Board appointed to perform the functions of the Compensation and Organization Committee.

2.9 Company means FMC Corporation, a Delaware corporation, or any successor thereto as provided in Article 10 herein.

2.10 Date of Separation from Service means the date on which a Qualifying Termination occurs.

2.11 Disability means complete and permanent inability by reason of illness or accident to perform the duties of the occupation at which the Executive was employed when such disability commenced.

2.12 Exchange Act means the Securities Exchange Act of 1934, as amended from time to time, and any successor thereto.

2.12 Good Reason means, without the Executive's express written consent, the occurrence of any one or more of the following:

(a) The assignment of the Executive to duties materially inconsistent with the Executive's authorities, duties, responsibilities and status (including, without limitation, offices, titles and reporting requirements) as an employee of the Company (including, without limitation, any material change in duties or status as a result of the stock of the Company ceasing to be publicly traded or of the Company becoming a subsidiary of another entity), or a reduction or alteration in the nature or status of the Executive's authorities, duties, or responsibilities from the greatest of those in effect (i) immediately preceding the Company's entry into any definitive agreement to conduct the Change in Control, or (ii) immediately preceding the Change in Control;

(b) The Company's requiring the Executive to be based at a location which is at least fifty (50) miles further from the Executive's then current primary residence than such residence is from the office where the Executive is located at the time of the Change in Control, except for required travel on the Company's business to an extent substantially consistent with the Executive's business obligations;

(c) A reduction by the Company in the Executive's Base Salary;

(d) A material reduction in the Executive's level of participation in any of the Company's short- and/or long-term incentive compensation plans, or employee benefit or retirement plans, policies, practices, or arrangements in which the Executive participates from the greatest of the levels in place: (i) immediately preceding the Company's entry into any definitive agreement to conduct the Change in Control, or (ii) immediately preceding the Change in Control;

(e) The failure of the Company to obtain a satisfactory agreement from any successor to the Company to assume and agree to perform this Agreement, as contemplated in Article 10 herein.

provided that any such event shall constitute Good Reason only if Executive notifies the Company in writing of such event within 90 days following the initial occurrence thereof, the Company fails to cure such event within 30 days after receipt from Executive of written notice thereof, and Executive resigns his employment within two years following the initial occurrence of such event.

The existence of Good Reason will not be affected by the Executive's temporary incapacity due to physical or mental illness not constituting a Disability.

2.14 Notice of Termination means a written notice which indicates the specific termination provision in this Agreement relied upon, and sets forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of the Executive's employment under the provision so indicated.

2.15 Person has the meaning ascribed to such term in Section 3(a)(9) of the Exchange Act and used in Sections 13(d) and 14(d) thereof, including a "group" as provided in Section 13(d).

2.16 Qualifying Termination means any of the events described in Section 3.2 herein, the occurrence of which triggers the payment of Severance Benefits hereunder.

2.17 Separation from Service means the Executive's termination of employment with the Company, its Affiliates and with each member of the controlled group (within the meaning of Sections 414(b) or (c) of the Code) of which the Company is a member. An Executive will not be treated as having a Separation from Service during any period the Executive's employment relationship continues, such as a result of a leave of absence, and whether a Separation from Service has occurred shall be determined by the Committee (on a basis consistent with rules under Section 409A) after consideration of all the facts and circumstances, including whether either no further services are to be performed or there is a reasonably anticipated permanent and substantial decrease (e.g., 80% or more) in the level of services to be performed (and the related amount of compensation to be received for such services) below the level of services previously performed (and compensation previously received).

2.18 Severance Benefits means the payment of severance compensation as provided in Section 3.3 herein.

2.19 Trust means the Company grantor trust described in Article 6 of this Agreement.

2.20 Willful means any act or omission by the Executive that was in good faith and with a reasonable belief that the action or omission was in the best interests of the Company or its affiliates. Any act or omission based upon authority given pursuant to a duly adopted Board resolution, or, upon the instructions of any senior officer of the Company, or based upon the advice of counsel for the Company will be conclusively presumed to be taken or omitted by the Executive in good faith and in the best interests of the Company and/or its affiliates.

