EASTMAN

Enhancing the quality of life in a material way

EMN**AR**20

DEAR FELLOW EASTMAN STOCKHOLDERS,

During our 2020 centennial year, the dedication and resolve of the Eastman team was again on full display. We began the year with uncertainty, but no one could have predicted the wide-scale disruption that we are experiencing due to COVID-19. In addition to the grave threat this virus presents, it has upended our personal and work lives and profoundly impacted the global economy. I am grateful to the women and men of Eastman who continue to navigate through this uneasy and unsettling time, adapting to an ever-changing environment and coming together as never before to keep each other safe, keep our operations running, and enable our company to weather this staggering storm.

I am enormously proud of how the Eastman team has responded to this historic crisis. In the first quarter of 2020, we quickly and decisively adjusted our operations and introduced multiple layers of protection to keep our employees safe and preserve our operational integrity.

Given the uncertainty, we also took swift action to shift our financial focus to prioritize cash and liquidity, including aggressive inventory management. As a result of these actions, we generated greater than $1 billion of free cash flow for the fourth consecutive year, demonstrating our ability to deliver strong free cash flow in just about any environment.

Despite unprecedented challenges related to COVID-19, our financial performance for the full year demonstrates the resilience of our people and our portfolio. We delivered record fourth-quarter adjusted earnings per share (EPS) and resilient full-year EPS, reflecting the value of serving a diverse set of end markets — the benefit of our innovation-driven growth model. Our continued, aggressive cost management delivered approximately $150 million of cost savings, net of inflation, in 2020 compared to 2019.

We continued to put our cash to work in a disciplined way. We returned $418 million to stockholders through share repurchases and our dividend, which we increased for the 11th consecutive year. We also significantly reduced net debt.

I'm incredibly appreciative of all members of the global Eastman team for all they did to deliver this excellent performance. They delivered in a big way in 2020.

BUILDING ON OUR MOMENTUM IN 2021 AND BEYOND

We have entered 2021 from a strong position, and we have every intention of building on that momentum as the global economy continues to recover. There is still uncertainty due to COVID-19; therefore, we continue to focus on what we can control, beginning with creating our own growth. By leveraging our innovation-driven growth model, we expect to grow corporate new business revenue to greater than $600 million in the coming years. This growth is enabling us to perform better than our recovering end markets, particularly for many of our specialty products.

Although the pandemic slowed our progress last year, we remain fully committed to optimizing our portfolio to address the underperforming parts of Additives & Functional Products, which include the adhesive resins and tire additives businesses. We announced the shutdown of one of our tire additives manufacturing facilities and continue to explore other options in these businesses, including potential joint ventures and divestitures. However, we are careful not to sacrifice innovation and continue to make progress on several programs, such as next-generation Eastman Crystex Cure Pro.

We also continue to aggressively manage costs and expect our cost structure will be about flat in 2021 compared with 2020. We expect more permanent savings from several specific programs including maintenance efficiency, asset footprint optimization, supply-chain optimization, digitization, and productivity improvements.

With our continued emphasis on cash generation, we again expect our free cash flow to be greater than $1 billion, which means that we will have delivered more than $5 billion in free cash flow since 2017. Our priorities for uses of cash in 2021 are continuing to fund our attractive and growing dividend, reducing net debt, although to a lesser extent than in 2020, and a combination of share repurchases and accretive bolt-on acquisitions.

ACCELERATING THE CIRCULAR ECONOMY AND CREATING A NEW VECTOR OF GROWTH

The pandemic has changed our approach to so many aspects of how we do business. Nowhere has that been more evident than in how we engage and collaborate with customers. I'm proud to say that innovation not only continued at Eastman in 2020, but we also found new ways to leverage our innovation-driven growth models and accelerate our circular economy initiatives to create a new vector of growth for the company.

Last year, we declared our intention to be a leader in the circular economy. We have taken a significant step in that direction by announcing plans to invest approximately $250 million over the next two years in a new plastic-to-plastic molecular recycling facility at our Kingsport, Tenn., site. The facility is expected to use approximately 110,000 metric tons of plastic waste annually, enabling the production of between 150,000 and 200,000 metric tons of polymer with recycled content.

Each year, more than 300 million tons of plastic are produced globally, and only about 12% is recycled. Our polyester renewal technology will allow us to take low-quality plastics that are currently hard to recycle and break them down into their virgin form to create new, high-quality plastic materials, which can then be recycled again and again and again. We are diverting waste that would otherwise be incinerated or end up in landfills or waterways and giving it new life an infinite number of times.

We realize that plastic waste is reaching crisis level, and others recognize that too. Big brands like H&M, Patagonia, Tupperware, Estée Lauder, and Lego have made significant commitments to reduce plastic waste by increasing the amount of recycled content in their products and product packaging. Our technology can help them achieve their very aggressive goals. And because the molecules are broken down to their original form, our customers get products made with recycled content that do not sacrifice quality or performance. Our technology, along with other viable solutions, will enable our customers and brand owners to reach their sustainability commitments, and together we will make an impact on plastic waste.

By using plastic waste as feedstock, our polyester renewal technology is less carbon intensive, which contributes to a reduced carbon footprint. When compared with processes using fossil feedstocks, our technology reduces greenhouse gas emissions by between 20%–30%, which will help us achieve our aggressive goal of reducing absolute greenhouse gas emissions by one-third by 2030 and achieving carbon neutrality by 2050.

We are confident in this investment because we have been one of the pioneers in developing this technology at commercial scale, and we have more than three decades of expertise in this innovative recycling process. We expect to start this facility at a higher-than-normal utilization rate as we begin production, serving markets like packaging. We will upgrade the mix of this facility over time as we ramp up penetration into higher-value specialty markets, an approach in which Eastman has tremendous expertise.

Beyond the positive societal impact, this investment is also economically attractive. We expect the return on capital to be above the high end of the 10%–15% range. In addition, we expect our circular economy initiatives to make a meaningful contribution to corporate revenue growth going forward. We expect to demonstrate to all stakeholders that a solution to the plastic waste crisis is possible — with an attractive return.

In short, we are proving that molecular recycling is scalable, economically viable, and can contribute to solving the plastic waste crisis while reducing our carbon footprint. And we are just getting started. The global plastic and climate crises are too large for one group to solve, which is why we must come together. We see this as an opportunity to build plants through partnerships around the world.

A BETTER CIRCLE

At Eastman, we take our purpose of enhancing the quality of life in a material way seriously, as we do our responsibility to be a leader in sustainability.

We continue to make progress in this area and were named as one of *The Wall Street Journal's* Most Sustainably Managed Companies of 2020. We also ranked No. 27 on *Barron's* 100 Most Sustainable Companies list for 2021.

As a materials innovator, Eastman is uniquely positioned to address these challenges and to help create solutions that serve everyone. It's what we refer to as "a better circle." Through this approach, we will:

Mitigate climate change
Eastman has a responsibility to continuously improve its operational footprint. The company supports the Paris Agreement and, in alignment with it, Eastman is committing to achieve carbon neutrality by 2050. As we face this significant challenge, we view Eastman as an active innovation partner. We have developed a variety of innovative products that enable our customers and consumers to reduce their carbon footprint.

Mainstream circularity
As I discussed earlier in this letter, Eastman intends to be a leader in the circular economy. That means keeping plastic waste out of landfills and the environment through recycling innovations that convert waste to materials, thereby reducing the use of fossil feedstocks.

Care for society
Eastman's business begins and ends with people. By working from the inside out to ensure our employee population mirrors the world's population in our diverse makeup and aligning our external partnerships and support with our key impact areas, Eastman will contribute to creating a more equitable society. Our innovation strategy has also been focused on products that live up to our purpose of enhancing the quality of life in a material way.

I encourage you to read our specific goals in each of these areas in our 2020 sustainability report "A Better Circle." Our sustainability strategy builds on the progress we have made and the crucial insights we have gained in sustainable innovation. We are committed to advancing both environmental and social practices across our corporation and within our communities and to be open and transparent in our progress.

WORKING TOWARD A BRIGHTER FUTURE

I close this letter by again recognizing the true heroes — the men and women of Eastman who show up each day, whether at our manufacturing facilities, at the office, or at home. Under extraordinary circumstances, they continue to make essential products, supply our customers, run our businesses, innovate new solutions, and do the necessary work to keep our company moving forward. I want to thank them and the teams who are working tirelessly to keep our employees safe from COVID-19 by continuously monitoring, communicating, and implementing vital protocols and procedures.

This disease has taken its toll on all of us, and no one has felt it more than the loved ones of those we have lost, including the families and colleagues of seven team members. Their heartbreaking losses, along with the millions of others who have been afflicted by this disease, are a sobering reminder of why we must keep doing everything we can to ensure the health and safety of our employees.

As we embark on a new century of success at Eastman, we are optimistic that brighter days are ahead as COVID-19 vaccines are more widely distributed, as the global economy continues to recover, and as we regain a greater sense of normalcy in our daily lives. There is much we intend to accomplish in 2021, and I am confident that we will.

You play an important role in our success, so on behalf of the global Eastman team, thank you for your continued support. We remain committed to rewarding your investment and delivering on the confidence that you have placed in us.

Sincerely,

Mark Costa
March 19, 2021

Non-GAAP financial measures — adjusted earnings, free cash flow, and net debt: The Chairman and CEO's letter includes non-GAAP earnings adjusted to exclude certain non-core and unusual items; "free cash flow," which means GAAP cash provided by operating activities less net capital expenditures (typically GAAP cash used in additions to properties and equipment); and "net debt," defined as the GAAP measure total borrowings less the GAAP measure cash and cash equivalents. Reconciliations to the most directly comparable GAAP financial measures and other associated disclosures, including a description of the excluded and adjusted items, are available in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this Annual Report.

Forward-looking statements: This Annual Report, including the Chairman and CEO's letter, includes forward-looking statements concerning plans and expectations for Eastman Chemical Company. Actual results could differ materially from our expectations. See the "Forward-looking statements" and "Risk factors" sections in "Management's discussion and analysis of financial condition and results of operations" of this Annual Report.

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ABOUT OUT BUSINESS

Eastman Chemical Company ("Eastman" or the "Company") is a global specialty materials company that produces a broad range of products found in items people use every day. Eastman began business in 1920 for the purpose of producing chemicals for Eastman Kodak Company's photographic business and became a public company, incorporated in Delaware, on December 31, 1993. Eastman has 47 manufacturing facilities and has equity interests in three manufacturing joint ventures in 14 countries that supply products to customers throughout the world. The Company's headquarters and largest manufacturing facility are located in Kingsport, Tennessee. With a robust portfolio of specialty businesses, Eastman works with customers to deliver innovative products and solutions with commitment to safety and sustainability.

In the first years as a stand-alone company, Eastman was diversified between commodity and more specialty chemical businesses. Beginning in 2004, the Company refocused its strategy and changed its businesses and portfolio of products, first by the divestiture and discontinuance of under-performing assets and commodity businesses and initiatives (including divestiture in 2004 of resins, inks, and monomers product lines, divestiture in 2006 of the polyethylene business, and divestiture from 2007 to 2010 of the polyethylene terephthalate ("PET") assets and business). The Company then pursued growth through the development and acquisition of more specialty businesses and product lines by inorganic acquisition and integration (including the acquisition of Solutia, Inc., a global leader in performance materials and specialty chemicals, in 2012, and Taminco Corporation, a global specialty chemical company, in 2014) and organic development and commercialization of new and enhanced technologies and products.

Eastman's objective is to be a global specialty materials company that enhances the quality of life in a material way with consistent, sustainable earnings growth and strong cash flow. Integral to the Company's strategy for growth is leveraging its heritage expertise and innovation within its cellulose and acetyl, olefins, polyester, and alkylamine chemistries. For each of these "streams", the Company has developed and acquired a combination of assets and technologies that combine scale and integration across multiple manufacturing units and sites as a competitive advantage. Management uses an innovation-driven growth model which consists of leveraging world class scalable technology platforms, delivering differentiated application development, and relentlessly engaging the market. The Company sells differentiated products into diverse markets and geographic regions and engages the market by collaborating and co-innovating with customers and downstream users in existing and new niche markets to creatively solve problems. Management believes that this innovation-driven growth model will result in consistent financial results by leveraging the Company's proven technology capabilities to improve product mix, increasing emphasis on specialty businesses, and sustaining and expanding leadership in attractive niche markets. A consistent increase in earnings is expected to result from both organic growth initiatives and strategic inorganic initiatives.

Management is pursuing specific opportunities to leverage Eastman's innovation-driven growth model for continued near-term and long-term greater than end-market growth by both sustaining the Company's leadership in existing markets and expanding into new markets.

Central to Eastman's innovation-driven growth model is our dedication to enhance the quality of life in a material way with an ongoing commitment to our sustainability strategy to create more value than the resources used by innovating to deliver consumer choices that will sustain and protect our world. Management approaches sustainability as a source of competitive strength by focusing its innovation strategy on opportunities where disruptive macro trends align with the Company's differentiated technology platforms and applications development capabilities to develop innovative products, applications, and technologies that enable customers' development and sales of sustainable products. Eastman's sustainability-related growth initiatives include targeted products utilizing technology that enhance end-use product durability, material usage, recyclability, and health and safety impact characteristics to reduce unnecessary waste, pollution, and greenhouse gas emissions associated with climate change. These efforts include collaboration and communication with stakeholders, including policymakers and other interested parties, to include the concepts of molecular recycling and mass balance accounting (an accepted and certified protocol that documents and tracks recycled content through complex manufacturing systems). Eastman has committed to reduce greenhouse gas emissions by one-third by 2030 in order to achieve carbon neutrality by 2050, and to innovate to provide products that enable energy savings and greenhouse gas emissions reductions to customers and end-users.

The Company's products and operations are managed and reported in four operating segments: Additives & Functional Products ("AFP"), Advanced Materials ("AM"), Chemical Intermediates ("CI"), and Fibers. This organizational structure is based on the management of the strategies, operating models, and sales channels that the various businesses employ and supports the Company's continued transformation towards a global specialty materials company.

ADDITIVES & FUNCTIONAL PRODUCTS SEGMENT

In the AFP segment, the Company manufactures materials for products in the transportation, consumables, building and construction, animal nutrition, crop protection, energy, personal and home care, and other markets. Key technology platforms in this segment are cellulose esters, polyester polymers, insoluble sulfur, hydrocarbon resins, alkylamine derivatives, and propylene derivatives.

The AFP segment's sales growth is typically above annual industrial production growth due to innovation and enhanced commercial execution with sales to a robust set of end-markets. The segment is focused on producing high-value additives that provide critical functionality but which comprise a small percentage of total customer product cost. The segment principally competes on the differentiated performance characteristics of its products and through leveraging its strong customer base and long-standing customer relationships to promote substantial recurring business and product development. A critical element of the AFP segment's success is its close formulation collaboration with customers through advantaged application development capability.

ADVANCED MATERIALS SEGMENT

In the AM segment, the Company produces and markets polymers, films, and plastics with differentiated performance properties for value-added end-uses in transportation, consumables, building and construction, durable goods, and health and wellness markets. Key technology platforms for this segment include cellulose esters, copolyesters, and polyvinyl butyral ("PVB") and polyester films.

Eastman's technical, application development, and market development capabilities enable the AM segment to modify its polymers, films, and plastics to control and customize their final properties for development of new applications with enhanced functionality. For example, Tritan™ copolyesters are a leading solution for food contact applications due to their performance and processing attributes and BPA free properties. The Saflex™ Q Series product line is a leading acoustic solution for architectural and automotive applications. The Company also maintains a leading solar control technology position in the window films market through the use of high performance sputter coatings which enhance solar heat rejection while maintaining superior optical properties. The segment principally competes on differentiated technology and application development capabilities. Management believes the AM segment's competitive advantages also include long-term customer relationships, vertical integration and scale in manufacturing, and leading market positions.

CHEMICAL INTERMEDIATES SEGMENT

Eastman leverages large scale and vertical integration from the cellulose and acetyl, olefins, and alkylamines streams to support the Company's specialty operating segments with advantaged cost positions. The CI segment sells excess intermediates beyond the Company's internal specialty needs into markets such as industrial chemicals and processing, building and construction, health and wellness, and agrochemicals. Key technology platforms include acetyls, oxos, plasticizers, polyesters, and alkylamines.

The CI segment product lines benefit from competitive cost positions primarily resulting from the use of and access to lower cost raw materials, and the Company's scale, technology, and operational excellence. Examples include coal used in the production of cellulose and acetyl stream product lines, feedstocks used in the production of olefin derivative product lines such as oxo alcohols and plasticizers, and ammonia and methanol used to manufacture methylamines. The CI segment also provides superior reliability to customers through its backward integration into readily available raw materials, such as propane, ethane, coal, and propylene. In addition to a competitive cost position, the plasticizers business expects to continue to benefit from the growth in relative use of non-phthalate rather than phthalate plasticizers in the United States, Canada, and Europe.

Several CI segment product lines are affected by cyclicality, most notably olefin and acetyl-based products. This cyclicality is caused by periods of supply and demand imbalance, when either incremental capacity additions are not offset by corresponding increases in demand, or when demand exceeds existing supply. While management continues to take steps to reduce the impact of the trough of these cycles, future results are expected to occasionally fluctuate due to both general economic conditions and industry supply and demand.

FIBERS SEGMENT

In the Fibers segment, Eastman manufactures and sells acetate tow and triacetin plasticizers for use in filtration media, primarily cigarette filters; natural (undyed), cellulosic fibers and yarn for use in apparel, home furnishings, and industrial fabrics; nonwovens for use in filtration and friction media, used primarily in transportation, industrial, and agricultural markets; and cellulose acetate flake and acetyl raw materials for other acetate fiber producers. Eastman is one of the world's two largest suppliers of acetate tow and has been a market leader in the manufacture and sale of acetate tow since it began production in the early 1950s. The Company is the world's largest producer of acetate yarn and has been in this business for over 85 years.

The 10 largest Fibers segment customers accounted for approximately 70 percent of the segment's 2020 sales revenue, and include multinational as well as regional cigarette producers, fabric manufacturers, and other acetate fiber producers.

The Company's long history and experience in fibers markets are reflected in the Fibers segment's operating expertise, both within the Company and in support of its customers' processes. The Fibers segment's knowledge of the industry and of customers' processes allows it to assist its customers in maximizing their processing efficiencies, promoting repeat sales, and developing mutually beneficial, long-term customer relationships.

The Company's fully integrated fibers manufacturing process employs unique technology that allows it to use a broad range of high-purity wood pulps for which the Company has dependable sources of supply.

Contributing to profitability in the Fibers segment is the limited number of competitors and significant barriers to entry. These barriers include, but are not limited to, high capital costs for integrated manufacturing facilities.

The Fibers segment's competitive strengths include a reputation for high-quality products, technical expertise, large scale vertically-integrated processes, reliability of supply, internally produced acetate flake supply for Fibers segment's products, a reputation for customer service excellence, and a customer base characterized by strategic long-term customer and end-user relationships. The Company continues to capitalize and build on these strengths to further improve the strategic position of its Fibers segment. In response to challenging acetate tow market conditions, including additional industry capacity and lower capacity utilization rates, the Company has taken actions in recent years expected to stabilize segment earnings, including the establishment of long-term acetate tow customer arrangements and agreements, development of innovative textile and nonwoven applications, and repurposing manufacturing capacity from acetate tow to new products.

SELECTED FINANCIAL DATA

Statements of Earnings Data	Year Ended December 31,				
(Dollars in millions, except per share amounts)	**2020**	**2019**	**2018**	**2017**	**2016**
Sales	$ 8,473	$ 9,273	$ 10,151	$ 9,549	$ 9,008
Earnings before interest and taxes	741	1,120	1,552	1,530	1,389
Net earnings	489	762	1,084	1,388	859
Less: Net earnings attributable to noncontrolling interest	11	3	4	4	5
Net earnings attributable to Eastman	$ 478	$ 759	$ 1,080	$ 1,384	$ 854
Basic earnings per share attributable to Eastman:	$ 3.53	$ 5.52	$ 7.65	$ 9.56	$ 5.80
Diluted earnings per share attributable to Eastman:	$ 3.50	$ 5.48	$ 7.56	$ 9.47	$ 5.75
Statements of Financial Position Data					
Current assets	$ 3,541	$ 3,321	$ 3,365	$ 3,143	$ 2,866
Net properties	5,549	5,571	5,600	5,607	5,276
Goodwill	4,465	4,431	4,467	4,527	4,461
Intangible assets, net of accumulated amortization	1,792	2,011	2,185	2,373	2,479
Total assets	16,083	16,008	15,995	15,999	15,457
Current liabilities	2,038	1,789	1,851	1,982	1,795
Long-term borrowings	5,269	5,611	5,925	6,147	6,311
Total liabilities	9,975	9,976	10,117	10,519	10,849
Total Eastman stockholders' equity	6,023	5,958	5,803	5,403	4,532
Dividends declared per share	2.67	2.52	2.30	2.09	1.89
Statements of Cash Flow Data					
Cash provided by operating activities	$ 1,455	$ 1,504	$ 1,543	$ 1,657	$ 1,385

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is based upon the consolidated financial statements of Eastman Chemical Company ("Eastman" or the "Company"), which have been prepared in accordance with accounting principles generally accepted ("GAAP") in the United States, and should be read in conjunction with the Company's consolidated financial statements and related notes included elsewhere in this Annual Report (this "Annual Report"). All references to earnings per share ("EPS") contained in this report are to diluted EPS unless otherwise noted. EBIT is the GAAP measure earnings before interest and taxes.

CRITICAL ACCOUNTING ESTIMATES

In preparing the consolidated financial statements in conformity with GAAP, management must make decisions which impact the reported amounts and the related disclosures. Such decisions include the selection of the appropriate accounting principles to be applied and assumptions on which to base estimates and judgments that affect the reported amounts of assets, liabilities, sales revenue and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, Eastman evaluates its estimates, including those related to impairment of long-lived assets, environmental costs, pension and other postretirement benefits, and income taxes. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. Management believes the critical accounting estimates described below are the most important to the fair presentation of the Company's financial condition and results. These estimates require management's most significant judgments in the preparation of the Company's consolidated financial statements.

Impairment of Long-Lived Assets

Definite-lived Assets

Properties and equipment and definite-lived intangible assets to be held and used by Eastman are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The review of properties and equipment and the review of definite-lived intangible assets is performed at the asset group level, which is the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If the carrying amount is not considered to be recoverable, an analysis of fair value is triggered. An impairment is recognized for the excess of the carrying amount of the asset over the fair value. The Company's assumptions to estimate cash flows in the evaluation of impairment related to long-lived assets are subject to change and impairments may be required in the future. If estimates of fair value less costs to sell are revised, the carrying amount of the related asset is adjusted, resulting in a charge to earnings.

Goodwill

Goodwill is an asset determined as the residual of the purchase price over the fair value of identified assets and liabilities acquired in a business combination. Eastman conducts testing of goodwill annually in the fourth quarter or more frequently when events and circumstances indicate an impairment may have occurred. The testing of goodwill is performed at the "reporting unit" level which the Company has determined to be its "components". Components are defined as an operating segment or one level below an operating segment, and in order to be a reporting unit, the component must 1) be a "business" as defined by applicable accounting standards (an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return in the form of dividends, lower costs, or other economic benefits directly to the investors or other owners, members, or participants); 2) have discrete financial information available; and 3) be reviewed regularly by Company operating segment management. The Company aggregates certain components into reporting units based on economic similarities.

A reporting unit's goodwill is considered to be impaired when the reporting unit's estimated fair value is less than its carrying value. The Company uses an income approach, including some unobservable inputs, and applies a discounted cash flow model in testing the carrying value of goodwill for each reporting unit. Key assumptions and estimates used in the Company's 2020 goodwill impairment testing included projections of revenues and EBIT determined using the Company's annual multi-year strategic plan, the estimated weighted average cost of capital ("WACC"), and a projected long-term growth rate. The Company believes these assumptions are consistent with those a hypothetical market participant would use given circumstances that were present at the time the estimates were made. However, actual results and amounts may be significantly different from the Company's estimates. In addition, the use of different estimates or assumptions could result in materially different estimated fair values of reporting units. The WACC is calculated incorporating weighted average returns on debt and equity from market participants. Therefore, changes in the market, which are beyond the control of the Company, may have an impact on future calculations of estimated fair value. For additional information, see Note 1, "Significant Accounting Policies", to the Company's consolidated financial statements in this Annual Report.

In second quarter 2020, the decrease in forecasted revenue and EBIT for the tire additives reporting unit (part of the Additives & Functional Products ("AFP") operating segment) reduced the fair value such that the estimated fair value approximated the carrying value. The decrease in forecasted revenue and EBIT for the tire additives reporting unit was primarily the result of weakened demand in transportation markets impacted by COVID-19 coronavirus global pandemic ("COVID-19") and increased competitive pricing pressure as a result of global capacity increases.

The Company had $4.5 billion of goodwill as of December 31, 2020. As a result of the goodwill impairment testing performed during fourth quarter 2020, fair values were determined to substantially exceed the carrying values for each reporting unit tested with the exception of the tire additives reporting unit (part of the Additives & Functional Products operating segment) whose fair value continues to approximate its carrying value. Two of the most critical assumptions used in the calculation of the fair value of the tire additives reporting unit are the projected long-term growth rate and the WACC. The Company performed a sensitivity analysis assuming a 25 basis point decrease in the projected long-term growth rate or a 25 basis point increase in the WACC, and both scenarios independently yielded approximately a $50 million decrease to the estimated fair value for the tire additives reporting unit. As of December 31, 2020, goodwill allocated to the tire additives reporting unit is $725 million. Additional declines in the market conditions or forecasted revenue and EBIT could result in an impairment of goodwill, especially for the tire additives reporting unit.

Indefinite-lived Intangible Assets

Indefinite-lived intangible assets, consisting primarily of various tradenames, are tested for potential impairment by comparing the estimated fair value to the carrying amount. The Company uses an income approach, specifically the relief from royalty method, to test indefinite-lived intangible assets. The estimated fair value of tradenames is determined based on projections of revenue and an assumed royalty rate savings, discounted by the calculated market participant WACC plus a risk premium. The Company had $374 million in indefinite-lived intangible assets at the time of the annual impairment test. There was no impairment of the Company's indefinite-lived intangible assets as a result of the tests performed during fourth quarter 2020.

Additional declines in the market conditions or forecasted revenue could result in additional impairment of indefinite-lived intangible assets. For additional information, see Note 1, "Significant Accounting Policies", Note 3, "Properties and Accumulated Depreciation", Note 4, "Goodwill and Other Intangible Assets", and Note 15, "Asset Impairments and Restructuring Charges, Net", to the Company's consolidated financial statements in this Annual Report.

The Company will continue to monitor both goodwill and indefinite-lived intangible assets for any indication of events which might require additional testing before the next annual impairment test and could result in material impairment charges.

Environmental Costs

Eastman recognizes environmental remediation costs when it is probable that the Company has incurred a liability at a contaminated site and the amount can be reasonably estimated. When a single amount cannot be reasonably estimated but the cost can be estimated within a range, the Company recognizes the minimum undiscounted amount. This undiscounted amount reflects liabilities expected to be paid within approximately 30 years and the Company's assumptions about remediation requirements at the contaminated site, the nature of the remedy, the outcome of discussions with regulatory agencies and other potentially responsible parties at multi-party sites, and the number and financial viability of other potentially responsible parties. Changes in the estimates on which the accruals are based, unanticipated government enforcement action, or changes in health, safety, environmental, and chemical control regulations and testing requirements could result in higher or lower costs. Estimated future environmental expenditures for undiscounted remediation costs ranged from the best estimate or minimum of $257 million to the maximum of $501 million and from the best estimate or minimum of $260 million to the maximum of $487 million at December 31, 2020 and December 31, 2019, respectively. The best estimate or minimum estimated future environmental expenditures are considered to be probable and reasonably estimable and include the amounts recognized at both December 31, 2020 and December 31, 2019.

For additional information, see Note 12, "Environmental Matters and Asset Retirement Obligations", to the Company's consolidated financial statements in this Annual Report.

Pension and Other Postretirement Benefits

Eastman maintains defined benefit pension and other postretirement benefit plans that provide eligible employees with retirement benefits. The estimated amounts of the costs and obligations related to these benefits primarily reflect the Company's assumptions related to discount rates and expected return on plan assets. For the Company's U.S. and non-U.S. defined benefit pension plans, the Company assumed weighted average discount rates of 2.48 percent and 1.08 percent, respectively, and weighted average expected returns on plan assets of 7.29 percent and 4.04 percent, respectively, at December 31, 2020. The Company assumed a weighted average discount rate of 2.38 percent for its other postretirement benefit plans at December 31, 2020. The estimated cost of providing plan benefits also depends on demographic assumptions including retirements, mortality, turnover, and plan participation.

The projected benefit obligation as of December 31, 2020 and 2021 expense are affected by year-end 2020 assumptions. The following table illustrates the sensitivity to changes in the Company's long-term assumptions in the assumed discount rate and expected return on plan assets for all pension and other postretirement benefit plans. The sensitivities below are specific to the time periods noted. They also may not be additive, so the impact of changing multiple factors simultaneously cannot be calculated by combining the individual sensitivities shown.

Change in Assumption	Impact on 2021 Pre-tax Benefits Expense (Excludes mark-to-market impact) for Pension Plans	Impact on December 31, 2020 Projected Benefit Obligation for Pension Plans		Impact on 2021 Pre-tax Benefits Expense (Excludes mark-to-market impact) for Other Postretirement Benefit Plans	Impact on December 31, 2020 Benefit Obligation for Other Postretirement Benefit Plans
		U.S.	Non-U.S.		
25 basis point decrease in discount rate	$-4 Million	$+51 Million	$+52 Million	$-1 Million	$+18 Million
25 basis point increase in discount rate	$+4 Million	$-48 Million	$-48 Million	$+1 Million	$-17 Million
25 basis point decrease in expected return on plan assets	$+7 Million	No Impact	No Impact	<+$0.5 Million	No Impact
25 basis point increase in expected return on plan assets	$-7 Million	No Impact	No Impact	<-$0.5 Million	No Impact

The assumed discount rate and expected return on plan assets used to calculate the Company's pension and other postretirement benefit obligations are established each December 31. The assumed discount rate is based upon a portfolio of high-grade corporate bonds, which are used to develop a yield curve. This yield curve is applied to the expected cash flows of the pension and other postretirement benefit obligations. Because future health care benefits under the U.S. benefit plan have been fixed at a certain contribution amount, changes in the health care cost trend assumptions do not have a material impact on results of operations. The expected return on plan assets is based upon prior performance and the long-term expected returns in the markets in which the plans invest their funds, primarily in U.S. and non-U.S. fixed income securities, U.S. and non-U.S. public equity securities, private equity, and real estate. Moreover, the expected return on plan assets is a long-term assumption and on average is expected to approximate the actual return on plan assets. Actual returns will be subject to year-to-year variances and could vary materially from assumptions.

The Company calculates service and interest cost components of net periodic benefit costs for its significant defined benefit pension and other postretirement benefit plans by applying the specific spot rates along the yield curve to the plans' projected cash flows. This cost approach does not affect the measurement of the total benefit obligation or the annual net periodic benefit cost or credit of the plans because the change in the service and interest costs will be offset in the mark-to-market ("MTM") actuarial gain or loss. The MTM gain or loss, as described in the next paragraph, is typically recognized in the fourth quarter of each year or in any other quarters in which an interim remeasurement is triggered.

The Company uses fair value accounting for plan assets. If actual experience differs from actuarial assumptions, primarily discount rates and long-term assumptions for asset returns which were used in determining the current year expense, the difference is recognized as part of the MTM net gain or loss in fourth quarter each year, and any other quarter in which an interim remeasurement is triggered. See the calculation of the MTM pension and other post-retirement benefits (gain) loss table below in "NON-GAAP FINANCIAL MEASURES - Non-GAAP Financial Measures - Non-Core and Unusual Items Excluded from Earnings".

While changes in obligations do not correspond directly to cash funding requirements, it is an indication of the amount the Company will be required to contribute to the plans in future years. The amount and timing of such cash contributions is dependent upon interest rates, actual returns on plan assets, retirements, attrition rates of employees, and other factors.

For further information regarding pension and other postretirement benefit obligations, see Note 10, "Retirement Plans", to the Company's consolidated financial statements in this Annual Report.

Income Taxes

Amounts of deferred tax assets and liabilities on Eastman's Consolidated Statements of Financial Position are based on temporary differences between the financial reporting and tax bases of assets and liabilities, applying enacted tax rates expected to be in effect for the year in which the differences are expected to reverse. The ability to realize deferred tax assets is evaluated through the forecasting of taxable income and domestic and foreign taxes, using historical and projected future operating results, the reversal of existing temporary differences, and the availability of tax planning opportunities. Valuation allowances are recognized to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. In the event that the actual outcome of future tax consequences differs from management estimates and assumptions, the resulting change to the provision for income taxes could have a material impact on the consolidated results of operations and statements of financial position. As of December 31, 2020 and 2019, valuation allowances of $393 million and $453 million, respectively, have been provided against the deferred tax assets.

The calculation of income tax liabilities involves uncertainties in the application of complex tax laws and regulations, which are subject to legal interpretation and management judgment. Eastman's income tax returns are regularly examined by federal, state and foreign tax authorities, and those audits may result in proposed adjustments which could result in additional income tax liabilities and income tax expense. Income tax expense could be materially impacted to the extent the Company prevails in a tax position or when the statute of limitations expires for a tax position for which a liability for unrecognized tax benefits or valuation allowances have been established, or to the extent payments are required in excess of the established liability for unrecognized tax benefits.

For further information, see Note 7, "Income Taxes", to the Company's consolidated financial statements in this Annual Report.

NON-GAAP FINANCIAL MEASURES

Non-GAAP financial measures, and the accompanying reconciliations of the non-GAAP financial measures to the most comparable GAAP measures, are presented below in this section and in "Overview", "Results of Operations", "Summary by Operating Segment", "Liquidity and Other Financial Information - Cash Flows", and "Outlook" in this MD&A.

Management discloses non-GAAP financial measures, and the related reconciliations to the most comparable GAAP financial measures, because it believes investors use these metrics in evaluating longer term period-over-period performance, and to allow investors to better understand and evaluate the information used by management to assess the Company's and its operating segments' performances, make resource allocation decisions, and evaluate organizational and individual performances in determining certain performance-based compensation. Non-GAAP financial measures do not have definitions under GAAP, and may be defined differently by, and not be comparable to, similarly titled measures used by other companies. As a result, management cautions investors not to place undue reliance on any non-GAAP financial measure, but to consider such measures alongside the most directly comparable GAAP financial measure.

Company Use of Non-GAAP Financial Measures

Non-Core Items and any Unusual or Non-Recurring Items Excluded from Non-GAAP Earnings

In addition to evaluating Eastman's financial condition, results of operations, liquidity, and cash flows as reported in accordance with GAAP, management also evaluates Company and operating segment performance, and makes resource allocation and performance evaluation decisions, excluding the effect of transactions, costs, and losses or gains that do not directly result from Eastman's normal, or "core", business and operations, or are otherwise of an unusual or non-recurring nature.

- Non-core transactions, costs, and losses or gains relate to, among other things, cost reductions, growth and profitability improvement initiatives, and other events outside of core business operations, and have included asset impairments and restructuring charges and gains, costs of and related to acquisitions, gains and losses from and costs related to dispositions, closure, or shutdowns of businesses or assets, financing transaction costs, and MTM losses or gains for pension and other postretirement benefit plans.

- In 2018 the Company recognized unusual income from insurance in excess of costs for, and in 2017 recognized unusual net costs of, the disruption, repairs, and reconstruction of the Kingsport site's coal gasification operations area resulting from the previously reported October 4, 2017 explosion (the "coal gasification incident"). Management considered the coal gasification incident unusual because of the Company's operational and safety history and the magnitude of the unplanned disruption.

- In 2018 the Company recognized unusual costs and in both 2019 and 2018 unusual net decreases to earnings from adjustments of the net tax benefit recognized in fourth quarter 2017, resulting from tax law changes, primarily the 2017 Tax Cuts and Jobs Act (the "Tax Reform Act"), and related outside-U.S. entity reorganizations as part of the transition to an international treasury services center. Management considered these actions and associated costs and income unusual because of the infrequent nature of such changes in tax law and resulting actions and the significant impacts on earnings.

Because non-core, unusual, or non-recurring transactions, costs, and losses or gains may materially affect the Company's, or any particular operating segment's, financial condition or results in a specific period in which they are recognized, management believes it is appropriate to evaluate the financial measures prepared and calculated in accordance with both GAAP and the related non-GAAP financial measures excluding the effect on the Company's results of these non-core, unusual, or non-recurring items. In addition to using such measures to evaluate results in a specific period, management evaluates such non-GAAP measures, and believes that investors may also evaluate such measures, because such measures may provide more complete and consistent comparisons of the Company's, and its segments', operational performance on a period-over-period historical basis and, as a result, provide a better indication of expected future trends.

Adjusted Tax Rate and Provision for Income Taxes

In interim periods, Eastman discloses non-GAAP earnings with an adjusted effective tax rate and a resulting adjusted provision for income taxes using the Company's forecasted tax rate for the full year as of the end of the interim period. The adjusted effective tax rate and resulting adjusted provision for income taxes are equal to the Company's projected full year effective tax rate and provision for income taxes on earnings excluding non-core, unusual, or non-recurring items for completed periods. The adjusted effective tax rate and resulting adjusted provision for income taxes may fluctuate during the year for changes in events and circumstances that change the Company's forecasted annual effective tax rate and resulting provision for income taxes excluding non-core, unusual, or non-recurring items. Management discloses this adjusted effective tax rate, and the related reconciliation to the GAAP effective tax rate, to provide investors more complete and consistent comparisons of the Company's operational performance on a period-over-period interim basis and on the same basis as management evaluates quarterly financial results to provide a better indication of expected full year results.

Non-GAAP Cash Flow Measure

Eastman regularly evaluates and discloses to investors and securities analysts an alternative non-GAAP measure of "free cash flow", which management defines as net cash provided by or used in operating activities less the amount of net capital expenditures (typically the GAAP measure additions to properties and equipment, and in 2018 net of proceeds from property insurance). Such net capital expenditures are generally funded from available cash and, as such, management believes they should be considered in determining free cash flow. Management believes this is an appropriate metric to assess the Company's ability to fund priorities for uses of available cash. The priorities for cash after funding operations include payment of quarterly dividends, repayment of debt, funding targeted growth opportunities, and repurchasing shares. Management believes this metric is useful to investors and securities analysts to provide them with information similar to that used by management in evaluating financial performance and potential future cash available for various initiatives and assessing organizational performance in determining certain performance-based compensation and because management believes investors and securities analysts often use a similar measure of free cash flow to compare the results, and value, of comparable companies. In addition, Eastman may disclose to investors and securities analysts an alternative non-GAAP measure of "free cash flow yield", which management defines as annual free cash flow divided by the Company's market capitalization, and "free cash flow conversion", which management defines as annual free cash flow divided by adjusted net income. Management believes these metrics are useful to investors and securities analysts in comparing cash flow generation with that of peer and other companies.

Non-GAAP Debt Measure

Eastman from time to time evaluates and discloses to investors and securities and credit analysts the non-GAAP debt measure "net debt", which management defines as total borrowings less cash and cash equivalents. Management believes this metric is useful to investors and securities and credit analysts to provide them with information similar to that used by management in evaluating the Company's overall financial position, liquidity, and leverage and because management believes investors, securities analysts, credit analysts and rating agencies, and lenders often use a similar measure to assess and compare companies' relative financial position and liquidity.

Non-GAAP Measures in this Annual Report

The following non-core items are excluded by management in its evaluation of certain earnings results in this Annual Report:

- MTM pension and other postretirement benefit plans gains and losses resulting from the changes in discount rates and other actuarial assumptions and the difference between actual and expected returns on plan assets during the period;
- Asset impairments and restructuring charges, including severance costs and site closure or shutdown charges, net, of which asset impairments are non-cash transactions impacting profitability;
- Accelerated depreciation resulting from the closure of a manufacturing facility as part of ongoing site optimization, and
- Early debt extinguishment costs resulting from repayment of borrowings.