Article 3. Severance Benefits

3.1 Right to Severance Benefits. The Executive will be entitled to receive the Severance Benefits from the Company if a Qualifying Termination occurs after a Change in Control and before the end of the twenty-fourth (24th) calendar month following the end of the month in which the Change in Control occurs.

The Executive will not be entitled to receive Severance Benefits if the Executive’s employment is terminated (i) for Cause, (ii) due to a voluntary termination without Good Reason, or (iii) due to death or Disability.

3.2 Qualifying Termination. A Qualifying Termination shall occur if:

(a) The Executive incurs a Separation from Service because of an involuntary termination of the Executive’s employment by the Company for reasons other than Cause, Disability or death; or

(b) The Executive incurs a Separation from Service because of a voluntary termination by the Executive for Good Reason pursuant to a Notice of Termination delivered to the Company by the Executive.

3.3 Description of Severance Benefits. In the event the Executive becomes entitled to receive Severance Benefits, as provided in Sections 3.1 and 3.2 herein, the Company will pay to the Executive (or in the event of the Executive’s death, the Executive’s Beneficiary) and provide him with the following at the time or times provided in Section 4.1 herein:

(a) An amount equal to two (2) times the highest rate of the Executive’s annualized Base Salary in effect at any time up to and including the Date of Separation from Service.

(b) An amount equal to two (2) times the Executive’s highest annualized target Management Incentive Award granted under the FMC Corporation Incentive Compensation and Stock Plan for any plan year up to and including the plan year in which the Executive’s Date of Separation from Service occurs.

(c) An amount equal to the Executive’s unpaid Base Salary, and unused and accrued vacation pay, earned or accrued through the Date of Separation from Service.

(d) Any Management Incentive Award otherwise payable (but for Executive’s separation) for the plan year in which the Executive’s Date of Separation from Service occurred, prorated through the Date of Separation from Service.

(e) A continuation of the Company's welfare benefits of life and accidental death and dismemberment, and disability insurance coverage for two (2) full years after the Date of Separation from Service. These benefits will be provided to the Executive (and to the Executive's covered spouse and dependents) at the same premium cost, and at the same coverage level, as in effect as of the date of the Change in Control. The continuation of these welfare benefits will be discontinued prior to the end of the two (2) year period if the Executive has available substantially similar benefits at a comparable cost from a subsequent employer, as determined by the Committee.

(f) For a period of two (2) full years following the Date of Separation from Service, the Company shall provide medical insurance for the Executive (and the Executive's covered spouse and dependents) at the same premium cost, and at the same coverage level, as in effect as of the date of the Change in Control. The continuation of this medical insurance will be discontinued prior to the end of the two (2) year period if the Executive has available substantially similar medical insurance at a comparable cost from a subsequent employer, as determined by the Committee. The date that medical benefits provided in this paragraph cease to be provided under this paragraph will be the date of the Executive's qualifying event for continuation coverage purposes under Code Section 4980B(f)(3)(B).

Awards granted under the FMC Corporation Incentive Compensation and Stock Plan, and other incentive arrangements adopted by the Company will be treated pursuant to the terms of the applicable plan.

The aggregate benefits accrued by the Executive as of the Date of Separation from Service under the FMC Corporation Salaried Employees' Retirement Program, the FMC Corporation Savings and Investment Plan, the FMC Corporation Salaried Employees' Equivalent Retirement Plan, the FMC Corporation Non-Qualified Savings and Investment Plan and other savings and retirement plans sponsored by the Company will be distributed pursuant to the terms of the applicable plan.

In addition, for purposes of benefit calculation only under the Company's nonqualified retirement plans with respect to benefits that have not been paid prior to such Change in Control, it will be assumed that the Executive's employment continued following the Date of Separation from Service for two (2) full years (i.e., two (2) additional years of age and service credits will be added); provided, however, that for purposes of determining "final average pay" under such programs, the Executive's actual pay history as of the Date of Separation from Service will be used.