The following unusual items are excluded by management in its evaluation of certain earnings results in this Annual Report:

- Costs of, and income from insurance for, the coal gasification incident;
- Costs of currency transaction and professional fees resulting from fourth quarter 2017 tax law changes and related outside-U.S. entity reorganizations; and
- Estimated net tax benefit recognized in fourth quarter 2017 resulting from tax law changes, primarily the Tax Reform Act, and tax impact of related outside-U.S. entity reorganizations and related subsequent adjustments recognized in 2018 and 2019.

As described above, the alternative non-GAAP measures of cash flow, "free cash flow", and of debt, "net debt", are also presented in this Annual Report.

Non-GAAP Financial Measures - Non-Core and Unusual Items Excluded from Earnings

(Dollars in millions)	2020	2019	2018
Non-core items impacting EBIT:			
Mark-to-market pension and other postretirement benefits loss, net	$ 240	$ 143	$ 99
Asset impairments and restructuring charges, net	227	126	45
Accelerated depreciation	8	—	—
Unusual items impacting EBIT:			
Net coal gasification incident insurance	—	—	(83)
Costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	20
Total non-core and unusual items impacting EBIT	475	269	81
Non-core item impacting earnings before income taxes:			
Early debt extinguishment and other related costs	1	—	7
Total non-core item impacting earnings before income taxes	1	—	7
Less: Items impacting provision for income taxes:			
Tax effect for non-core and unusual items	115	47	16
Estimated net tax (expense) benefit from tax law changes and tax loss from outside-U.S. entity reorganizations	—	(7)	(20)
Total items impacting provision for income taxes	115	40	(4)
Total items impacting net earnings attributable to Eastman	$ 361	$ 229	$ 92

Below is the calculation of the "Other components of post-employment (benefit) cost, net" that are not included in the above non-core item "mark-to-market pension and other postretirement benefits loss, net" and that are included in the non-GAAP results.

(Dollars in millions)	2020	2019	2018
Other components of post-employment (benefit) cost, net	$ 119	$ 60	$ (21)
Service cost	42	41	49
Net periodic benefit (credit) cost	161	101	28
Less: Mark-to-market pension and other postretirement benefits loss, net	240	143	99
Components of post-employment (benefit) cost, net included in non-GAAP earnings measures	$ (79)	$ (42)	$ (71)

Below is the calculation of the MTM pension and other post-retirement benefits (gain) loss disclosed above.

(Dollars in millions)	2020		2019		2018	
Actual return and percentage of return on assets	$ 260	9 %	$ 406	15 %	$ (82)	(3)%
Less: expected return on assets	174	6 %	165	6 %	189	7 %
Mark-to-market (loss) gain on assets	86		241		(271)	
Actuarial (loss) gain [(1)]	(326)		(384)		172	
Total mark-to-market (loss) gain	$ (240)		$ (143)		$ (99)	
Global weighted-average assumed discount rate for year ended December 31:	2.07 %		2.80 %		3.82 %	

(1) Actuarial (loss) gain resulted primarily from the change in discount rates from the prior year and changes in other actuarial assumptions.

For more detail about MTM pension and other postretirement benefit plans net gains and losses, including actual and expected return on plan assets and the components of the net gain or loss, see "Critical Accounting Estimates - Pension and Other Postretirement Benefits" above, and Note 10, "Retirement Plans", "Summary of Changes - Actuarial (gain) loss, Actual return on plan assets, and Reserve for third party contributions", and "Summary of Benefit Costs and Other Amounts Recognized in Other Comprehensive Income - Mark-to-market pension and other postretirement benefits (gain) loss, net" to the Company's consolidated financial statements in this Annual Report.

This MD&A includes the effect of the foregoing on the following GAAP financial measures:

- Gross profit,
- Selling, general and administrative ("SG&A") expenses,
- Other components of post-employment (benefit) cost, net,
- Other (income) charges, net,
- EBIT,
- Provision for income taxes,
- Net earnings attributable to Eastman,
- Diluted EPS, and
- Net cash provided by operating activities.

Other Non-GAAP Financial Measures

Alternative Non-GAAP Cash Flow Measure

In addition to the non-GAAP measures presented in this Annual Report and other periodic reports, management occasionally has evaluated and disclosed to investors and securities analysts the non-GAAP measure cash provided by or used in operating activities excluding certain non-core, unusual, or non-recurring sources or uses of cash or including cash from or used by activities that are managed as part of core business operations ("adjusted cash provided by or used in operating activities") when analyzing, among other things, business performance, liquidity and financial position, and performance-based compensation. Management has used this non-GAAP measure in conjunction with the GAAP measure cash provided by or used in operating activities because it believes it is an appropriate metric to evaluate the cash flows from Eastman's core operations that are available for organic and inorganic growth initiatives and because it allows for a more consistent period-over-period presentation of such amounts. In its evaluation, management generally excludes the impact of certain non-core activities and decisions of management that it considers not core, ongoing components of operations and the decisions to undertake or not to undertake such activities may be made irrespective of the cash generated from operations, and generally includes cash from or used in activities that are managed as operating activities and in business operating decisions. Management has disclosed this non-GAAP measure and the related reconciliation to investors and securities analysts to allow them to better understand and evaluate the information used by management in its decision-making processes and because management believes investors and securities analysts use similar measures to assess Company performance, liquidity, and financial position over multiple periods and to compare these with other companies.

Alternative Non-GAAP Earnings Measures

From time to time, Eastman may also disclose to investors and securities analysts the non-GAAP earnings measures "EBIT Margin", "Adjusted EBITDA", "EBITDA Margin", "Return on Invested Capital" (or "ROIC"), and "Adjusted ROIC". Management defines EBIT Margin as the GAAP measure EBIT adjusted to exclude the same non-core, unusual, or non-recurring items as are excluded from the Company's other non-GAAP earnings measures for the same periods divided by the GAAP measure sales revenue in the Company's Consolidated Statement of Earnings, Comprehensive Income and Retained Earnings for the same period. Adjusted EBITDA is EBITDA (net earnings before interest, taxes, depreciation and amortization) adjusted to exclude the same non-core, unusual, or non-recurring items as are excluded from the Company's other non-GAAP earnings measures for the same periods. EBITDA Margin is Adjusted EBITDA divided by the GAAP measure sales revenue in the Company's Consolidated Statement of Earnings, Comprehensive Income and Retained Earnings for the same periods. Management defines ROIC as net earnings plus interest expense after tax divided by average total borrowings plus average stockholders' equity for the periods presented, each derived from the GAAP measures in the Company's financial statements for the periods presented. Adjusted ROIC is ROIC adjusted to exclude from net earnings the same non-core, unusual, or non-recurring items as are excluded from the Company's other non-GAAP earnings measures for the same periods. Management believes that EBIT Margin, Adjusted EBITDA, EBITDA Margin, and ROIC are useful as supplemental measures in evaluating the performance of and returns from Eastman's operating businesses, and from time to time uses such measures in internal performance calculations. Further, management understands that investors and securities analysts often use similar measures of EBIT Margin, Adjusted EBITDA, EBITDA Margin, ROIC, and Adjusted ROIC to compare the results, returns, and value of the Company with those of peer and other companies.

OVERVIEW

Eastman's products and operations are managed and reported in four operating segments: Additives & Functional Products ("AFP"), Advanced Materials ("AM"), Chemical Intermediates ("CI"), and Fibers. Eastman uses an innovation-driven growth model which consists of leveraging world class scalable technology platforms, delivering differentiated application development capabilities, and relentlessly engaging the market. The Company's world class technology platforms form the foundation of sustainable growth by differentiated products through significant scale advantages in research and development ("R&D") and advantaged global market access. Differentiated application development converts market complexity into opportunities for growth and accelerates innovation by enabling a deeper understanding of the value of Eastman's products and how they perform within customers' and end-user products. Key areas of application development include thermoplastic conversion, functional films, coatings formulations, rubber additive formulations, adhesives formulations, nonwovens and textiles, animal nutrition, and molecular recycling technologies. The Company engages the market by working directly with customers and downstream users, targeting attractive niche markets, and leveraging disruptive macro trends. Management believes that these elements of the Company's innovation-driven growth model, combined with disciplined portfolio management and balanced capital deployment, will result in consistent, sustainable earnings growth and strong cash flow.

The Company generated sales revenue of $8.5 billion and $9.3 billion for 2020 and 2019, respectively. EBIT was $741 million and $1.1 billion in 2020 and 2019, respectively. Excluding the non-core and unusual items referenced in "Non-GAAP Financial Measures", adjusted EBIT was $1.2 billion and $1.4 billion in 2020 and 2019, respectively. Sales revenue decreased primarily due to lower sales volume and lower selling prices. Sales volume decreased for products serving end-markets negatively impacted by COVID-19, including transportation, building and construction, consumer durables, and textiles end-markets. Lower selling prices were primarily due to lower raw material prices. Adjusted EBIT decreased due to reduced capacity utilization, lower sales volume, and less favorable product mix, partially offset by the impact of cost reduction actions.

Discussion of sales revenue and EBIT changes is presented in "Results of Operations" and "Summary by Operating Segment" in this MD&A.

Net earnings and EPS and adjusted net earnings and EPS were as follows:

	2020		2019	
(Dollars in millions, except diluted EPS)	$	EPS	$	EPS
Net earnings attributable to Eastman	$ 478	$ 3.50	$ 759	$ 5.48
Total non-core and unusual items, net of tax	361	2.65	229	1.65
Net earnings attributable to Eastman excluding non-core and unusual items	$ 839	$ 6.15	$ 988	$ 7.13

The Company generated $1.5 billion of cash from operating activities in both 2020 and 2019. Free cash flow was $1.1 billion in both 2020 and 2019.

COVID-19 Coronavirus Pandemic Response and Impact

Following the outbreak of COVID-19 in early 2020, in March 2020 the U.S. Centers for Disease Control issued guidelines to mitigate the spread and health consequences of COVID-19. The Company implemented changes to its operations and business practices to follow the guidelines and minimize physical interaction, including using technology to allow employees to work from home when possible and altering production procedures and schedules.

In response to the uncertainties of the impact of COVID-19 (including on overall business and market conditions; Eastman manufacturing sites and distribution, sales, and service facilities closure or reduced availability; and Eastman products market demand weakness and supply chain disruption), management's focus shifted to cash flow, liquidity, and cost management.

As previously reported, as a precautionary measure due to increased financial market volatility resulting from COVID-19, Eastman took certain liquidity actions, including borrowing $400 million under the revolving credit agreement (the "Credit Facility") in first quarter 2020 and $250 million under a new 364-Day Term Loan Credit Agreement (the "Term Loan") in second quarter 2020. Borrowings under the Credit Facility were repaid in second quarter 2020 and borrowings under the Term Loan were repaid in third quarter 2020. The Company reduced net debt by $656 million excluding the impact of foreign currency exchange rates in 2020, and its cash balance as of December 31, 2020 was $564 million. See "Liquidity and Other Financial Information" for additional information.

In 2020, capacity utilization was substantially lower due to lower sales volume and the Company's focus on maximizing cash generation by reducing inventories, reducing EBIT approximately $200 million. Cost reduction actions in response to COVID-19, some of which are expected to be structural, included reduced discretionary spending, deferred asset maintenance turnarounds, and adjusted operations to ensure the health and safety of employees and contractors, totaling approximately $150 million in 2020, with approximately 60 percent in "Cost of sales" and approximately 40 percent in "Selling, general and administrative expenses" and "Research and development expenses" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings. See "Results of Operations" and "Summary by Operating Segment" in this MD&A for additional information.

RESULTS OF OPERATIONS

Eastman's results of operations as presented in the Company's consolidated financial statements in this Annual Report are summarized and analyzed below.

Sales

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Sales	$ 8,473	$ 9,273	(9)%	$ 9,273	$ 10,151	(9)%
Volume / product mix effect			(5)%			(4)%
Price effect			(4)%			(4)%
Exchange rate effect			— %			(1)%

2020 Compared to 2019

Sales revenue decreased as a result of decreases in all operating segments. Further discussion by operating segments is presented in "Summary of Operating Segment" in this MD&A.

2019 Compared to 2018

Sales revenue decreased as a result of decreases in all operating segments. Further discussion by operating segments is presented in "Summary of Operating Segment" in this MD&A.

Gross Profit

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Gross profit	$ 1,975	$ 2,234	(12)%	$ 2,234	$ 2,479	(10)%
Net coal gasification incident insurance	—	—		—	(18)	
Accelerated depreciation	8	—		—	—	
Gross profit excluding non-core and unusual items	$ 1,983	$ 2,234	(11)%	$ 2,234	$ 2,461	(9)%

2020 Compared to 2019

Gross profit included accelerated depreciation resulting from the closure of an advanced interlayers manufacturing facility in North America in the AM segment as part of ongoing site optimization actions. Excluding this non-core item, gross profit decreased as a result of decreases in all operating segments. Further discussion of sales revenue and EBIT changes is presented in "Summary by Operating Segment" in this MD&A.

2019 Compared to 2018

Gross profit included coal gasification incident insurance in excess of costs in 2018. Excluding this unusual item, gross profit decreased due to lower sales volume and an unfavorable shift in foreign currency exchange rates across all operating segments. Further discussion by operating segment is presented in "Summary by Operating Segment" in this MD&A.

Selling, General and Administrative Expenses

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Selling, general and administrative expenses	$ 654	$ 691	(5)%	$ 691	$ 721	(4)%
Costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—		—	(7)	
Selling, general and administrative expenses excluding unusual item	$ 654	$ 691	(5)%	$ 691	$ 714	(3)%

2020 Compared to 2019

SG&A expenses decreased primarily due to cost reduction actions.

2019 Compared to 2018

SG&A expenses in 2018 included $7 million of costs of professional fees resulting from fourth quarter 2017 tax law changes and related outside-U.S. entity reorganizations as part of the transition to an international treasury services center. Excluding this item, SG&A expenses decreased primarily due to lower variable compensation costs resulting from Company performance and cost management actions.

Research and Development Expenses

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Research and development expenses	$ 226	$ 234	(3)%	$ 234	$ 235	— %

2020 Compared to 2019

R&D expenses decreased primarily due to cost reduction actions including an increased focus on project prioritization.

2019 Compared to 2018

R&D expenses were relatively unchanged.

Asset Impairments and Restructuring Charges, Net

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Fixed Asset Impairments			
CI & AFP - Singapore (1)	$ —	$ 27	$ —
Site optimizations			
AFP - Tire additives (2)	5	—	—
AM - Performance films (3)	5	—	—
AFP - Animal nutrition (4)	3	—	—
Discontinuation of growth initiatives (5)	8	—	—
	21	27	—
Intangible Asset Impairments			
AFP - Tradenames (6)	123	—	—
AFP - Customer relationships (7)	2	—	—
AFP - Goodwill (8)	—	45	38
AM - Customer relationships (7)	—	—	1
	125	45	39
Severance Charges			
Business improvement and cost reduction actions (9)	47	45	6
CI & AFP - Singapore (1)	6	—	—
Site optimizations			
AM - Advanced interlayers (10)	5	—	—
AFP - Tire additives (2)	3	—	—
AM - Performance films (3)	3	—	—
AFP - Animal nutrition (4)	1	—	—
	65	45	6
Other Restructuring Costs			
Cost reduction initiatives (9)	14	5	—
Discontinuation of growth initiatives contract termination fees (5)	4	—	—
AFP - Animal nutrition (4)	(2)	—	—
AFP - Discontinued capital project (11)	—	4	—
	16	9	—
Total	$ 227	$ 126	$ 45

(1) Asset impairment charges of $22 million and $5 million in the CI segment and the AFP segment, respectively, and severance charges of $5 million and $1 million in the CI segment and the AFP segment, respectively, resulting from the previously disclosed plan to discontinue production of certain products at the Singapore manufacturing site. Total asset impairments and restructuring charges for this action are expected to be up to $50 million continuing through 2021.

(2) Fixed asset impairments and severance in the AFP segment from the closure of a tire additives manufacturing facility in Asia Pacific as part of ongoing site optimization.

(3) Fixed asset impairments and severance in the AM segment from the closure of a performance films manufacturing facility in North America as part of ongoing site optimization.

(4) Fixed asset impairments, severance, and other restructuring gains in the AFP segment from the closure of an animal nutrition manufacturing facility in Asia Pacific as part of ongoing site optimization.

(5) Fixed asset impairments and contract termination fees resulting from management's decision to discontinue growth initiatives for polyester based microfibers, including Avra™ performance fibers, the financial results of which were not allocated to an operating segment and reported in "Other".

(6) Intangible asset impairment charges in the AFP segment tire additives business to reduce the carrying values of the Crystex™ and Santoflex™ tradenames to the estimated fair values. The estimated fair values were determined using an income approach, specifically, the relief from royalty method, including some unobservable inputs. The impairments are primarily the result of weakened demand in transportation markets impacted by COVID-19 and increased competitive pricing pressure as a result of global capacity increases.

(7) Intangible asset impairment charge for customer relationships.

(8) Goodwill impairment charge in the crop protection reporting unit resulting from the annual impairment test. In first quarter 2020, the crop protection reporting unit combined with the care chemicals reporting unit as a result of business management realignment.

(9) Severance and related costs as part of business improvement and cost reduction initiatives which were reported in "Other".

(10) Severance in the AM segment due to the closure of an advanced interlayers manufacturing facility in North America as part of ongoing site optimization. In addition, accelerated depreciation of $8 million was recognized in "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings in 2020 related to the closure of this facility. Management expects total charges of up to $30 million, mostly in "Cost of sales" and in "Asset impairments and restructuring charges, net" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings, continuing through 2021 for the closure of this facility.

(11) Additional restructuring charge related to a capital project in the AFP segment that was discontinued in 2016.

Other Components of Post-employment (Benefit) Cost, Net

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Other components of post-employment (benefit) cost, net	$ 119	$ 60	98 %	$ 60	$ (21)	>(100%)
Mark-to-market pension and other postretirement benefit loss, net	(240)	(143)		(143)	(99)	
Other components of post-employment (benefit) cost, net excluding non-core item	$ (121)	$ (83)	46 %	$ (83)	$ (120)	(31)%

For more information regarding "Other components of post-employment (benefit) cost, net" see Note 1, "Significant Accounting Policies", and Note 10, "Retirement Plans", to the Company's consolidated financial statements in this Annual Report.

Other (Income) Charges, Net

(Dollars in millions)	2020	2019	2018
Foreign exchange transaction losses (gains), net	$ 16	$ 9	$ 12
Currency transaction costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	13
(Income) loss from equity investments and other investment (gains) losses, net	(15)	(10)	(17)
Coal gasification incident property insurance	—	—	(65)
Other, net	7	4	4
Other (income) charges, net	$ 8	$ 3	$ (53)
Currency transaction costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	(13)
Coal gasification incident property insurance	—	—	65
Other (income) charges, net excluding non-core and unusual items	$ 8	$ 3	$ (1)

For more information regarding components of foreign exchange transaction losses, see Note 9, "Derivative and Non-Derivative Financial Instruments", to the Company's consolidated financial statements in this Annual Report.

Earnings Before Interest and Taxes

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
EBIT	$ 741	$ 1,120	(34)%	$ 1,120	$ 1,552	(28)%
Mark-to-market pension and other postretirement benefit loss, net	240	143		143	99	
Net coal gasification incident insurance	—	—		—	(83)	
Asset impairments and restructuring charges, net	227	126		126	45	
Accelerated depreciation	8	—		—	—	
Costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—		—	20	
EBIT excluding non-core and unusual items	$ 1,216	$ 1,389	(12)%	$ 1,389	$ 1,633	(15)%

Net Interest Expense

	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions)	2020	2019	Change	2019	2018	Change
Gross interest expense	$ 218	$ 225		$ 225	$ 242	
Less: Capitalized interest	4	4		4	4	
Interest Expense	214	221		221	238	
Less: Interest income	4	3		3	3	
Net interest expense	$ 210	$ 218	(4)%	$ 218	$ 235	(7)%

2020 Compared to 2019

Net interest expense decreased primarily as a result of prior year repayment of public debt and lower interest rates.

2019 Compared to 2018

Net interest expense decreased $17 million primarily as a result of U.S. dollar to euro cross-currency swaps, reduced debt balances, and lower interest rates.

Early Debt Extinguishment and Other Related Costs

In third quarter 2020, the Company repaid the Term Loan using available cash. The early repayment resulted in a charge of $1 million for early debt extinguishment costs for unamortized issuance costs.

In fourth quarter 2018, the Company sold 3.5% notes due December 2021 in the principal amount of $300 million and 4.5% notes due December 2028 in the principal amount of $500 million. Net proceeds from the notes were $789 million and were used, together with available cash, for the early and full repayment of the 5.5% notes due November 2019 ($250 million principal) and the partial redemption of the 2.7% notes due January 2020 ($550 million principal). Total consideration for these prepayments were $806 million ($800 million total principal and $6 million for the early redemption premiums) and are reported as financing activities on the Consolidated Statements of Cash Flows. The early repayment resulted in a charge of $7 million for early debt extinguishment costs which was primarily attributable to the early redemption premiums and related unamortized costs. The book value of the redeemed debt was $799 million.

For additional information regarding the early debt extinguishment costs, see Note 8, "Borrowings", to the Company's consolidated financial statements in this Annual Report.

Provision for Income Taxes

(Dollars in millions)	2020		2019		2018	
	$	%	$	%	$	%
Provision for income taxes and effective tax rate	$ 41	8 %	$ 140	16 %	$ 226	17 %
Tax provision for non-core and unusual items[1]	115		47		16	
Estimated net tax (expense) benefit from tax law changes and tax loss from outside-U.S. entity reorganizations	—		(7)		(20)	
Adjusted provision for income taxes and effective tax rate	$ 156	15.6 %	$ 180	15.4 %	$ 222	16.0 %

(1) Provision for income taxes for non-core and unusual items is calculated using the tax rate for the jurisdiction where the gains are taxable and the expenses are deductible.

The 2020 effective tax rate includes a $27 million decrease to the provision for income taxes as a result of a decrease in unrecognized tax positions and a $7 million decrease to the provision for income taxes related to adjustments to certain prior year tax returns.

The 2019 effective tax rate includes a $7 million increase to the provision for income taxes resulting from adjustments to the net tax benefit recognized in fourth quarter 2017 resulting from tax law changes, primarily the Tax Reform Act and from outside-U.S. entity reorganizations. The 2019 effective tax rate also includes adjustments to the tax provision to reflect finalization of prior year's income tax returns and an increase to state income taxes related to additional valuation allowance provided against state income tax credits.

The 2018 effective tax rate included a $20 million increase to the provision for income taxes resulting from adjustments to the net tax benefit recognized in fourth quarter 2017 resulting from tax law changes, primarily the Tax Reform Act, and from outside-U.S. entity reorganizations. These adjustments related to the one-time transition tax on deferred foreign income and changes in valuation of deferred tax assets associated with tax law changes and outside-U.S. entity reorganizations as part of the formation of an international treasury services center.

For more information, see Note 7, "Income Taxes", to the Company's consolidated financial statements in this Annual Report.

Net Earnings Attributable to Eastman and Diluted Earnings per Share

	2020		2019		2018	
(Dollars in millions, except per share amounts)	$	EPS	$	EPS	$	EPS
Net earnings and diluted earnings per share attributable to Eastman	$ 478	$ 3.50	$ 759	$ 5.48	$ 1,080	$ 7.56
Non-core items, net of tax: [1]						
Mark-to-market pension and other postretirement benefit loss, net	180	1.32	109	0.79	75	0.52
Accelerated depreciation	6	0.05	—	—	—	—
Asset impairments and restructuring charges, net	174	1.28	113	0.81	43	0.30
Early debt extinguishment and other related costs	1	—	—	—	6	0.04
Unusual items, net of tax: [1]						
Net coal gasification incident insurance	—	—	—	—	(67)	(0.47)
Estimated net tax expense from tax law changes and tax loss from outside-U.S. entity reorganizations	—	—	7	0.05	20	0.14
Costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	—	—	15	0.11
Adjusted net earnings and diluted earnings per share attributable to Eastman	$ 839	$ 6.15	$ 988	$ 7.13	$ 1,172	$ 8.20

(1) The provision for income taxes for non-core and unusual items is calculated using the tax rate for the jurisdiction where the gains are taxable and the expenses are deductible.

SUMMARY BY OPERATING SEGMENT

Eastman's products and operations are managed and reported in four operating segments: Additives & Functional Products ("AFP"), Advanced Materials ("AM"), Chemical Intermediates ("CI"), and Fibers. For additional financial and product information for each operating segment, see "About Our Business" section of this Annual Report and Note 19, "Segment and Regional Sales Information", to the Company's consolidated financial statements in this Annual Report.

Additives & Functional Products Segment

	2020 Compared to 2019				2019 Compared to 2018			
			Change				Change	
(Dollars in millions)	2020	2019	$	%	2019	2018	$	%
Sales	$ 3,022	$ 3,273	$ (251)	(8)%	$ 3,273	$ 3,647	$ (374)	(10)%
Volume / product mix effect			(116)	(4)%			(177)	(5)%
Price effect			(145)	(4)%			(133)	(3)%
Exchange rate effect			10	— %			(64)	(2)%
EBIT	$ 312	$ 496	$ (184)	(37)%	$ 496	$ 639	$ (143)	(22)%
Asset impairments and restructuring charges, net	136	54	82		54	38	16	
Net coal gasification incident insurance	—	—	—		—	(6)	6	
EBIT excluding non-core and unusual items	448	550	(102)	(19)%	550	671	(121)	(18)%

2020 Compared to 2019

Sales revenue decreased primarily due to lower selling prices and lower sales volume. Lower selling prices were due to lower raw material prices and competitive activity in animal nutrition, tire additives, and adhesive resins products. The negative impact of COVID-19 on demand resulted in lower sales volume of aviation fluids and coatings and inks additives sold into transportation end-markets resulting in less favorable product mix.

EBIT in 2020 included intangible asset impairment charges of $125 million for tradenames and customer relationships. The impairments were primarily the result of weakened demand in transportation markets impacted by COVID-19 and increased competitive pricing pressure as a result of global capacity increases. 2020 EBIT also included asset impairments and restructuring charges of $10 million for closure of manufacturing facilities in Asia Pacific as part of ongoing site optimization actions and $1 million related to the previously reported plan to discontinue production of certain products at the Singapore manufacturing facility. EBIT in 2019 included a $45 million goodwill impairment of the crop protection business, an asset impairment charge of $5 million resulting from management's approval of a plan to discontinue production of certain products at the Singapore manufacturing site, and a $4 million restructuring charge related to a capital project. Excluding these non-core and unusual items, EBIT decreased primarily due to $133 million of lower sales volume and higher manufacturing costs primarily due to lower capacity utilization and reduction of inventory. These higher costs were offset $41 million by cost reduction actions.

2019 Compared to 2018

Sales revenue decreased primarily due to lower sales volume, lower selling prices, and an unfavorable shift in foreign currency exchange rates. The lower sales volume was primarily attributed to weaker end-market demand resulting from global trade-related pressures, particularly in transportation markets and other consumer discretionary end markets. Lower selling prices were primarily due to lower raw material prices, including for care chemicals, and increased competitive pressure in markets for tire additives, animal nutrition, and adhesives resins.

EBIT in 2019 included a $45 million goodwill impairment of the crop protection business, an asset impairment charge of $5 million resulting from management's approval of a plan to discontinue production of certain products at the Singapore manufacturing site by the end of 2020, and a $4 million restructuring charge related to a capital project. EBIT in 2018 included a goodwill impairment charge related to the crop protection business and coal gasification incident insurance in excess of costs. Excluding these non-core and unusual items, EBIT decreased primarily due to lower selling prices of $133 million, lower sales volume of $101 million, and an unfavorable shift in foreign currency exchange rates of $22 million, partially offset by lower raw material costs of $136 million.

Growth and Cost Initiatives

In 2020, the AFP segment:

- completed a Dimethylethanolamine ("DMAE") manufacturing capacity expansion in China in response to growing demand for sustainable water treatment under stricter regulation. In addition, the Company decided to significantly increase capacity to produce tertiary amines at its Ghent, Belgium, facility to meet growing demand for hand sanitizers and other household cleaning products;
- advanced growth and innovation of Tetrashield™, resins that enable low-VOC formulations and eliminate energy-intensive manufacturing steps, by working with key customers and other brands through the value chain;
- completed process improvements of Eastoflex amorphous polyolefin ("APO") polymers manufacturing capacity in Longview, Texas to support product line growth and innovation;
- entered into a global customer supply agreement to meet a growing demand for products in the animal nutrition industry, expanding the Company's gut health solutions offerings; and
- as a result of the ongoing evaluation of strategic alternatives for certain businesses and product lines within the AFP segment, an animal nutrition manufacturing facility and a tire additives manufacturing facility were closed.

Advanced Materials Segment

	2020 Compared to 2019				2019 Compared to 2018			
			Change				Change	
(Dollars in millions)	2020	2019	$	%	2019	2018	$	%
Sales	$ 2,524	$ 2,688	$ (164)	(6)%	$ 2,688	$ 2,755	$ (67)	(2)%
Volume / product mix effect			(101)	(4)%			(25)	(1)%
Price effect			(67)	(2)%			—	— %
Exchange rate effect			4	— %			(42)	(1)%
EBIT	$ 427	$ 517	$ (90)	(17)%	$ 517	$ 509	$ 8	2 %
Asset impairments and restructuring charges, net	13	1	12		1	1	—	
Accelerated depreciation	8	—	8		—	—	—	
Net coal gasification incident insurance	—	—	—		—	(9)	9	
EBIT excluding non-core and unusual items	448	518	(70)	(14)%	518	501	17	3 %

2020 Compared to 2019

Sales revenue decreased due to lower sales volume and lower selling prices. The negative impact of COVID-19 on demand resulted in lower sales volume of advanced interlayers products sold into transportation end-markets, partially offset by increased sales volume in the fourth quarter for consumer durables and increased sales volume of certain standard copolyester products used in applications for personal care and wellness and consumables end-markets, resulting in a less favorable product mix. Lower selling prices were primarily attributed to lower raw material prices, particularly for paraxylene used in copolyester products.

EBIT in 2020 included severance charges of $5 million and accelerated depreciation charges of $8 million resulting from the closure of an advanced interlayers manufacturing facility, and asset impairments and restructuring charges of $8 million resulting from the closure of a performance films manufacturing facility, both in North America, as part of ongoing site optimization actions. Excluding these non-core items, EBIT decreased primarily due to $128 million of lower sales volume and higher manufacturing costs due to lower capacity utilization and reduction of inventory. These higher costs were offset $53 million by cost reduction actions and lower raw material and energy costs offsetting lower selling prices by $19 million.

2019 Compared to 2018

Sales revenue decreased due to lower sales volume and an unfavorable shift in foreign currency exchange rates. Increased sales volume of premium products, including paint protection films, Tritan™ copolyester, and Saflex™ acoustic and architectural interlayers, was more than offset by decreased sales volume of standard copolyester and interlayers products related to underlying market declines in transportation and consumer durable end markets.

EBIT in 2019 included a restructuring charge for severance costs. EBIT in 2018 included coal gasification incident insurance in excess of costs and a charge for an impairment of an indefinite-lived intangible asset. Excluding these non-core and unusual items, EBIT increased primarily due to lower raw material costs of $49 million, mostly offset by an unfavorable shift in foreign currency exchange rates of $23 million and lower sales volume of $16 million. The impact of lower sales volume was mostly offset by increased sales of certain premium products.

Growth and Cost Initiatives

In 2020, the AM segment:

- commercialized polyester renewal technology with multiple products in various markets including the adoption of Tritan™ Renew in durable goods end-markets;
- commercialized carbon renewal technology with multiple products in various markets including the adoption of Acetate Renew in the premium eyewear end-market;
- continued circular economy advancements (including the January 2021 announced methanolysis advanced plastic-to-plastic molecular recycling manufacturing facility);
- continued the growth of Tritan™ copolyester in the durable goods and health and wellness markets, supported by continued market and application development;
- continued to expand portfolio of differentiated next generation products for both automotive and architectural interlayer films products;
- developed and launched Eastman CORE (trademark and patent pending) digital product data analytics software for accessory sales management and installation of automotive window and paint protection films products; and
- as part of ongoing site optimization, a performance films manufacturing facility and an advanced interlayers manufacturing facility in North America were closed.

Chemical Intermediates Segment

	2020 Compared to 2019				2019 Compared to 2018			
			Change				Change	
(Dollars in millions)	2020	2019	$	%	2019	2018	$	%
Sales	$ 2,090	$ 2,443	$ (353)	(14)%	$ 2,443	$ 2,831	$ (388)	(14)%
Volume / product mix effect			(175)	(7)%			(122)	(4)%
Price effect			(180)	(7)%			(247)	(9)%
Exchange rate effect			2	— %			(19)	(1)%
EBIT	$ 166	$ 170	$ (4)	(2)%	$ 170	$ 308	$ (138)	(45)%
Asset impairments and restructuring charges, net	5	22	(17)		22	—	22	
Net coal gasification incident insurance	—	—	—		—	(30)	30	
EBIT excluding unusual item	171	192	(21)	(11)%	192	278	(86)	(31)%

2020 Compared to 2019

Sales revenue decreased primarily due to lower selling prices across the segment attributed to lower raw material prices, and lower sales volume in most product lines attributed to the negative impact of COVID-19 on demand and increased competitive pressure.

EBIT in 2020 included severance charges and EBIT in 2019 included an asset impairment charge both related to the previously reported plan to discontinue production of certain products at the Singapore manufacturing facility. Excluding these non-core items, EBIT decreased due to $66 million of lower sales volume and higher manufacturing costs due to lower capacity utilization, and lower selling prices partially offset by lower raw material and energy costs, totaling $17 million. The higher manufacturing costs were offset by $38 million of cost reduction actions and $18 million of technology licensing earnings in 2020.

2019 Compared to 2018

Sales revenue decreased primarily due to lower selling prices across the segment attributed to lower raw material prices and increased competitive activity. Sales revenue was also negatively impacted by lower functional amines products sales volume attributed to weaker demand in agricultural end-markets resulting from wet weather in North America and lower intermediates products sales volume attributed to increased competitive activity.

EBIT in 2019 included an asset impairment charge resulting from management's approval of a plan to discontinue production of certain products at the Singapore manufacturing site by the end of 2020. EBIT in 2018 included coal gasification incident insurance in excess of costs. Excluding these non-core and unusual items, EBIT decreased primarily due to lower selling prices more than offsetting lower raw material costs of $63 million and lower sales volumes of $9 million.

Growth and Cost Initiatives

To maintain and enhance its status as a low-cost producer and optimize earnings, the CI segment continuously focuses on cost control, operational efficiency, and capacity utilization. This includes focusing on products used internally by other operating segments, thereby supporting growth in specialty product lines throughout the Company, and also external licensing opportunities.

In 2020, the CI segment announced a strategic project for site optimization and recognized revenue and earnings from licensing of innovative technologies. Under a site optimization project with Gulf Coast Ammonia ("GCA") and Air Products, Inc., GCA leases a portion of Eastman's Texas City, Texas site and will build and own a new world-scale ammonia production plant. In 2018, the Company and Johnson Matthey announced that Eastman's proprietary technology for the production of mono ethylene glycol ("MEG") from coal had been selected by Inner Mongolia Jiutai New Material (Jiutai) for its planned 1,000,000 tonnes per annum ethylene glycol facility. The Company recognized revenue and earnings from the MEG technology license in 2020. In addition, production of certain products at the Singapore manufacturing site discontinued as of December 31, 2020 with the site to be shut down in 2021.

Fibers Segment

(Dollars in millions)	2020 Compared to 2019				2019 Compared to 2018			
			Change				Change	
	2020	2019	$	%	2019	2018	$	%
Sales	$ 837	$ 869	$ (32)	(4)%	$ 869	$ 918	$ (49)	(5)%
Volume / product mix effect			(18)	(2)%			(38)	(4)%
Price effect			(14)	(2)%			(7)	(1)%
Exchange rate effect			—	— %			(4)	— %
EBIT	$ 180	$ 194	$ (14)	(7)%	$ 194	$ 257	$ (63)	(25)%
Net coal gasification incident insurance	—	—	—		—	(38)	38	
EBIT excluding non-core and unusual items	180	194	(14)	(7)%	194	219	(25)	(11)%

2020 Compared to 2019

Sales revenue decreased primarily due to lower textile products sales volume attributed to the impact of COVID-19 on demand and lower acetate tow selling prices primarily due to previously negotiated multi-year contracts.

EBIT decreased primarily due to $26 million of lower sales volume and higher manufacturing costs due to lower capacity utilization and reduction of inventory. These higher costs were offset $10 million by cost reduction actions.

2019 Compared to 2018

Sales revenue decreased primarily due to lower acetate tow sales volume attributed to weakened market demand resulting from general market decline and customer buying patterns.

EBIT included coal gasification incident insurance in excess of costs in 2018. Excluding this unusual item, EBIT decreased primarily due to lower acetate tow sales volume of $24 million.

Growth and Cost Initiatives

The Fibers segment R&D efforts focus on serving existing customers, leveraging proprietary cellulose ester and spinning technology for differentiated application development in new markets, optimizing asset productivity, and working with suppliers to reduce costs. For acetate tow, these efforts are assisting customers in the effective use of the Fibers segment's products and customers' product development efforts. For other products, management is applying the Company's innovation-driven growth model to leverage its fibers technology and expertise to focus on innovative growth in the textiles and nonwovens markets. Examples of recent product innovation within the Fibers segment include Naia™ yarn for the apparel market developed from Eastman's proprietary cellulose ester technology; and Vestera™ wood pulp-based alternative for the nonwoven industry used in personal hygiene applications.

In 2019 the Company acquired Industrias del Acetato de Celulosa. S.A. ("INACSA"), a cellulosic yarn business in LA Batllòria, Spain as a targeted addition to the Fibers segment's acetate yarn business.

Other

(Dollars in millions)	2020	2019	2018
Loss before interest and taxes			
Growth initiatives and businesses not allocated to operating segments	$ (95)	$ (102)	$ (114)
Pension and other postretirement benefit plans income (expense), net not allocated to operating segments	(156)	(97)	(17)
Asset impairments and restructuring charges, net	(73)	(49)	(6)
Other income (charges), net not allocated to operating segments	(20)	(9)	(24)
Loss before interest and taxes before non-core and unusual items	$ (344)	$ (257)	$ (161)
Mark-to-market pension and other postretirement benefit plans (gain) loss, net	240	143	99
Asset impairments and restructuring charges, net	73	49	6
Costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	20
Loss before interest and taxes excluding non-core and unusual items	(31)	(65)	(36)

Costs related to growth initiatives, R&D costs, certain components of pension and other postretirement benefits, and other expenses and income not identifiable to an operating segment are not included in operating segment results for any of the periods presented and are included in "Other". In 2020, the Company recognized charges of $61 million for severance and related costs as part of business improvement and cost reduction initiatives, $4 million, for contract termination fees, and $8 million for asset impairments resulting from management's decision to discontinue certain growth initiatives for polyester based microfibers, including Avra™ performance fibers. In 2019, the Company recognized charges of $49 million for severance and related restructuring costs. In 2018, the Company recognized charges of $6 million for severance.

SALES BY CUSTOMER LOCATION

	Sales Revenue							
			Change				Change	
(Dollars in millions)	2020	2019	$	%	2019	2018	$	%
United States and Canada	$ 3,579	$ 3,885	$ (306)	(8)%	$ 3,885	$ 4,303	$ (418)	(10)%
Europe, Middle East, and Africa	2,299	2,544	(245)	(10)%	2,544	2,756	(212)	(8)%
Asia Pacific	2,111	2,278	(167)	(7)%	2,278	2,504	(226)	(9)%
Latin America	484	566	(82)	(14)%	566	588	(22)	(4)%
Total	$ 8,473	$ 9,273	$ (800)	(9)%	$ 9,273	$10,151	$ (878)	(9)%

2020 Compared to 2019

Sales revenue in United States and Canada decreased primarily due to lower selling prices in all operating segments and lower sales volume in the CI and AM segments. These items were partially offset by higher sales volume in the Fibers and AFP segments.