3.4 Termination for Disability. If the Executive's employment is terminated due to Disability, the Executive will receive the Executive's Base Salary through the Date of Separation from Service, and the Executive's benefits will be determined in accordance with the Company's disability, retirement, survivor's benefits, insurance and other applicable plans and programs then in effect. If the Executive's employment is terminated due to Disability, he will not be entitled to the Severance Benefits described in Section 3.3.

3.5 Termination upon Death. If the Executive's employment is terminated due to death, the Executive's benefits will be determined in accordance with the Company's retirement, survivor's benefits, insurance and other applicable programs of the Company then in effect. If the Executive's employment is terminated due to death, neither the Executive's estate nor the Executive's Beneficiary will be entitled to the Severance Benefits described in Section 3.3.

3.6 Termination for Cause, or Other Than for Good Reason. Following a Change in Control of the Company, if the Executive's employment is terminated either: (a) by the Company for Cause; or (b) by the Executive (other than for Good Reason), the Company will pay the Executive an amount equal to the Executive's Base Salary and accrued vacation through the Date of Separation from Service, at the rate then in effect, plus all other amounts to which the Executive is entitled under any plans of the Company, at the time such payments are due and the Company will have no further obligations to the Executive under this Agreement.

3.7 Notice of Termination. Any termination of employment by the Company or by the Executive for Good Reason will be communicated by a Notice of Termination.

Article 4. Form and Timing of Severance Benefits

4.1 Form and Timing. Subject to Section 4.2 and 5.3:

(a) the amounts payable under Sections 3.3(a), (b) and (c) will be paid in a lump sum on the 31st day following the Termination Date (or, if such 31st day is not a business day, the next business day immediately following such 31st day);

(b) the amount payable under Section 3.3(d) will be paid in a lump sum at the same time that Management Incentive Awards are paid to employees generally for the year in which the Executive's Separation from Service occurs, but in no event later than 2 ½ months following the end of that year in which the Executives Separation from Service occurs; and

(c) the benefits due under Sections 3.3(e) and 3.3(f) will continue uninterrupted following the Executive's Separation from Service (but will be discontinued if the requirements of Section 4.2 are not timely satisfied).

4.2 Release. All rights, payments and benefits due to the Executive under Section 3.3 (other than Section 3.3(c)) shall be conditioned on the Executive's execution of a general release of claims against the Company and its affiliates in a form reasonably prescribed by the Company and on that release becoming irrevocable within 30 days following the Termination Date.

Article 5. Taxes and Tax Compliance

5.1 Withholding of Taxes. The Company will be entitled to withhold from any amounts payable under this Agreement all taxes as it may believe are reasonably required to be withheld (including, without limitation, any United States federal taxes and any other state, city, or local taxes).

5.2 Section 409A Compliance. This Agreement shall be interpreted to avoid any penalty sanctions under Section 409A of the Code. If any payment or benefit cannot be provided or made at the time specified herein without incurring sanctions under Section 409A of the Code, then such benefit or payment shall be provided in full at the earliest time thereafter when such sanctions will not be imposed. All payments to be made upon a termination of employment under this Agreement will be made upon a “separation from service” under Section 409A of the Code. For purposes of Section 409A of the Code, each payment made under this Agreement shall be treated as a separate payment. In no event may the Executive, directly or indirectly, designate the calendar year of payment. Notwithstanding any other provision of this Agreement to the contrary, any payment that constitutes the deferral of compensation (within the meaning of Treas. Reg. § 1.409A-1(b)) that is otherwise required to be made to the Executive prior to the day after the date that is six months from the Date of Separation from Service shall be accumulated, deferred and paid in a lump sum to the Executive (with interest on the amount deferred from the Date of Separation from Service until the day prior to the actual payment at the federal short-term rate on the Date of Separation from Service) on the day after the date that is six months from the Date of Separation from Service; *provided*, *however*, if Executive dies prior to the expiration of such six month period, payment to the Executive’s Beneficiary shall be made as soon as practicable following the Executive’s death. Any reimbursements or in-kind benefits that constitute a deferral of compensation (within the meaning of Treas. Reg. § 1.409A1(b)) will be provided subject to the requirements of Treas. Reg. §§ 1.409A3(i)(1)(iv)(A)(3), (4) and (5).