Sales revenue in Europe, Middle East, and Africa decreased primarily due to lower sales volume and lower selling prices in all operating segments. These items were partially offset by favorable foreign currency exchange rates in all operating segments.

Sales revenue in Asia Pacific decreased primarily due to lower selling prices and lower sales volume in all operating segments.

Sales revenue in Latin America decreased primarily due to lower sales volume and lower selling prices in all operating segments.

2019 Compared to 2018

Sales revenue in United States and Canada decreased primarily due to lower selling prices and lower sales volume in all operating segments, particularly in the CI and AFP segments.

Sales revenue in Europe, Middle East, and Africa decreased primarily due to unfavorable foreign currency exchange rates in all operating segments, lower AFP segment selling prices, and lower AFP and CI segments sales volume. These items were partially offset by higher sales volume in the AM segment.

Sales revenue in Asia Pacific decreased primarily due to lower sales volume in all operating segments, particularly in the AFP and AM segments, and lower CI and AFP segments selling prices.

Sales revenue in Latin America decreased primarily due to lower selling prices, particularly in the CI segment.

See Note 19, "Segment and Regional Sales Information", in this Annual Report for segment sales revenues by customer location.

LIQUIDITY AND OTHER FINANCIAL INFORMATION

COVID-19 Liquidity Actions

Priorities for uses of available cash for full year 2020 included payment of the quarterly dividend and the reduction of net debt. In first quarter and second quarter 2020, as a precautionary measure due to increased financial market volatility resulting from COVID-19, the Company took certain liquidity actions, including borrowing $400 million under its existing Credit Facility and $250 million under a new Term Loan. Borrowings under the Credit Facility were repaid in second quarter 2020 and borrowings under the Term Loan were repaid in third quarter 2020. As previously reported, in second quarter 2020, the Company amended the covenants of both loan agreements to reflect higher cash balances to enhance liquidity and the expected negative impact on operating results of COVID-19.

Cash Flows

The Company had cash and cash equivalents as follows:

(Dollars in millions)	December 31, 2020	2019	2018
Cash and cash equivalents	$ 564	$ 204	$ 226

Cash flows from operations, cash and cash equivalents, and other sources of liquidity are expected to be available and sufficient to meet foreseeable cash requirements. However, the Company's cash flows from operations can be affected by numerous factors including risks associated with global operations, raw material availability and cost, demand for and pricing of Eastman's products, capacity utilization, and other factors described under "Risk Factors" in this MD&A. Management believes maintaining a financial profile that supports an investment grade credit rating is important to its long-term strategy and financial flexibility.

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Net cash provided by (used in):			
Operating activities	$ 1,455	$ 1,504	$ 1,543
Investing activities	(394)	(480)	(463)
Financing activities	(704)	(1,043)	(1,040)
Effect of exchange rate changes on cash and cash equivalents	3	(3)	(5)
Net change in cash and cash equivalents	360	(22)	35
Cash and cash equivalents at beginning of period	204	226	191
Cash and cash equivalents at end of period	$ 564	$ 204	$ 226

2020 Compared to 2019

Cash provided by operating activities decreased $49 million due to lower net earnings, partially offset by lower net working capital (trade receivables, inventories, and trade payables), primarily due to a decrease in inventories.

Cash used in investing activities decreased $86 million due to lower additions to properties and equipment. Additionally, there were acquisitions in the AFP and Fibers business segments in 2019.

Cash used in financing activities decreased $339 million due to lower share repurchases and lower debt repayments.

2019 Compared to 2018

Cash provided by operating activities decreased primarily due to lower net earnings, partially offset by lower net working capital (trade receivables, inventories, and trade payables).

Cash used in investing activities increased $17 million. Proceeds from coal gasification incident insurance for property damage of $65 million was included in 2018. Excluding this item, cash used in investing activities decreased $48 million due to lower capital expenditures partially offset by acquisitions of businesses in the AFP and Fibers segments. Lower capital expenditures were due to significant capital projects related to key growth initiatives being completed and put into service during 2018.

Cash used in financing activities was relatively unchanged with increased net debt repayments and dividend payments offset by lower share repurchases.

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Net cash provided by operating activities	$ 1,455	$ 1,504	$ 1,543
Capital expenditures			
Additions to properties and equipment	(383)	(425)	(528)
Proceeds from property insurance [(1)]	—	—	65
Net capital expenditures	(383)	(425)	(463)
Free cash flow	$ 1,072	$ 1,079	$ 1,080

(1) Cash proceeds from insurance for coal gasification incident property damage.

Working Capital Management and Off Balance Sheet Arrangements

Eastman applies a proactive and disciplined approach to working capital management to optimize cash flow and to enable a full range of capital allocation options in support of the Company's strategy. Eastman expects to continue utilizing the programs described below to support free cash flow consistent with our past practices.

The Company has an off balance sheet, uncommitted accounts receivable factoring program under which entire invoices may be sold, without recourse, to third-party financial institutions. Available capacity under these agreements, which the Company uses as a routine source of working capital funding, is dependent on the level of accounts receivable eligible to be sold and the financial institutions' willingness to purchase such receivables. The total amount of receivables sold in 2020 and 2019 were $1.5 billion and $0.9 billion, respectively. Based on the original terms of receivables sold for certain agreements and actual outstanding balance of receivables under service agreements, the Company estimates that $150 million and $169 million of these receivables would have been outstanding as of December 31, 2020 and December 31, 2019, respectively, had they not been sold under these factoring agreements.

Eastman works with suppliers to optimize payment terms and conditions on accounts payable to enhance timing of working capital and cash flows. As part of these efforts, in 2019 the Company introduced a voluntary supply chain finance program to provide suppliers with the opportunity to sell receivables due from Eastman to a participating financial institution. See Note 1, "Significant Accounting Policies", to the Company's consolidated financial statements in this Annual Report for additional information regarding both programs.

Debt and Other Commitments

(Dollars in millions)	Payments Due for						
Period	Debt Securities	Credit Facilities and Other	Interest Payable	Purchase Obligations	Operating Leases	Other Liabilities	Total
2021	$ 299	$ 50	$ 172	$ 187	$ 60	$ 274	$ 1,042
2022	744	—	174	174	44	95	1,231
2023	919	—	157	137	31	91	1,335
2024	241	—	137	140	18	99	635
2025	701	—	119	112	12	87	1,031
2026 and beyond	2,664	—	1,291	2,432	28	1,191	7,606
Total	$ 5,568	$ 50	$ 2,050	$ 3,182	$ 193	$ 1,837	$ 12,880

At December 31, 2020, Eastman's borrowings totaled approximately $5.6 billion with various maturities. In October 2020, the Company repaid the 4.5% notes due January 2021 ($185 million principal) using available cash. In fourth quarter 2019, the Company repaid the 2.7% notes due January 2020 ($250 million principal) using available cash. For information about debt and related interest, see Note 8, "Borrowings", to the Company's consolidated financial statements in this Annual Report.

For information about purchase obligations and operating leases, see Note 11, "Leases and Other Commitments", to the Company's consolidated financial statements in this Annual Report.

Amounts in other liabilities represent the current estimated cash payments required to be made by the Company primarily for pension and other postretirement benefits, environmental loss contingency estimates, accrued compensation benefits, uncertain tax liabilities, and commodity and foreign exchange hedging in the periods indicated. Due to uncertainties in the timing of the effective settlement of tax positions with respect to taxing authorities, management is unable to determine the timing of payments related to uncertain tax liabilities and these amounts are included in the "2026 and beyond" line item.

The amount and timing of pension and other postretirement benefit payments included in other liabilities is dependent upon interest rates, health care cost trends, actual returns on plan assets, retirement and attrition rates of employees, continuation or modification of the benefit plans, and other factors. Such factors can significantly impact the amount and timing of any future contributions by the Company. Excess contributions are periodically made by management in order to keep the plans' funded status above 80 percent under the funding provisions of the Pension Protection Act to avoid partial benefit restrictions on accelerated forms of payment. The Company's U.S. defined benefit pension plans are not currently under any benefit restrictions. See Note 10, "Retirement Plans", to the Company's consolidated financial statements in this Annual Report, for more information regarding pension and other postretirement benefit obligations.

The resolution of uncertainties related to environmental matters included in other liabilities may have a material adverse effect on the Company's consolidated results of operations in the period recognized, however, because of the availability of legal defenses, the Company's preliminary assessment of actions that may be required, and, if applicable, the expected sharing of costs, management does not believe that the Company's liability for these environmental matters, individually or in the aggregate, will be material to the Company's consolidated financial position, results of operations, or cash flows. See Note 1, "Significant Accounting Policies", to the Company's consolidated financial statements in this Annual Report for the Company's accounting policy for environmental costs, and see Note 12, "Environmental Matters and Asset Retirement Obligations", to the Company's consolidated financial statements in this Annual Report for more information regarding outstanding environmental matters and asset retirement obligations.

Loan Agreement, Credit Facility, and Commercial Paper Borrowings

In second quarter 2020, the Company borrowed $250 million under a new Term Loan as a precautionary measure due to increased financial market volatility, particularly in the availability and terms of commercial paper, resulting from COVID-19. In third quarter 2020, the Term Loan was repaid using available cash. See Note 8, "Borrowings", to the Company's consolidated financial statements in this Annual Report.

The Company has access to a $1.50 billion Credit Facility expiring October 2023. Borrowings under the Credit Facility are subject to interest at varying spreads above quoted market rates and a commitment fee is paid on the total unused commitment. The Credit Facility provides available liquidity for general corporate purposes and supports commercial paper borrowings. Commercial paper borrowings are classified as short-term. At December 31, 2020, the Company had no outstanding borrowings under the Credit Facility. At December 31, 2020, commercial paper borrowings were $50 million with a weighted average interest rate of 0.25 percent. See Note 8, "Borrowings", to the Company's consolidated financial statements in this Annual Report.

The Credit Facility contains customary covenants, including requirements to maintain certain financial ratios, that determine the events of default, amounts available, and terms of borrowings. The Company was in compliance with all covenants at both December 31, 2020 and December 31, 2019. As previously reported, in second quarter 2020 the Company amended the Credit Facility and the Term Loan maximum debt covenants to reflect the higher cash balance to enhance liquidity due to, and the expected negative impact on operating results of, COVID-19 and added a new restrictive covenant prohibiting stock repurchases until June 30, 2021 in the event certain financial ratios are exceeded. See the Current Report on Form 8-K filed May 6, 2020 for additional information on the amendments to the Credit Facility and the Term Loan. The total amount of available borrowings under the Credit Facility was approximately $1.50 billion as of December 31, 2020.

In second quarter 2020, management made the decision not to renew the Company's $250 million accounts receivable securitization agreement, determining other available sources of liquidity sufficient to meet foreseeable cash requirements. See Note 8, "Borrowings", to the Company's consolidated financial statements in this Annual Report.

Net Debt

(Dollars in millions, unaudited)	December 31, 2020	December 31, 2019
Total borrowings	$ 5,618	$ 5,782
Less: Cash and cash equivalents	564	204
Net debt [1]	$ 5,054	$ 5,578

(1) Includes a non-cash increase of $132 million in 2020 and a non-cash decrease of $25 million in 2019 resulting from foreign currency exchange rates.

In 2020 the Company reduced net debt by $656 million excluding the impact of foreign currency exchange rates.

Capital Expenditures

Capital expenditures were $383 million, $425 million, and $528 million ($463 million net of proceeds from property damage insurance for 2017 coal gasification incident) in 2020, 2019, and 2018, respectively. Capital expenditures in 2020 were primarily for targeted growth initiatives and site modernization projects.

The Company expects that 2021 capital spending will be between $500 million and $525 million, primarily for targeted growth initiatives, including the AM segment methanolysis plastic-to-plastic molecular recycling manufacturing facility in Kingsport, Tennessee, and global site modernization projects.

The Company had capital expenditures related to environmental protection and improvement of approximately $42 million, $27 million, and $44 million in 2020, 2019, and 2018, respectively. The Company does not currently expect near term environmental capital expenditures arising from requirements of environmental laws and regulations to materially impact the Company's planned level of annual capital expenditures for environmental control facilities.

Stock Repurchases and Dividends

In February 2014, the Company's Board of Directors authorized the repurchase of up to $1 billion of the Company's outstanding common stock. The Company completed the $1 billion repurchase authorization in May 2018, acquiring a total of 12,215,950 shares. In February 2018, the Company's Board of Directors authorized the repurchase of up to an additional $2 billion of the Company's outstanding common stock at such times, in such amounts, and on such terms, as determined by management to be in the best interest of the Company. As of December 31, 2020, a total of 7,887,216 shares have been repurchased under the February 2018 authorization for a total amount of $633 million. During 2020, the Company repurchased a total of 1,134,052 shares for a total cost of approximately $60 million.

The Board of Directors has declared a cash dividend of $0.69 per share during the first quarter of 2021, payable on April 5, 2021 to stockholders of record on March 15, 2021.

INFLATION

In recent years, general economic inflation has not had a material adverse impact on Eastman's costs. The cost of raw materials is generally based on market prices, although derivative financial instruments are utilized, as appropriate, to mitigate short-term market price fluctuations. Management expects the volatility of raw material and energy prices and costs to continue and the Company will continue to pursue pricing and hedging strategies and ongoing cost control initiatives to offset the effects. For additional information, see Note 9, "Derivative and Non-Derivative Financial Instruments", to the Company's consolidated financial statements in this Annual Report.

RECENTLY ISSUED ACCOUNTING STANDARDS

For information regarding the impact of recently issued accounting standards, see Note 1, "Significant Accounting Policies", to Eastman's consolidated financial statements in this Annual Report.

OUTLOOK

In 2021, management expects adjusted EPS to increase between 20 and 30 percent compared with 2020 and free cash flow to be greater than $1 billion. These expectations assume:

- economic activity recovering from the impact of COVID-19;
- cost structure to be similar to 2020 due to structural cost savings from transformation of businesses and operations;
- lower costs of approximately $100 million from improved capacity utilization in 2021 due to aggressive inventory actions in 2020;
- increased sales volume and improved product mix due to innovation-driven growth model and continued recovery in key end-markets, including auto, textiles, and durables;
- timing of price increases in response to higher raw material, energy, and logistics costs and continued competitive pressure in markets for tire additives and adhesives resins products to negatively impact financial results;
- interest expense of approximately $200 million;
- the full-year effective tax rate on adjusted earnings before income tax to be between 15 and 16 percent;
- depreciation and amortization of approximately $570 million; and
- capital expenditures between $500 million and $525 million.

In addition, the Company expects net debt reduction of approximately $300 million.

The Company's 2021 financial results forecasts do not include non-core, unusual, or non-recurring items. Accordingly, management is unable to reconcile projected full-year 2021 earnings excluding non-core, unusual, or non-recurring items to projected reported GAAP earnings without unreasonable efforts.

See "Forward-Looking Statements" and "Risk Factors" below.

FORWARD-LOOKING STATEMENTS

Certain statements made or incorporated by reference in this Annual Report are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act (Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities and Exchange Act of 1934, as amended). Forward-looking statements are all statements, other than statements of historical fact, that may be made by Eastman Chemical Company ("Eastman" or the "Company") from time to time. In some cases, you can identify forward-looking statements by terminology such as "anticipates", "believes", "estimates", "expects", "intends", "may", "plans", "projects", "forecasts", "will", "would", and similar expressions or expressions of the negative of these terms. Forward-looking statements may relate to, among other things, such matters as planned and expected capacity increases and utilization; anticipated capital spending; expected depreciation and amortization; environmental matters and opportunities (including potential risks associated with physical impacts of climate change and related voluntary and regulatory carbon requirements); exposure to, and effects of hedging of, raw material and energy prices and costs; foreign currencies and interest rates; disruption or interruption of operations and of raw material or energy supply; global and regional economic, political, and business conditions; competition; growth opportunities; supply and demand, volume, price, cost, margin and sales; pending and future legal proceedings; earnings, cash flow, dividends, stock repurchases and other expected financial results, events, decisions, and conditions; expectations, strategies, and plans for individual assets and products, businesses, and operating segments, as well as for the whole of Eastman; cash sources and requirements and uses of available cash; financing plans and activities; pension expenses and funding; credit ratings; anticipated and other future restructuring, acquisition, divestiture, and consolidation activities; cost reduction and control efforts and targets; the timing and costs of, benefits from the integration of, and expected business and financial performance of acquired businesses as well as the subsequent impairment assessments of acquired long-lived assets; strategic, technology, and product innovation initiatives and development, production, commercialization and acceptance of new products, services and technologies and related costs; asset, business, and product portfolio changes; and expected tax rates and interest costs.

Forward-looking statements are based upon certain underlying assumptions as of the date such statements were made. Such assumptions are based upon internal estimates and other analyses of current market conditions and trends, management expectations, plans, and strategies, economic conditions, and other factors. Forward-looking statements and the assumptions underlying them are necessarily subject to risks and uncertainties inherent in projecting future conditions and results. Actual results could differ materially from expectations expressed in the forward-looking statements if one or more of the underlying assumptions and expectations proves to be inaccurate or is unrealized. The known material factors, risks, and uncertainties that could cause actual results to differ materially from those in the forward-looking statements are identified and discussed under "Management's Discussion and Analysis of Financial Condition and Results of Operations - Risk Factors" in this Annual Report. Other factors, risks or uncertainties of which management is not aware, or presently deems immaterial, could also cause actual results to differ materially from those in the forward-looking statements.

The Company cautions you not to place undue reliance on forward-looking statements, which speak only as of the date such statements are made. Except as may be required by law, the Company undertakes no obligation to update or alter these forward-looking statements, whether as a result of new information, future events, or otherwise. Investors are advised, however, to consult any further public Company disclosures (such as filings with the Securities and Exchange Commission, Company press releases, or pre-noticed public investor presentations) on related subjects.

RISK FACTORS

In addition to factors described elsewhere in this Annual Report, the following are the material known factors, risks, and uncertainties that could cause actual results to differ materially from those under "Outlook" and in the forward-looking statements made in this Annual Report and elsewhere from time to time. See "Forward-Looking Statements". The following risk factors are not necessarily presented in the order of importance. In addition, there may be other factors, not currently known to the Company, which could, in the future, materially adversely affect the Company, its business, financial condition, or results of operations. This and other related disclosures made by the Company in this Annual Report and elsewhere from time to time, represents management's best judgment as of the date the information is given. The Company does not undertake responsibility for updating any of such information, whether as a result of new information, future events, or otherwise, except as required by law. Investors are advised, however, to consult any further public Company disclosures (such as in filings with the Securities and Exchange Commission or in Company press releases) on related subjects.

Risks Related to Global Economy and Industry Conditions

Continued uncertain conditions in the global economy and the financial markets could negatively impact the Company.

The Company's business and operating results were impacted by the last global recession, and its related impacts, such as the credit market crisis, declining consumer and business confidence, fluctuating commodity prices, volatile exchange rates, and other challenges that impacted the global economy. Similarly, as a company which operates and sells products worldwide, continued uncertainty in the global economy and global capital markets resulting from the current global COVID-19 pandemic have adversely impacted and are expected to continue to adversely impact demand for certain Eastman products and, accordingly results of operations, and may adversely impact the Company's financial condition and cash flows and ability to access the credit and capital markets under attractive rates and terms and negatively impact the Company's liquidity or ability to pursue certain growth initiatives.

Volatility in costs for strategic raw material and energy commodities or disruption in the supply of these commodities could adversely impact the Company's financial results.

Eastman is reliant on certain strategic raw material and energy commodities for its operations and utilizes risk management tools, including hedging, as appropriate, to mitigate market fluctuations in raw material and energy costs. These risk mitigation measures do not eliminate all exposure to market fluctuations and may limit the Company from fully benefiting from lower raw material costs and, conversely, offset the impact of higher raw material costs. In addition, the ongoing global COVID-19 pandemic has adversely impacted and is expected to continue to impact, and natural disasters, plant interruptions, supply chain disruptions, changes in laws or regulations, war or other outbreak of hostilities or terrorism, and breakdown or degradation of transportation and supply chain infrastructure used for delivery of strategic raw material and energy commodities could adversely impact, both the cost and availability of these commodities.

The Company's substantial global operations subject it to risks of doing business in other countries, including U.S. and non-U.S. trade relations, which could adversely impact its business, financial condition, and results of operations.

More than half of Eastman's sales for 2020 were to customers outside of North America. The Company expects sales from international markets to continue to represent a significant portion of its sales. Also, a significant portion of the Company's manufacturing capacity is located outside of the United States. Accordingly, the Company's business is subject to risks related to the differing legal, political, cultural, social and regulatory requirements, and economic conditions of many jurisdictions including the unique geographic impacts of the global COVID-19 pandemic. Fluctuations in exchange rates may impact product demand and may adversely impact the profitability in U.S. dollars of products and services provided in foreign countries. In addition, the U.S. and foreign countries have imposed and may impose additional taxes or otherwise tax Eastman's foreign income (see "Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Estimates - Income Taxes" in this Annual Report), or adopt or increase restrictions on foreign trade or investment, including currency exchange controls, tariffs or other taxes, or limitations on imports or exports (including recent and proposed changes in U.S. trade policy and resulting retaliatory actions by other countries, including China, which have recently reduced and which may increasingly reduce demand for and increase costs of impacted products or result in U.S.-based trade counterparties limiting trade with U.S.-based companies or non-U.S. customers limiting their purchases from U.S.-based companies). Certain legal and political risks are also inherent in the operation of a company with Eastman's global scope. For example, it may be more difficult for Eastman to enforce its agreements or collect receivables through foreign legal systems, and the laws of some countries may not protect the Company's intellectual property rights to the same extent as the laws of the U.S. Failure of foreign countries to have laws to protect Eastman's intellectual property rights or an inability to effectively enforce such rights in foreign countries could result in loss of valuable proprietary information. There is also risk that foreign governments may nationalize private enterprises in certain countries where Eastman operates. Social and cultural norms in certain countries may not support compliance with Eastman's corporate policies including those that require compliance with substantive laws and regulations. Also, changes in general economic and political conditions (including the U.K. departure from the European Union, also known as "Brexit") in countries where Eastman operates are a risk to the Company's financial performance. As Eastman continues to operate its business globally, its success will depend, in part, on its ability to anticipate and effectively manage these and other related risks. There can be no assurance that the consequences of these and other factors relating to its multinational operations will not have an adverse impact on Eastman's business, financial condition, or results of operations.

Risks Related to the Company's Business and Strategy

The Company's business is subject to operating risks common to chemical manufacturing businesses, including cybersecurity risks, any of which could disrupt manufacturing operations or related infrastructure and adversely impact results of operations.

As a global specialty materials company, Eastman's business is subject to operating risks common to chemical manufacturing, storage, handling, and transportation, including explosions, fires, inclement weather, natural disasters, mechanical failure, unscheduled downtime, transportation and supply chain interruptions, remediation, chemical spills, discharges or releases of toxic or hazardous substances or gases. Significant limitation on the Company's ability to manufacture products due to disruption of manufacturing operations or related infrastructure could have a material adverse impact on the Company's sales revenue, costs, results of operations, credit ratings, and financial condition. Disruptions could occur due to internal factors such as computer or equipment malfunction (accidental or intentional), operator error, or process failures; or external factors such as supply chain disruption, computer or equipment malfunction at third-party service providers, natural disasters, changes in laws or regulations, war or other outbreak of hostilities or terrorism, cyber attacks, or breakdown or degradation of transportation and supply chain infrastructure used for delivery of supplies to the Company or for delivery of products to customers. The Company has in the past experienced cyber attacks and breaches of its computer information systems, although none of these have had a material adverse impact on the Company's operations and financial results. While the Company remains committed to managing cyber related risk, no assurances can be provided that any future disruptions due to these, or other, circumstances will not have a material impact on operations. Unplanned disruptions of manufacturing operations or related infrastructure could be significant in scale and could negatively impact operations, neighbors, and the environment, and could have a negative impact on the Company's results of operations. As previously reported, manufacturing operations and earnings were previously negatively impacted by the second quarter 2018 third-party supplier operational disruptions at the Texas City and Longview, Texas manufacturing facilities.

Growth initiatives may not achieve desired business or financial objectives and may require significant resources in addition to or different from those available or in excess of those estimated or budgeted for such initiatives.

Eastman continues to identify and pursue growth opportunities through both organic and inorganic initiatives. These growth opportunities include development and commercialization or licensing of innovative new products and technologies and related employee leadership, expertise, skill development and retention, expansion into new markets and geographic regions, alliances, ventures, and acquisitions that complement and extend the Company's portfolio of businesses and capabilities. Such initiatives are necessarily constrained by availability and development of additional resources, including development, attraction, and retention of employee leadership, application development, and sales and marketing talent and capabilities. There can be no assurance that such innovation, development and commercialization or licensing efforts, investments, or acquisitions and alliances (including integration of acquired businesses) will receive necessary governmental or regulatory approvals, or result in financially successful commercialization of products, or acceptance by existing or new customers, or successful entry into new markets or otherwise achieve their underlying strategic business objectives or that they will be beneficial to the Company's results of operations. There also can be no assurance that capital projects for growth efforts can be completed within the time or at the costs projected due, among other things, to demand for and availability of construction materials and labor and obtaining regulatory approvals and operating permits and reaching agreement on terms of key agreements and arrangements with potential suppliers and customers. Any such delays or cost overruns or the inability to obtain such approvals or to reach such agreements on acceptable terms could negatively impact the returns from any proposed or current investments and projects.

Significant acquisitions expose the Company to risks and uncertainties, the occurrence of any of which could materially adversely affect the Company's business, financial condition, and results of operations.

While acquisitions have been and continue to be a part of Eastman's growth strategy, acquisitions of large companies and businesses (such as the previous acquisitions of Taminco Corporation and Solutia, Inc.) subject the Company to a number of risks and uncertainties, the occurrence of any of which could have a material adverse effect on Eastman. These include, but are not limited to, the possibilities that the actual and projected future financial performance of the acquired business may be significantly worse than expected and that, as reported in "Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Estimates - Impairment of Long-Lived Assets - Goodwill" in this Annual Report, the carrying values of certain assets from acquisitions may, as has been the case for certain acquired assets primarily in the AFP segment, be impaired resulting in charges to future earnings; that significant additional indebtedness may constrain the Company's ability to access the credit and capital markets at attractive interest rates and favorable terms, which may negatively impact the Company's liquidity or ability to pursue certain growth initiatives; that the Company may not be able to achieve the cost, revenue, tax, or other "synergies" expected from any acquisition, or that there may be delays in achieving any such synergies; that management's time and effort may be dedicated to the new business resulting in a loss of focus on the successful operation of the Company's existing businesses; and that the Company may be required to expend significant additional resources in order to integrate any acquired business into Eastman or that the integration efforts will not achieve the expected benefits.

Risks Related to Regulatory Changes and Compliance

Legislative, regulatory, or voluntary actions could increase the Company's future health, safety, and environmental compliance costs.

Eastman, its facilities, and its businesses are subject to complex health, safety, and environmental laws, regulations, and related voluntary actions, both in the U.S. and internationally, which require and will continue to require significant expenditures to remain in compliance with such laws, regulations, and voluntary actions. The Company's accruals for such costs and associated liabilities are subject to changes in estimates on which the accruals are based. For example, any amount accrued for environmental matters reflects the Company's assumptions about remediation requirements at the contaminated site, the nature of the remedy, the outcome of discussions with regulatory agencies and other potentially responsible parties at multi-party sites, and the number of and financial viability of other potentially responsible parties. Changes in the estimates on which the accruals are based, unanticipated government enforcement action, or changes in health, safety, environmental, chemical control regulations and actions, and testing requirements could result in higher costs. Specifically, future changes in legislation and regulation and related voluntary actions associated with physical impacts of climate change may increase the likelihood that the Company's manufacturing facilities will in the future be impacted by carbon requirements, regulation of greenhouse gas emissions, and energy policy, and may result in capital expenditures, increases in costs for raw materials and energy, limitations on raw material and energy source and supply choices, and other direct compliance costs.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Eastman has exposure to various market risks principally due to changes in foreign currency exchange rates, the pricing of various commodities, and interest rates. In an effort to manage these risks, the Company employs various strategies, including pricing, inventory management, and hedging. The Company enters into derivative contracts which are governed by policies, procedures, and internal processes set forth by its Board of Directors.

The Company determines its exposures to market risk by utilizing sensitivity analyses, which measure the potential losses in fair value resulting from one or more selected hypothetical changes in foreign currency exchange rates, commodity prices, or interest rates.

Foreign Currency Risk

Due to a portion of the Company's operating cash flows and borrowings being denominated in foreign currencies, the Company is exposed to market risk from changes in foreign currency exchange rates. The Company continually evaluates its foreign currency exposure based on current market conditions and the locations in which the Company conducts business. The Company manages most foreign currency exposures on a consolidated basis, which allows the Company to net certain exposures and take advantage of natural offsets. To mitigate foreign currency risk, from time to time, the Company enters into derivative instruments to hedge the cash flows related to certain sales and purchase transactions expected within a rolling three year period and denominated in foreign currencies, and enters into forward exchange contracts to hedge certain firm commitments denominated in foreign currencies. The gains and losses on these contracts offset changes in the value of related exposures. Additionally, the Company, from time to time, enters into non-derivative and derivative instruments to hedge the foreign currency exposure of the net investment in certain foreign operations. The foreign currency change in the designated investment values of the foreign subsidiaries will generally be offset by a foreign currency change in the carrying value of the euro-denominated borrowings. It is the Company's policy to enter into foreign currency derivative and non-derivative instruments only to the extent considered necessary to meet its objectives as stated above. The Company does not enter into foreign currency derivative financial instruments for speculative purposes.

At December 31, 2020, the market risk associated with certain cash flows under these derivative transactions assuming a 10 percent adverse move in the U.S. dollar relative to these foreign currencies was $65 million, with an additional $6 million exposure for each additional one percentage point adverse change in those foreign currency rates. At December 31, 2019, the market risk associated with cash flows under these derivative transactions assuming a 10 percent adverse move in the U.S. dollar relative to those currencies was $74 million, with an additional $7 million exposure for each additional one percentage point adverse change in those exchange rates. Since the Company utilizes currency-sensitive derivative instruments for hedging anticipated foreign currency transactions, a loss in fair value from those instruments is generally offset by an increase in the value of the underlying anticipated transactions.

In September 2020, the Company entered into fixed-to-fixed cross-currency swaps and designated these swaps to hedge a portion of its net investment in a euro functional currency denominated subsidiary against foreign currency fluctuations. These contracts involve the exchange of fixed U.S. dollars with fixed euro interest payments periodically over the life of the contracts and an exchange of the notional amounts at maturity. The fixed-to-fixed cross-currency swaps include €152 million ($180 million) maturing December 2028.

At December 31, 2020, a 10 percent fluctuation in the euro currency rate would have had a $258 million impact on the designated net investment values in the foreign subsidiaries. At December 31, 2019, a 10 percent fluctuation in the euro currency rate would have had a $235 million impact on the designated net investment values in the foreign subsidiaries. As a result of the designation of the euro-denominated borrowings and designated cross-currency interest rate swaps as hedges of the net investments, foreign currency translation gains and losses on the borrowings and designated cross-currency interest rate swaps are recorded as a component of the "Change in cumulative translation adjustment" within "Other comprehensive income (loss), net of tax" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings in this Annual Report. Therefore, a foreign currency change in the designated investment values of the foreign subsidiaries will generally be offset by a foreign currency change in the carrying value of the euro-denominated borrowings or the foreign currency change in the designated cross-currency interest rate swaps.

Commodity Risk

The Company is exposed to fluctuations in market prices for certain of its raw materials and energy, as well as contract sales of certain commodity products. To mitigate short-term fluctuations in market prices for certain commodities, principally propane, ethane, natural gas, paraxylene, ethylene, and benzene, as well as selling prices for ethylene, the Company enters into derivative transactions, from time to time, to hedge the cash flows related to certain sales and purchase transactions expected within a rolling three year period. At December 31, 2020 and December 31, 2019, the market risk associated with these derivative contracts, assuming an instantaneous parallel shift in the underlying commodity price of 10 percent and no corresponding change in the selling price of finished goods, was $5 million and $9 million, respectively, with an additional $1 million of exposure at both December 31, 2020 and December 31, 2019 for each one percentage point move in closing price thereafter.

Interest Rate Risk

Eastman is exposed to interest rate risk primarily as a result of its borrowing and investing activities, which include long-term borrowings used to maintain liquidity and to fund its business operations and capital requirements. The nature and amount of the Company's long-term and short-term debt may vary from time to time as a result of business requirements, market conditions, and other factors. The Company manages global interest rate exposure as part of regular operational and financing strategies. The Company had variable interest rate borrowings (including credit facility borrowings and commercial paper borrowings) of $50 million and $171 million at December 31, 2020 and 2019, respectively. These borrowings represented approximately 1 percent and 3 percent of total outstanding debt and bore weighted average interest rates of 0.25 percent and 2.03 percent at December 31, 2020 and 2019, respectively. A hypothetical 10 percent increase in the average interest rate applicable to these borrowings would have no material impact on the annualized interest expense as of December 31, 2020 and December 31, 2019.

In first, second, and third quarters 2020, Eastman entered into forward-starting interest rate swaps with a notional amount of $25 million in each quarter to mitigate the risk of variability in interest rates for an expected long-term debt issuance by August 2022. These swaps were designated as cash flow hedges and will be settled upon debt issuance. The total outstanding forward starting swaps as of December 31, 2020 was $75 million.

Eastman may enter into interest rate swaps, collars, or similar instruments with the objective of reducing interest rate volatility relating to the Company's borrowing costs. As of December 31, 2020 and December 31 2019, the Company had interest rate swaps outstanding with notional values of $150 million and $75 million, respectively. For purposes of calculating the market risks associated with the fair value of interest-rate-sensitive instruments, the Company uses a hypothetical 10 percent increase in interest rates. The corresponding market risk of the interest rate swap hedging the interest rate risk on the 3.8% bonds maturing March 2025 and the interest rate swap hedging the variability in interest rates for long-term debt issuances was $1 million as of both December 31, 2020 and December 31, 2019.

FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL STATEMENTS

Management is responsible for the preparation and integrity of the accompanying consolidated financial statements of Eastman Chemical Company ("Eastman" or the "Company"). Eastman has prepared these consolidated financial statements in accordance with accounting principles generally accepted in the United States, and the statements of necessity include some amounts that are based on management's best estimates and judgments.

Eastman's accounting systems include extensive internal controls designed to provide reasonable assurance of the reliability of its financial records and the proper safeguarding and use of its assets. Such controls are based on established policies and procedures, are implemented by trained, skilled personnel with an appropriate segregation of duties, and are monitored through a comprehensive internal audit program. The Company's policies and procedures prescribe that the Company and all employees are to maintain the highest ethical standards and that its business practices throughout the world are to be conducted in a manner that is above reproach.

The accompanying consolidated financial statements have been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, who were responsible for conducting their audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Their report is included herein.

The Board of Directors exercises its responsibility for these financial statements through its Audit Committee, which consists entirely of non-management Board members. PricewaterhouseCoopers LLP, and internal auditors have full and free access to the Audit Committee. The Audit Committee meets periodically with PricewaterhouseCoopers LLP and Eastman's Director of Corporate Audit Services, both privately and with management present, to discuss accounting, auditing, policies and procedures, internal controls, and financial reporting matters.

/s/ Mark J. Costa	/s/ William T. McLain, Jr.
Mark J. Costa	William T. McLain, Jr.
Chief Executive Officer	Senior Vice President and Chief Financial Officer
February 22, 2021	February 22, 2021

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Eastman Chemical Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of Eastman Chemical Company and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of earnings, comprehensive income and retained earnings, and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles

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

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

The critical audit 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 (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Goodwill Impairment Assessment – Tire Additives Reporting Unit

As described in Note 4 to the consolidated financial statements, the Company's consolidated goodwill balance was $4.5 billion as of December 31, 2020. Goodwill allocated to the tire additives reporting unit of the Additives & Functional Products segment is $725 million. Management conducts testing of goodwill annually in the fourth quarter or more frequently when events and circumstances indicate an impairment may have occurred. As disclosed by management, in second quarter 2020, management concluded that the decrease in forecasted revenue and earnings before interest and taxes (EBIT) for the tire additives reporting unit reduced the fair value such that the estimated fair value approximated the carrying value. The decrease in forecasted revenue and EBIT for the tire additives reporting unit was primarily the result of weakened demand in transportation markets impacted by COVID-19 and increased competitive pricing pressure as a result of global capacity increases. Additionally, management disclosed that as a result of the goodwill impairment testing performed during fourth quarter 2020, fair values were determined to substantially exceed the carrying values for each reporting unit tested with the exception of the tire additives reporting unit whose fair value continues to approximate carrying value. Management uses an income approach, including some unobservable inputs, and applies a discounted cash flow model in testing the carrying value of goodwill for impairment. Management's cash flow projections for the tire additives reporting unit included key assumptions and estimates related to projections of revenues and EBIT, the estimated weighted average cost of capital (WACC) and a projected long-term growth rate.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the tire additives reporting unit is a critical audit matter are (i) the significant judgment by management when developing the fair value measurement of the reporting unit; (ii) a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating management's significant assumptions related to projections of revenues and EBIT, the estimated WACC, and the projected long-term growth rate; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the valuation of the Company's reporting units. These procedures also included, among others (i) testing management’s process for developing the fair value estimate of the tire additives reporting unit, (ii) evaluating the appropriateness of the discounted cash flow model, (iii) testing the completeness, accuracy and relevance of underlying data used in the model, and (iv) evaluating the significant assumptions used by management related to projections of revenues and EBIT, the estimated WACC, and the projected long-term growth rate. Evaluating management's assumptions related to the projections of revenues and EBIT and the projected long-term growth rate involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting unit, (ii) the consistency with external industry reports, and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's discounted cash flow model and the estimated WACC.

Indefinite-lived Intangible Impairment Assessment – Crystex™ and Santoflex™

As described in Note 4 to the consolidated financial statements, the Company's consolidated indefinite-lived intangible assets balance was $374 million as of December 31, 2020. The Company conducts testing of indefinite-lived intangible assets annually in the fourth quarter or more frequently when events and circumstances indicate an impairment may have occurred.

Indefinite-lived intangible assets, consisting primarily of various tradenames, are tested for potential impairment by comparing the estimated fair value to the carrying amount. In second quarter 2020, outside of the annual impairment testing process, management reviewed the indefinite-lived intangible assets associated with the tire additives reporting unit for impairment. As a result of the review, the Company recognized intangible asset impairments of $123 million in second quarter 2020 in the tire additives reporting unit to reduce the carrying value of the Crystex™ and Santoflex™ tradenames to their estimated fair values. The impairments are primarily the result of weakened demand in transportation markets impacted by COVID-19 and increased competitive pricing pressure as a result of global capacity increases. Management uses an income approach, specifically the relief from royalty method, to test indefinite-lived intangible assets for impairment. The estimated fair value of tradenames is determined based on projections of revenues and an assumed royalty rate savings, discounted by the estimated WACC plus a risk premium.

The principal considerations for our determination that performing procedures relating to the Crystex™ and Santoflex™ tradenames is a critical audit matter are (i) the significant judgment by management when developing the fair value measurement of the tradenames; (ii) a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating management’s significant assumptions related to projections of revenues, the assumed royalty rate savings, and the estimated WACC plus a risk premium; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's indefinite-lived intangible impairment assessment, including controls over the valuation of the Company's tradenames. These procedures also included, among others (i) testing management's process for developing the fair value estimate of the Crystex™ and Santoflex™ tradenames, (ii) evaluating the appropriateness of the relief from royalty method, (iii) testing the completeness, accuracy and relevance of underlying data used in the model, and (iv) evaluating the significant assumptions used by management related to projections of revenues, the assumed royalty rate savings, and the estimated WACC plus a risk premium. Evaluating management's assumptions related to the projections of revenues involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the tradenames, (ii) the consistency with external industry reports, and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's relief from royalty method, the assumed royalty rate savings and the estimated WACC plus a risk premium assumption.