5.3 Parachute Payments.

(a) Notwithstanding anything to the contrary in this Agreement or otherwise, in the event that any payment or benefit received or to be received by the Executive in connection with a Change in Control or the Executive’s Separation from Service (whether pursuant to the terms of this Agreement or any other plan, policy, arrangement or agreement maintained or entered into by the Company (or any of its Affiliates or successors) or any Person whose actions result in a Change in Control (or any Person affiliated with such Person)) (all such payments and benefits, the “**Parachute Payments**”) would be subject (in whole or in part) to an excise tax under Section 4999 of the Code (the “**Excise Tax**”), then the Parachute Payments shall either be (i) reduced (but not below zero) so that the present value of the Parachute Payments is one dollar less than three times the Executive’s “base amount” (as defined in Section 280G(b)(3) of the Code) so that no portion of the Parachute Payments shall be subject to the Excise Tax or (ii) paid in full, whichever produces the better net after-tax position to the Executive (taking into account the Excise Tax and any other applicable taxes).

(b) The reduction of the Parachute Payments contemplated in Section 5.3(a) above shall be implemented by determining the Parachute Payment Ration (as defined below), as determined in good faith by the Company (or its successor), for each Parachute Payment and then reducing the Parachute Payments in order beginning with the Parachute Payment with the highest Parachute Payment Ratio. For Parachute Payments with the same Parachute Payment Ratio, such Parachute Payments shall be reduced based on the time of payment of such Parachute Payments, with amounts having later payment dates being reduced first. For

Parachute Payments with the same Parachute Payment Ratio and the same time of payment, such Parachute Payments shall be reduced on a pro rata basis (but not below zero) prior to reducing Parachute Payments with a lower Parachute Payment Ratio. For purposes hereof, the term "**Parachute Payment Ratio**" shall mean a fraction, (i) the numerator of which is the value of the applicable Parachute Payment (as calculated for purposes of Section 280G of the Code), and (ii) the denominator of which is the intrinsic (i.e., economic) value of such Parachute Payment.

Article 6. Establishment of Trust

The Company has created a domestic Trust (which will be a grantor trust within the meaning of Sections 671-678 of the Code) for the benefit of the Executive and Beneficiaries. The Trust has a Trustee selected by the Company, and has certain restrictions as to the Company's ability to amend the Trust or cancel benefits provided thereunder. Any assets contained in the Trust will, at all times, be specifically subject to the claims of the Company's general creditors in the event of bankruptcy or insolvency.

At any time following the Effective Date hereof, the Company may, but is not obligated to, deposit assets in the Trust in an amount equal to or less than the aggregate Severance Benefits which may become due to the Executive under Sections 3.3 (a), (b), (c) and (d) of this Agreement.

As soon as practicable after the Company has knowledge that a Change in Control is imminent, but no later than the day immediately preceding the date of the Change in Control, the Company will deposit assets in such Trust in an amount equal to the estimated aggregate Severance Benefits which may become due to the Executive under Sections 3.3 (a), (b), (c) and (d) of this Agreement. Such deposited amounts will be reviewed and increased, if necessary, every six (6) months following a Change in Control to reflect the Executive's estimated aggregate Severance Benefits at such time.

Article 7. The Company's Payment Obligation

The Company's obligation to make the payments and the arrangements provided for herein will be absolute and unconditional, and will not be affected by any circumstances, including, without limitation, any offset, counterclaim, recoupment, defense, or other right which the Company may have against the Executive or anyone else. All amounts payable by the Company hereunder will be paid without notice or demand. Each and every payment made hereunder by the Company will be final, and the Company will not seek to recover all or any part of such payment from the Executive or from whomsoever may be entitled thereto, for any reasons whatsoever.

The Executive will not be obligated to seek other employment in mitigation of the amounts payable or arrangements made under any provision of this Agreement, and the obtaining of any such other employment will in no event effect any reduction of the Company's obligations to make the payments and arrangements required to be made under this Agreement, except to the extent provided in Sections 3.3(e) and (f) herein. Notwithstanding anything in this Agreement to the contrary, if Severance Benefits are paid under this Agreement, no severance benefits under any program of the Company, other than benefits described in this Agreement, will be paid to the Executive.