/s/ PricewaterhouseCoopers LLP
Charlotte, NC
February 22, 2021

We have served as the Company's auditor since 1993.

CONSOLIDATED STATEMENTS OF EARNINGS, COMPREHENSIVE INCOME AND RETAINED EARNINGS

(Dollars in millions, except per share amounts)	For years ended December 31, 2020	2019	2018
Sales	$ 8,473	$ 9,273	$ 10,151
Cost of sales	6,498	7,039	7,672
Gross profit	1,975	2,234	2,479
Selling, general and administrative expenses	654	691	721
Research and development expenses	226	234	235
Asset impairments and restructuring charges, net	227	126	45
Other components of post-employment (benefit) cost, net	119	60	(21)
Other (income) charges, net	8	3	(53)
Earnings before interest and taxes	741	1,120	1,552
Net interest expense	210	218	235
Early debt extinguishment costs	1	—	7
Earnings before income taxes	530	902	1,310
Provision for income taxes	41	140	226
Net earnings	489	762	1,084
Less: Net earnings attributable to noncontrolling interest	11	3	4
Net earnings attributable to Eastman	$ 478	$ 759	$ 1,080
Basic earnings per share attributable to Eastman	$ 3.53	$ 5.52	$ 7.65
Diluted earnings per share attributable to Eastman	$ 3.50	$ 5.48	$ 7.56
Comprehensive Income			
Net earnings including noncontrolling interest	$ 489	$ 762	$ 1,084
Other comprehensive income (loss), net of tax:			
Change in cumulative translation adjustment	(29)	45	(13)
Defined benefit pension and other postretirement benefit plans:			
Prior service credit arising during the period	9	—	—
Amortization of unrecognized prior service credits included in net periodic costs	(28)	(29)	(30)
Derivatives and hedging:			
Unrealized gain (loss) during period	(34)	(20)	22
Reclassification adjustment for (gains) losses included in net income, net	23	15	(15)
Total other comprehensive income (loss), net of tax	(59)	11	(36)
Comprehensive income including noncontrolling interest	430	773	1,048
Less: Comprehensive income attributable to noncontrolling interest	11	3	4
Comprehensive income attributable to Eastman	$ 419	$ 770	$ 1,044
Retained Earnings			
Retained earnings at beginning of period	$ 7,965	$ 7,573	$ 6,802
Cumulative effect adjustment resulting from adoption of new accounting standards	—	(20)	16
Net earnings attributable to Eastman	478	759	1,080
Cash dividends declared	(363)	(347)	(325)
Retained earnings at end of period	$ 8,080	$ 7,965	$ 7,573

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

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(Dollars in millions, except per share amounts)	December 31, 2020	December 31, 2019
Assets		
Current assets		
Cash and cash equivalents	$ 564	$ 204
Trade receivables, net of allowance for credit losses	1,033	980
Miscellaneous receivables	482	395
Inventories	1,379	1,662
Other current assets	83	80
Total current assets	3,541	3,321
Properties		
Properties and equipment at cost	13,531	13,081
Less: Accumulated depreciation	7,982	7,510
Net properties	5,549	5,571
Goodwill	4,465	4,431
Intangible assets, net of accumulated amortization	1,792	2,011
Other noncurrent assets	736	674
Total assets	$ 16,083	$ 16,008
Liabilities and Stockholders' Equity		
Current liabilities		
Payables and other current liabilities	$ 1,689	$ 1,618
Borrowings due within one year	349	171
Total current liabilities	2,038	1,789
Long-term borrowings	5,269	5,611
Deferred income tax liabilities	848	915
Post-employment obligations	1,143	1,016
Other long-term liabilities	677	645
Total liabilities	9,975	9,976
Commitments and contingencies (Note 11)		
Stockholders' equity		
Common stock ($0.01 par value per share – 350,000,000 shares authorized; shares issued – 220,641,506 and 219,638,646 for 2020 and 2019, respectively)	2	2
Additional paid-in capital	2,174	2,105
Retained earnings	8,080	7,965
Accumulated other comprehensive loss	(273)	(214)
	9,983	9,858
Less: Treasury stock at cost (84,830,450 shares for 2020 and 83,696,398 shares for 2019)	3,960	3,900
Total Eastman stockholders' equity	6,023	5,958
Noncontrolling interest	85	74
Total equity	6,108	6,032
Total liabilities and stockholders' equity	$ 16,083	$ 16,008

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Operating activities			
Net earnings	$ 489	$ 762	$ 1,084
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	574	611	604
Mark-to-market pension and other postretirement benefit plans (gain) loss, net	240	143	99
Asset impairment charges	146	72	39
Early debt extinguishment costs	1	—	7
Gain from sale of assets	—	—	(4)
Gain from property insurance	—	—	(65)
Provision for (benefit from) deferred income taxes	(111)	23	(51)
Changes in operating assets and liabilities, net of effect of acquisitions and divestitures:			
(Increase) decrease in trade receivables	(31)	170	16
(Increase) decrease in inventories	291	(80)	(224)
Increase (decrease) in trade payables	(100)	(27)	90
Pension and other postretirement contributions (in excess of) less than expenses	(136)	(119)	(152)
Variable compensation (in excess of) less than expenses	87	38	55
Other items, net	5	(89)	45
Net cash provided by operating activities	1,455	1,504	1,543
Investing activities			
Additions to properties and equipment	(383)	(425)	(528)
Proceeds from property insurance	—	—	65
Proceeds from sale of assets and businesses	—	—	5
Acquisitions, net of cash acquired	(1)	(48)	(3)
Other items, net	(10)	(7)	(2)
Net cash used in investing activities	(394)	(480)	(463)
Financing activities			
Net increase (decrease) in commercial paper and other borrowings	(121)	(70)	(146)
Proceeds from borrowings	249	460	1,604
Repayment of borrowings	(435)	(760)	(1,774)
Dividends paid to stockholders	(358)	(343)	(318)
Treasury stock purchases	(60)	(325)	(400)
Other items, net	21	(5)	(6)
Net cash used in financing activities	(704)	(1,043)	(1,040)
Effect of exchange rate changes on cash and cash equivalents	3	(3)	(5)
Net change in cash and cash equivalents	360	(22)	35
Cash and cash equivalents at beginning of period	204	226	191
Cash and cash equivalents at end of period	$ 564	$ 204	$ 226

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

1. SIGNIFICANT ACCOUNTING POLICIES

Financial Statement Presentation

The consolidated financial statements of Eastman Chemical Company ("Eastman" or the "Company") and subsidiaries are prepared in conformity with accounting principles generally accepted ("GAAP") in the United States and of necessity include some amounts that are based upon management estimates and judgments. Future actual results could differ from such current estimates. The consolidated financial statements include assets, liabilities, sales revenue, and expenses of all majority-owned subsidiaries and joint ventures in which a controlling interest is maintained. Eastman accounts for other joint ventures and investments in minority-owned companies where it exercises significant influence on the equity basis. Intercompany transactions and balances are eliminated in consolidation. Certain prior period data has been reclassified in the consolidated financial statements and accompanying footnotes to conform to current period presentation.

Recently Adopted Accounting Standards

Accounting Standards Update ("ASU") 2016-13 Financial Instruments - Credit Losses: On January 1, 2020, Eastman adopted this standard, and related releases, under the various required transition methods. The amendments require a financial asset (including trade receivables) to be presented at the net amount expected to be collected through the use of allowances for credit losses valuation account. The income statement will reflect the measurement of credit losses for newly recognized financial assets, as well as the expected increases or decreases of expected credit losses that have taken place during the period. The adoption of this standard did not result in a material impact on the Company's financial statements and related disclosures.

ASU 2018-13 Fair Value Measurement - Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement: On January 1, 2020, Eastman adopted this standard that is a part of the Financial Accounting Standards Board's ("FASB") disclosure framework project to improve the effectiveness of disclosures in the notes to financial statements. The primary changes applicable to Eastman in this update are the disclosures of fair value levels, assessment thereof, and transfers between those levels. The adoption under the various required transition methods did not impact the Company's related disclosures.

ASU 2018-14 Retirement Benefits - Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans: In fourth quarter 2020, Eastman adopted this standard which applied the disclosures changes on a retrospective basis to all periods presented. The FASB issued this update as a part of its disclosure framework project to improve the effectiveness of disclosures in the notes to financial statements. The primary change impacting Eastman is the addition of disclosures related to significant gains and losses resulting from changes in the benefit obligation for the period and weighted-average interest crediting rates for cash balance plans. The adoption of the disclosure changes did not materially impact the Company's related disclosures. Please see Note 10, "Retirement Plans", for these disclosure changes.

ASU 2018-18 Collaborative Arrangements - Clarifying the Interaction between Topic 808 (Collaborative Arrangements) and Topic 606 (Revenue from Contracts with Customers): On January 1, 2020, Eastman adopted this standard, retrospectively to the date of the initial application of Topic 606 on January 1, 2017, that provides clarification in regards to which contracts are accounted for under Topic 808 and Topic 606 as well as alignment of guidance between the two pronouncements. The adoption of this standard did not impact the Company's financial statements and related disclosures.

ASU 2019-01 Leases - Codification Improvements: On January 1, 2020, Eastman adopted this standard which was applied as of the adoption date and under the same transition methodology of *ASU 2016-02 Lease* previously adopted on January 1, 2019. The FASB issued this update in response to stakeholder inquiries regarding the new leasing standard. The adoption of this standard did not impact the Company's financial statements and related disclosures.

ASU 2020-04 Reference Rate Reform (Topic 848) - Facilitation of the Effects of Reference Rate Reform on Financial Reporting: Eastman adopted this standard when issued and effective on March 12, 2020. The FASB issued this update to provide optional guidance for a limited period of time to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform (the global financial markets transition in contracts, hedging relationships, and other transactions away from referencing the London Interbank Offered Rate (LIBOR) and other interbank offered rates and toward new reference rates) on financial reporting. As reference reform has not impacted Eastman as of the issuance and effective date, the adoption of this standard did not impact the Company's financial statements and related disclosures.

Accounting Standards Issued But Not Adopted as of December 31, 2020

ASU 2019-12 Income Taxes - Simplifying the Accounting for Income Taxes: In December 2019, the FASB issued this update as part of its initiative to reduce complexity in accounting standards which removes certain exceptions and provides simplification to specific tax items. This standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Adoption methods vary based on the specific items impacted. Management does not expect that changes required by the new standard will materially impact the Company's financial statements and related disclosures.

ASU 2020-01 Investments - Equity Securities (Topic 321), Investments - Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815) - Clarifying the Interactions between Topic 321, Topic 323, and Topic 815: In January 2020, the FASB issued a clarification that an entity should consider observable transactions that require the application or discontinuance of the equity method of accounting for the purposes of applying the measurement alternative and clarification that certain forward contracts and purchased options to purchase securities that, upon settlement, would be accounted for under the equity method of accounting. This standard is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. The update is to be applied prospectively. Management does not expect that changes required by the new standard will materially impact the Company's financial statements and related disclosures.

Revenue Recognition

On January 1, 2018, Eastman adopted *ASU 2014-09 Revenue Recognition (ASC 606)* under the modified retrospective method, such that revenue for all periods prior to January 1, 2018 continue to be reported under the previous standard, which resulted in an increase to retained earnings of $53 million after tax for products shipped but not delivered as of December 31, 2017.

Eastman recognizes revenue when performance obligations of the sale are satisfied. Eastman sells to customers through master sales agreements or standalone purchase orders. The majority of the Company's terms of sale have a single performance obligation to transfer products. Accordingly, the Company recognizes revenue when control has been transferred to the customer, generally at the time of shipment of products.

Eastman accounts for shipping and handling as activities to fulfill the promise to transfer the good and does not allocate revenue to those activities. All related shipping and handling costs are recognized at the time of shipment. Amounts collected for sales or other similar taxes are presented net of the related tax expense rather than presenting them as additional revenue. The incremental cost of obtaining a sales contract is recognized as a selling expense when incurred given the potential amortization period for such an asset is one year or less. The possible existence of a significant financing component within a sales contract is ignored when the time between cash collection and performance is less than one year. Finally, the Company does not disclose any unfulfilled obligations as customer purchase order commitments have an original expected duration of one year or less and no consideration from customers is excluded from the transaction price.

The timing of Eastman's customer billings does not always match the timing of revenue recognition. When the Company is entitled to bill a customer in advance of the recognition of revenue, a contract liability is recognized. When the Company is not entitled to bill a customer until a period after the related recognition of revenue, a contract asset is recognized. Contract assets represent the Company's right to consideration for the exchange of goods under a contract, but which are not yet billable to a customer for consignment inventory or pursuant to certain shipping terms. Contract liabilities were $18 million and $4 million as of December 31, 2020 or December 31, 2019, respectively, and are included as a part of "Payables and other current liabilities" and "Other long-term liabilities" in the Consolidated Statements of Financial Position. Contract assets were $62 million and $65 million as of December 31, 2020 and December 31, 2019, respectively, and are included as a component of "Miscellaneous receivables" in the Consolidated Statements of Financial Position.

For additional information, see Note 19, "Segment and Regional Sales Information".

Pension and Other Postretirement Benefits

Eastman maintains defined benefit pension and other postretirement benefits plans that provide eligible employees with retirement benefits. The estimated amounts of the costs and obligations related to these benefits reflect the Company's assumptions related to discount rates, expected return on plan assets, rate of compensation increase or decrease for employees, and health care cost trends. The estimated cost of providing plan benefits also depends on demographic assumptions including retirements, mortality, turnover, and plan participation.

Eastman's pension and other postretirement benefit plans costs consist of two elements: 1) ongoing costs recognized quarterly, which are comprised of service and interest costs, expected returns on plan assets, and amortization of prior service credits; and 2) mark-to-market ("MTM") gains and losses recognized annually, in the fourth quarter of each year, primarily resulting from changes in actuarial assumptions for discount rates and the differences between actual and expected returns on plan assets. Any interim remeasurements triggered by a curtailment, settlement, or significant plan changes are recognized in the quarter in which such remeasurement event occurs.

For additional information, see Note 10, "Retirement Plans".

Environmental Costs

Eastman recognizes environmental remediation costs when it is probable that the Company has incurred a liability at a contaminated site and the amount can be reasonably estimated. When a single amount cannot be reasonably estimated but the cost can be estimated within a range, the Company recognizes the minimum undiscounted amount. This undiscounted amount reflects liabilities expected to be paid within approximately 30 years and the Company's assumptions about remediation requirements at the contaminated site, the nature of the remedy, the outcome of discussions with regulatory agencies and other potentially responsible parties at multi-party sites, and the number and financial viability of other potentially responsible parties. Changes in the estimates on which the accruals are based, unanticipated government enforcement action, or changes in health, safety, environmental, and chemical control regulations and testing requirements could result in higher or lower costs.

The Company also establishes reserves for closure and post-closure costs associated with the environmental and other assets it maintains. Environmental assets include but are not limited to waste management units, such as landfills, water treatment facilities, and surface impoundments. When these types of assets are constructed or installed, a loss contingency reserve is established for the anticipated future costs associated with the retirement or closure of the asset based on its expected life and the applicable regulatory closure requirements. The Company recognizes the asset retirement obligations in the period in which they are incurred if a reasonable estimate of fair value can be made. The asset retirement obligations are discounted to expected present value and subsequently adjusted for changes in fair value. These future estimated costs are charged to earnings over the estimated useful life of the assets. If the Company changes its estimate of the environmental asset retirement obligation costs or its estimate of the useful lives of these assets, expenses charged to earnings will be impacted. The associated estimated asset retirement costs are capitalized as part of the carrying value of the long-lived assets and depreciated over their useful life and charged to "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings.

Environmental costs are capitalized if they extend the life of the related property, increase its capacity, or mitigate the possibility of future contamination. The cost of operating and maintaining environmental control facilities is charged to "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings, as incurred.

For additional information see Note 12, "Environmental Matters and Asset Retirement Obligations".

Share-Based Compensation

Eastman recognizes compensation expense in "Selling, general and administrative expense" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings for stock options and other share-based compensation awards based upon the grant-date fair value over the substantive vesting period. For additional information, see Note 17, "Share-Based Compensation Plans and Awards".

Restructuring of Operations

Eastman records restructuring charges for costs incurred in connection with consolidation of operations, exited business or product lines, or shutdowns of specific sites that are expected to be substantially completed within twelve months. These restructuring charges are recorded as incurred, and are associated with site closures, legal and environmental matters, demolition, contract terminations, obsolete inventory, or other costs and charges directly related to the restructuring. The Company records severance charges for employee separations when the separation is probable and reasonably estimable. In the event employees are required to perform future service, the Company records severance charges ratably over the remaining service period of those employees. For additional information, see Note 15, "Asset Impairments and Restructuring Charges, Net".

Income Taxes

The provision for income taxes has been determined using the asset and liability approach of accounting for income taxes. Under this approach, deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid. The provision for income taxes represents income taxes paid or payable for the current year plus the change in deferred taxes during the year. Deferred taxes result from differences between the financial and tax bases of Eastman's assets and liabilities and are adjusted for changes in tax rates and tax laws when changes are enacted. The recoverability of our deferred tax assets are evaluated each quarter by assessing the likelihood of future profitability and available tax planning strategies that could be implemented to realize our net deferred tax assets. Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. Provision has been made for income taxes on unremitted earnings of subsidiaries and affiliates, except for subsidiaries in which earnings are deemed to be indefinitely reinvested. The calculation of income tax liabilities involves uncertainties in the application of complex tax laws and regulations, which are subject to legal interpretation and management judgment. Eastman's income tax returns are regularly examined by federal, state and foreign tax authorities, and those audits may result in proposed adjustments. The Company has evaluated these potential issues under the more-likely-than-not standard of the accounting literature. A tax position is recognized if it meets this standard and is measured at the largest amount of benefit that has a greater than 50 percent likelihood of being realized. Such judgments and estimates may change based on audit settlements, court cases and interpretation of tax laws and regulations. The Company accrues interest related to unrecognized income tax positions, which is included as a component of the income tax provision on the balance sheet.

The Company recognizes income tax positions that meet the more likely than not threshold. The accrued interest related to unrecognized income tax positions and taxes resulting from the global intangible low-tax income ("GILTI") are recorded as a component of the income tax provision.

For additional information, see Note 7, "Income Taxes".

Cash and Cash Equivalents

Cash and cash equivalents include cash, time deposits, and readily marketable securities with original maturities of three months or less.

Fair Value Measurements

Eastman records recurring and non-recurring financial assets and liabilities as well as all non-financial assets and liabilities subject to fair value measurement at the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. These fair value principles prioritize valuation inputs across three broad levels. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the Company's assumptions used to measure assets and liabilities at fair value. An asset or liability's classification within the various levels is determined based on the lowest level input that is significant to the fair value measurement.

Accounts Receivable and Allowance for Credit Losses

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. Eastman maintains allowances for estimated credit losses, which are developed at a market, country, and region level based on risk of collection as well as current and forecasted economic conditions. The Company calculates the allowance based on an assessment of the risk when the accounts receivable is recognized. Write-offs are recorded at the time a customer receivable is deemed uncollectible. Allowance for credit losses was $14 million and $11 million as of December 31, 2020 and December 31, 2019, respectively. The Company does not enter into receivables of a long-term nature, also known as financing receivables, in the normal course of business.

Inventories

Inventories measured by the last-in, first-out ("LIFO") method are valued at the lower of cost or market and inventories measured by the first-in, first-out ("FIFO") method are valued at the lower of cost or net realizable value. Eastman determines the cost of most raw materials, work in process, and finished goods inventories in the United States and Switzerland by the LIFO method. The cost of all other inventories is determined by the average cost method, which approximates the FIFO method. The Company writes-down its inventories equal to the difference between the carrying value of inventory and the estimated market value or net realizable value based upon assumptions about future demand and market conditions.