Article 8. Fees and Expenses

To the extent permitted by law, the Company will pay as incurred (within ten (10) days following receipt of an invoice from the Executive) all legal fees, costs of litigation, prejudgment interest, and other expenses incurred in good faith by the Executive as a result of the Company's refusal to provide the Severance Benefits to which the Executive becomes entitled under this Agreement, or as a result of the Company's contesting the validity, enforceability, or interpretation of this Agreement, or as a result of any conflict between the parties pertaining to this Agreement; provided, however, that the Company will reimburse the Executive only for such expenses arising out of litigation commenced within three years following the Executive's Separation from Service. Notwithstanding any other provision in this Article 8, the Company will reimburse the Executive only for expenses incurred prior to the end of the fifth year following the Executive's Separation from Service.

Article 9. Outplacement Assistance

Following a Qualifying Termination (as described in Section 3.2 herein), the Executive will be reimbursed by the Company for the costs of all reasonable outplacement services obtained by the Executive within the two (2) year period after the Date of Separation from Service; provided, however, that reimbursements must be made by the end of the third year following the Date of Separation from Service and the total reimbursement for such outplacement services will be limited to an amount equal to fifteen percent (15%) of the Executive's Base Salary as of the Date of Separation from Service.

Article 10. Successors and Assignment

10.1 Successors to the Company. The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation, or otherwise) of all or substantially all of the business and/or assets of the Company or of any division or subsidiary thereof to expressly assume and agree to perform the Company's obligations under this Agreement in the same manner and to the same extent that the Company would be required to perform them if no such succession had taken place.

10.2 Assignment by the Executive. This Agreement will inure to the benefit of and be enforceable by the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees, and legatees. If the Executive dies while any amount would still be payable to him hereunder had he continued to live, all such amounts, unless otherwise provided herein, will be paid in accordance with the terms of this Agreement to the Executive's Beneficiary. If the Executive has not named a Beneficiary, then such amounts will be paid to the Executive's devisee, legatee, or other designee, or if there is no such designee, to the Executive's estate, and such designee, or the Executive's estate will be treated as the Beneficiary hereunder.

Article 11. Miscellaneous

11.1 Employment Status. Except as may be provided under any other agreement between the Executive and the Company, the employment of the Executive by the Company is "at will," and may be terminated by either the Executive or the Company at any time, subject to applicable law.

11.2 Beneficiaries. The Executive may designate one or more persons or entities as the primary and/or contingent Beneficiaries of any Severance Benefits owing to the Executive under this Agreement. Such designation must be in the form of a signed writing acceptable to the Committee. The Executive may make or change such designations at any time.\

11.3 Severability. In the event any provision of this Agreement will be held illegal or invalid for any reason, the illegality or invalidity will not affect the remaining parts of the Agreement, and the Agreement will be construed and enforced as if the illegal or invalid provision had not been included. Further, the captions of this Agreement are not part of the provisions hereof and will have no force and effect.

11.4 Modification. No provision of this Agreement may be modified, waived, or discharged unless such modification, waiver, or discharge is agreed to in writing and signed by the Executive and by an authorized member of the Committee, or by the respective parties' legal representatives and successors.

11.5 Applicable Law. To the extent not preempted by the laws of the United States, the laws of the state of Delaware will be the controlling law in all matters relating to this Agreement.

11.6 Indemnification. To the full extent permitted by law, the Company will, both during and after the period of the Executive's employment, indemnify the Executive (including by advancing him expenses) for any judgments, fines, amounts paid in settlement and reasonable expenses, including any attorneys' fees, incurred by the Executive in connection with the defense of any lawsuit or other claim to which he is made a party by reason of being (or having been) an officer, director or employee of the Company or any of its subsidiaries. The Executive will be covered by director and officer liability insurance to the maximum extent that that insurance covers any officer or director (or former officer or director) of the Company.

IN WITNESS WHEREOF, the parties have executed this amended and restated Agreement on this __ day of April, 2019.

FMC Corporation	Executive:
By: ___________________________	___________________________
Kyle Matthews	
Its: Vice President, CHRO	

Attest: __________________________

Exhibit 21

FMC CORPORATION

SIGNIFICANT SUBSIDIARIES OF THE REGISTRANT

The following is a list of the Company's consolidating subsidiaries, as of December 31, 2019, except for certain subsidiaries of the Registrant which do not, in the aggregate, constitute a significant subsidiary as that term is defined in Rule 12b-2 under the Securities Exchange Act of 1934. This list does not include equity affiliate investments and cost investment.

Name of Subsidiary	State or Country of Incorporation
FMC Corporation (the Registrant)	Delaware
FMC Agricultural Products International AG	Switzerland
FMC Agroquímica de México S.R.L de C.V.	Mexico
FMC Chemicals Netherlands BV	Netherlands
FMC Chemical sprl	Belgium
FMC Finance BV	Netherlands
FMC Foret SA	Spain
FMC India Private Limited	India
FMC of Canada Limited	Canada
FMC Química do Brasil Ltda	Brazil
FMC (Suzhou) Crop Care Co., Ltd	China
PT Bina Guna Kimia	Indonesia
Cheminova India Ltd	India
Cheminova A/S	Denmark
FMC Agro Singapore Pte	Singapore
Closed Joint Stock Company "DuPont Khimprom"	Russia
FMC International Switzerland Sarl	Switzerland
FMC Agricultural Caribe Industries, Ltd.	Puerto Rico
DuPont Agricultural Chemicals Ltd, Shanghai	China
FMC Switzerland II GmbH	Switzerland

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
FMC Corporation:

We consent to the incorporation by reference in the registration statements on Form S-3 (No. 333-229962) and Form S-8 (Nos. 333-235595, 333-219643, 333-64702, 333-62683, 333-36973, 333-24039, 333-18383, 333-69805, 333-69714, 333-111456, 333-172387, and 333-172388) of FMC Corporation of our reports dated February 28, 2020, with respect to the consolidated balance sheets of FMC Corporation and subsidiaries as of December 31, 2019 and 2018, the related consolidated statements of income (loss), comprehensive income (loss), changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes and schedule II – valuation and qualifying accounts and reserves, and the effectiveness of internal control over financial reporting as of December 31, 2019, which reports appear in the December 31, 2019 annual report on Form 10-K of FMC Corporation.

Our report refers to the Company's adoption of Accounting Standards Update No. 2016-02, Leases (Topic 842) and the related amendments.

/s/ KPMG LLP
Philadelphia, Pennsylvania
February 28, 2020

Exhibit 31.1

CHIEF EXECUTIVE OFFICER CERTIFICATION

I, Pierre R. Brondeau, certify that:

1. I have reviewed this Annual Report on Form 10-K of FMC Corporation;
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 28, 2020

/s/ Pierre R. Brondeau

Pierre R. Brondeau
Chief Executive Officer and Chairman

Exhibit 31.2

CHIEF FINANCIAL OFFICER CERTIFICATION

I, Andrew D. Sandifer, certify that:

1. I have reviewed this Annual Report on Form 10-K of FMC Corporation;

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 28, 2020

/s/ Andrew D. Sandifer

Andrew D. Sandifer
Executive Vice President
and Chief Financial Officer

Exhibit 32.1

CEO CERTIFICATION OF ANNUAL REPORT

I, Pierre R. Brondeau, Chief Executive Officer and Chairman of FMC Corporation (“the Company”), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, based on my knowledge that:

(1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 28, 2020

/s/ Pierre R. Brondeau

Pierre R. Brondeau
Chief Executive Officer and Chairman

Exhibit 32.2

CFO CERTIFICATION OF ANNUAL REPORT

I, Andrew D. Sandifer, Executive Vice President and Chief Financial Officer of FMC Corporation (“the Company”), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, based on my knowledge that:

(1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 28, 2020

/s/ Andrew D. Sandifer

Andrew D. Sandifer
Executive Vice President
and Chief Financial Officer