Properties

Eastman records properties at cost. Maintenance and repairs are charged to earnings; replacements and betterments are capitalized. When Eastman retires or otherwise disposes of assets, it removes the cost of such assets and related accumulated depreciation from the accounts. The Company records any profit or loss on retirement or other disposition in "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings. Asset impairments are reflected as increases in accumulated depreciation for properties that have been placed in service. In instances when an asset has not been placed in service and is impaired, the associated costs are removed from the appropriate property accounts.

Depreciation and Amortization

Depreciation expense is calculated based on historical cost and the estimated useful lives of the assets, generally using the straight-line method. Estimated useful lives for buildings and building equipment generally range from 20 to 50 years. Estimated useful lives generally ranging from 3 to 33 years are applied to machinery and equipment in the following categories: computer software (3 to 5 years); office furniture and fixtures and computer equipment (5 to 10 years); vehicles, railcars, and general machinery and equipment (5 to 20 years); and manufacturing-related improvements (20 to 33 years). Accelerated depreciation is reported when the estimated useful life is shortened and continues to be reported in "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings.

Amortization expense for definite-lived intangible assets is generally determined using a straight-line method over the estimated useful life of the asset. Amortization expense is reported in "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings.

For additional information, see Note 4, "Goodwill and Other Intangible Assets".

Impairment of Long-Lived Assets

Definite-lived Assets

Properties and equipment and definite-lived intangible assets to be held and used by Eastman are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The review of properties and equipment and the review of definite-lived intangible assets is performed at the asset group level, which is the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If the carrying amount is not considered to be recoverable, an analysis of fair value is triggered. An impairment is recognized for the excess of the carrying amount of the asset over the fair value.

Goodwill

Goodwill is an asset determined as the residual of the purchase price over the fair value of identified assets and liabilities acquired in a business combination. Eastman conducts testing of goodwill annually in the fourth quarter or more frequently when events and circumstances indicate an impairment may have occurred. The testing of goodwill is performed at the "reporting unit" level which the Company has determined to be its "components". Components are defined as an operating segment or one level below an operating segment, and in order to be a reporting unit, the component must 1) be a "business" as defined by applicable accounting standards (an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return in the form of dividends, lower costs, or other economic benefits directly to the investors or other owners, members, or participants); 2) have discrete financial information available; and 3) be reviewed regularly by Company operating segment management. The Company aggregates certain components into reporting units based on economic similarities.

A reporting unit's goodwill is considered to be impaired when the reporting unit's estimated fair value is less than its carrying value. The Company uses an income approach, including some unobservable inputs, and applies a discounted cash flow model in testing the carrying value of goodwill for each reporting unit.

Indefinite-lived Intangible Assets

Eastman conducts testing of indefinite-lived intangible assets annually in the fourth quarter or more frequently when events and circumstances indicate an impairment may have occurred. The carrying value of an indefinite-lived intangible asset is considered to be impaired when the fair value, as established by appraisal or based on discounted future cash flows of certain related products, is less than the respective carrying value.

Indefinite-lived intangible assets, consisting primarily of various tradenames, are tested for potential impairment by comparing the estimated fair value to the carrying amount. The Company uses an income approach, specifically the relief from royalty method, to test indefinite-lived intangible assets. The estimated fair value of tradenames is determined based on an assumed royalty rate savings, discounted by the calculated market participant estimated weighted average cost of capital ("WACC") plus a risk premium.

For additional information, see Note 4, "Goodwill and Other Intangible Assets".

Leases

There are two types of leases: finance and operating. Both types of leases have associated right-to-use assets and lease liabilities that are valued at the present value of the lease payments and recognized on the Consolidated Statements of Financial Position. The discount rate used in the measurement of a right-to-use asset and lease liability is the rate implicit in the lease whenever that rate is readily determinable. If the rate implicit in the lease is not readily determinable, the collateralized incremental borrowing rate is used. The Company elected the accounting policy not to apply the recognition and measurement requirements to short-term leases with a term of 12 months or less and do not include a bargain purchase option. Residual guarantee payments that become probable and estimable are recognized as rent expense over the remaining life of the applicable lease.

For lease accounting policies, see Note 11, "Leases and Other Commitments".

Investments

The consolidated financial statements include the accounts of Eastman and all its subsidiaries and entities or joint ventures in which a controlling interest is maintained. The Company includes its share of earnings and losses of such investments in "Net earnings attributable to Eastman" and "Comprehensive income attributable to Eastman" located in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings and in "Total equity" located in the Consolidated Statements of Financial Position.

Investments in affiliates over which the Company has significant influence but not a controlling interest are carried on the equity basis. Under the equity method of accounting, these investments are included in "Other noncurrent assets" in the Consolidated Statements of Financial Position. The Company includes its share of earnings and losses of such investments in "Other (income) charges, net" located in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings. For additional information, see Note 5, "Equity Investments".

Derivative and Non-Derivative Financial Instruments

Eastman uses derivative and non-derivative instruments to manage its exposure to market risks, such as changes in foreign currency exchange rates, commodity prices, and interest rates. The Company does not enter into derivative transactions for speculative purposes.

The Company's derivative instruments are recognized as either assets or liabilities on the Consolidated Statements of Financial Position and measured at fair value. Hedge accounting will be discontinued prospectively for all hedges that no longer qualify for hedge accounting treatment.

For additional information, see Note 9, "Derivative and Non-Derivative Financial Instruments".

Litigation and Contingent Liabilities

From time to time, Eastman and its operations are parties to or targets of lawsuits, claims, investigations and proceedings, including product liability, personal injury, asbestos, patent and intellectual property, commercial, contract, environmental, antitrust, health and safety, and employment matters, which are handled and defended in the ordinary course of business. The Company accrues a contingent loss liability for such matters when it is probable that a liability has been incurred and the amount can be reasonably estimated. When a single amount cannot be reasonably estimated but the cost can be estimated within a range, the Company accrues the minimum amount. The Company expenses legal costs, including those expected to be incurred in connection with a loss contingency, as incurred.

Working Capital Management and Off Balance Sheet Arrangements

The Company has an off balance sheet, uncommitted accounts receivable factoring program under which entire invoices may be sold, without recourse, to third-party financial institutions. Under these agreements, the Company sells the invoices at face value, less a transaction fee, which substantially equals the carrying value and fair value with no gain or loss recognized and no credit loss exposure is retained. Available capacity under these agreements, which the Company uses as a routine source of working capital funding, is dependent on the level of accounts receivable eligible to be sold and the financial institutions' willingness to purchase such receivables. In addition, certain agreements also require that the Company continue to service, administer, and collect the sold accounts receivable at market rates. The total amount of receivables sold in 2020 and 2019 were $1.5 billion and $0.9 billion, respectively.

The Company works with suppliers to optimize payment terms and conditions on accounts payable to enhance timing of working capital and cash flows. As part of these efforts, in 2019 the Company introduced a voluntary supply chain finance program to provide suppliers with the opportunity to sell receivables due from Eastman to a participating financial institution. Eastman's responsibility is limited to making payments on the terms originally negotiated with suppliers, regardless of whether the suppliers sell their receivables to the financial institution. The range of payment terms Eastman negotiates with suppliers are consistent, regardless of whether a supplier participates in the program. All of Eastman's accounts payable and associated payments are reported consistently in the Company's Consolidated Statements of Financial Position and Consolidated Statements of Cash Flows regardless of whether they are associated with a vendor who participates in the program.

2. INVENTORIES

	December 31,	
(Dollars in millions)	2020	2019
Finished goods	$ 891	$ 1,114
Work in process	203	220
Raw materials and supplies	511	576
Total inventories at FIFO or average cost	1,605	1,910
Less: LIFO reserve	226	248
Total inventories	$ 1,379	$ 1,662

Inventories valued on the LIFO method were approximately 50 percent of total inventories at both December 31, 2020 and December 31, 2019. In 2020, a $13 million LIFO decrement was recognized due to inventory reduction actions, resulting in an increase to "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings and a decrease to "Inventories" in the Consolidated Statements of Financial Position.

3. PROPERTIES AND ACCUMULATED DEPRECIATION

(Dollars in millions)	December 31, 2020	2019
Properties		
Land	$ 163	$ 158
Buildings	1,824	1,450
Machinery and equipment	11,494	11,117
Construction in progress	50	356
Properties and equipment at cost	$ 13,531	$ 13,081
Less: Accumulated depreciation	7,982	7,510
Net properties	$ 5,549	$ 5,571

Depreciation expense was $445 million, $450 million, and $437 million for 2020, 2019, and 2018, respectively.

Cumulative construction-period interest of $100 million and $98 million, reduced by accumulated depreciation of $41 million and $38 million, is included in net properties at December 31, 2020 and 2019, respectively.

Eastman capitalized $4 million of interest in 2020, 2019, and 2018.

4. GOODWILL AND OTHER INTANGIBLE ASSETS

Changes in the carrying amount of goodwill follow:

(Dollars in millions)	Additives & Functional Products	Advanced Materials	Chemical Intermediates	Other	Total
Balance at December 31, 2018	$ 2,410	$ 1,283	$ 764	$ 10	$ 4,467
Acquisitions	15	—	—	—	15
Impairments recognized	(45)	—	—	—	(45)
Currency translation adjustments	(3)	(1)	(2)	—	(6)
Balance at December 31, 2019	2,377	1,282	762	10	4,431
Currency translation adjustments	20	10	4	—	34
Balance at December 31, 2020	$ 2,397	$ 1,292	$ 766	$ 10	$ 4,465

The Company uses an income approach and applies a discounted cash flow model in testing the carrying value of goodwill for each reporting unit. Key assumptions and estimates used in the Company's 2020 goodwill impairment testing included projections of revenues and earnings before interest and taxes ("EBIT") determined using the Company's annual multi-year strategic plan, the estimated WACC, and a projected long-term growth rate. As a result of the annual goodwill impairment testing performed during fourth quarter 2020, fair values were determined to substantially exceed the carrying values for each reporting unit tested with the exception of tire additives (part of the Additives & Functional Products ("AFP") segment).

In fourth quarter 2019, as a result of the annual impairment test of goodwill, the Company recognized goodwill impairments of $45 million in the crop protection reporting unit. The impairment was primarily due to the impact of regulatory changes in the European Union on current period and forecasted revenue and EBIT and a decrease in the long-term growth rate for the reporting unit assumed in the goodwill impairment model. The crop protection reporting unit's goodwill after the reduction for impairment was $190 million as of December 31, 2019. In first quarter 2020, the crop protection reporting unit combined with the care chemicals reporting unit as a result of business management realignment.

As of December 31, 2020 and 2019, the reported balance of goodwill included accumulated impairment losses of $106 million, $12 million, and $14 million in the AFP segment, Chemical Intermediates ("CI") segment, and other segments, respectively.

The carrying amounts of intangible assets follow:

		December 31, 2020			December 31, 2019		
(Dollars in millions)	Estimated Useful Life in Years	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Amortizable intangible assets:							
Customer relationships	8 - 25	$ 1,589	$ 571	$ 1,018	$ 1,566	$ 494	$ 1,072
Technology	7 - 20	687	392	295	677	343	334
Tradenames	25	44	2	42	—	—	—
Other	18 - 37	86	23	63	88	22	66
Indefinite-lived intangible assets:							
Tradenames		364	—	364	529	—	529
Other		10	—	10	10	—	10
Total identified intangible assets		$ 2,780	$ 988	$ 1,792	$ 2,870	$ 859	$ 2,011

In second quarter 2020, outside of the annual impairment testing process, the Company reviewed the indefinite-lived intangible assets associated with the tire additives reporting unit for impairment. As a result of the review, the Company recognized intangible asset impairments of $123 million in second quarter 2020 in the tire additives reporting unit to reduce the carrying value of the Crystex™ and Santoflex™ tradenames to the estimated fair value. The impairments are primarily the result of weakened demand in transportation end markets impacted by the COVID-19 coronavirus global pandemic ("COVID-19") and increased competitive pricing pressure as a result of global capacity increases. Amortization began in third quarter 2020 for the remaining value of the Crystex™ tradename of $42 million. Additional declines in the market conditions or forecasted revenue could result in additional impairment of indefinite-lived intangible assets.

Amortization expense of definite-lived intangible assets was $128 million, $160 million, and $164 million for 2020, 2019, and 2018, respectively. Estimated amortization expense for future periods is $125 million in 2021, $115 million in each year for 2022 through 2024, and $110 million for 2025.

The Company will continue to monitor both goodwill and indefinite-lived intangible assets for any indication of events which might require additional testing before the next annual impairment test and could result in material impairment charges.

5. EQUITY INVESTMENTS

Eastman owns a 50 percent or less interest in joint ventures which are accounted for under the equity method. These include a 45 percent interest in a joint venture with China National Tobacco Corporation that manufactures acetate tow in Hefei, China. The Company owns a 50 percent interest in a joint venture that has a manufacturing facility in Nanjing, China. The Nanjing facility produces Eastotac™ hydrocarbon tackifying resins for pressure-sensitive adhesives, caulks, and sealants. These also include a joint venture with a 50 percent interest for the manufacture of compounded cellulose diacetate ("CDA") in Shenzhen, China. CDA is a bio-derived material, which is used in various injection molded applications, including but not limited to ophthalmic frames, tool handles, and other end-use products. At December 31, 2020 and 2019, the Company's total investment in these joint ventures was $111 million and $106 million, respectively, included in "Other noncurrent assets" in the Consolidated Statements of Financial Position.

6. PAYABLES AND OTHER CURRENT LIABILITIES

(Dollars in millions)	December 31, 2020	2019
Trade creditors	$ 799	$ 890
Accrued payrolls, vacation, and variable-incentive compensation	228	176
Accrued taxes	178	89
Post-employment obligations	138	93
Dividends payable to shareholders	94	90
Other	252	280
Total payables and other current liabilities	$ 1,689	$ 1,618

The "Other" above consists primarily of accruals for the current portion of operating lease liabilities, interest payable, the current portion of derivative hedging liabilities, the current portion of environmental liabilities, and miscellaneous accruals.

7. INCOME TAXES

Components of earnings before income taxes and the provision for U.S. and other income taxes from operations follow:

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Earnings before income taxes			
United States	$ 164	$ 454	$ 718
Outside the United States	366	448	592
Total	$ 530	$ 902	$ 1,310
Provision for income taxes			
United States Federal			
Current	$ 70	$ 55	$ 161
Deferred	(96)	19	(11)
Outside the United States			
Current	77	62	86
Deferred	(14)	(32)	(22)
State and other			
Current	5	—	30
Deferred	(1)	36	(18)
Total	$ 41	$ 140	$ 226

The following represents the deferred tax (benefit) charge recorded as a component of "Accumulated other comprehensive income (loss)" ("AOCI") in the Consolidated Statements of Financial Position:

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Defined benefit pension and other postretirement benefit plans	$ (7)	$ (10)	$ (10)
Derivatives and hedging	(4)	(2)	3
Total	$ (11)	$ (12)	$ (7)

Total income tax expense (benefit) included in the consolidated financial statements was composed of the following:

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Earnings before income taxes	$ 41	$ 140	$ 226
Other comprehensive income	(11)	(12)	(7)
Total	$ 30	$ 128	$ 219

Differences between the provision for income taxes and income taxes computed using the U.S. Federal statutory income tax rate follow:

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Amount computed using the statutory rate	$ 109	$ 189	$ 274
State income taxes, net	2	36	6
Foreign rate variance	(49)	(68)	(52)
Change in reserves for tax contingencies	4	36	21
General business credits	(39)	(52)	(60)
U.S. tax on foreign earnings	13	(17)	10
Foreign tax credits	—	—	(12)
Tax law changes and tax loss from outside-U.S. entity reorganizations	—	7	20
Other	1	9	19
Provision for income taxes	$ 41	$ 140	$ 226
Effective income tax rate	8 %	16 %	17 %

The 2020 effective tax rate includes a $27 million decrease to the provision for income taxes as a result of a decrease in previously unrecognized tax positions and a $7 million decrease to the provision for income taxes related to adjustments to certain prior year tax returns.

The 2019 effective tax rate includes a $7 million increase to the provision for income taxes resulting from adjustments to the net tax benefit recognized in fourth quarter 2017 resulting from tax law changes, primarily the 2017 Tax Cuts and Jobs Act (the "Tax Reform Act"). The 2019 effective tax rate also includes adjustments to the tax provision to reflect finalization of prior year's income tax returns and an increase to state income taxes related to additional valuation allowance provided against state income tax credits.

The 2018 effective tax rate included the impact of the U.S. corporate tax rate reduction resulting from the Tax Reform Act and the repeal of the domestic manufacturing deduction. The 2018 effective tax rate also included a $20 million increase to the provision for income taxes resulting from adjustments to the net tax benefit recognized in fourth quarter 2017 resulting from tax law changes, primarily the Tax Reform Act. These adjustments related to the one-time transition tax on deferred foreign income and changes in valuation of deferred tax assets associated with tax law changes and outside-U.S. entity reorganizations as part of the formation of an international treasury services center.

Income tax incentives, in the form of tax holidays, have been granted to the Company in certain jurisdictions to attract investment and encourage industrial development. The expiration of these tax holidays varies by country. The tax holidays are conditional on the Company meeting certain requirements, including employment and investment thresholds; determination of compliance with these conditions may be subject to challenge by tax authorities in those jurisdictions. No individual tax holiday had a material impact to the Company’s earnings in 2020, 2019, or 2018.

The significant components of deferred tax assets and liabilities follow:

	December 31,	
(Dollars in millions)	2020	2019
Deferred tax assets		
Post-employment obligations	$ 280	$ 247
Net operating loss carryforwards	619	606
Tax credit carryforwards	216	239
Environmental contingencies	68	68
Unrealized derivative loss	22	18
Other	213	173
Total deferred tax assets	1,418	1,351
Less: Valuation allowance	393	453
Deferred tax assets less valuation allowance	$ 1,025	$ 898
Deferred tax liabilities		
Property, plant, and equipment	$ (893)	$ (895)
Intangible assets	(388)	(439)
Investments	(305)	(235)
Other	(175)	(178)
Total deferred tax liabilities	$ (1,761)	$ (1,747)
Net deferred tax liabilities	$ (736)	$ (849)
As recorded in the Consolidated Statements of Financial Position:		
Other noncurrent assets	$ 112	$ 66
Deferred income tax liabilities	(848)	(915)
Net deferred tax liabilities	$ (736)	$ (849)

All foreign earnings, with the exception of short-term liquid assets on certain foreign subsidiaries, including basis differences, continue to be considered indefinitely reinvested. As of December 31, 2020, unremitted earnings of subsidiaries outside the U.S. totaled approximately $2.7 billion of which a substantial portion has already been subject to U.S. tax. The Company has not determined the deferred tax liability associated with these unremitted earnings and basis differences, as such determination is not practicable.

For certain consolidated foreign subsidiaries, income and losses directly flow through to taxable income in the U.S. These entities are also subject to taxation in the foreign tax jurisdictions. Net operating loss carryforwards exist to offset future taxable income in foreign tax jurisdictions and valuation allowances are provided to reduce deferred related tax assets if it is more likely than not that this benefit will not be realized. Changes in the estimated realizable amount of deferred tax assets associated with net operating losses for these entities could result in changes in the deferred tax asset valuation allowance in the foreign tax jurisdiction. At the same time, because these entities are also subject to tax in the U.S., a deferred tax liability for the expected future taxable income will be established concurrently. Therefore, the impact of any reversal of valuation allowances on consolidated income tax expense will be only to the extent that there are differences between the U.S. statutory tax rate and the tax rate in the foreign jurisdiction. A valuation allowance of $29 million at December 31, 2020 has been provided against the deferred tax asset resulting from these operating loss carryforwards.

At December 31, 2020, foreign net operating loss carryforwards totaled $2.2 billion. Of this total, $700 million will expire in 1 to 20 years and $1.5 billion have no expiration date. A valuation allowance of approximately $217 million has been provided against such net operating loss carryforwards.

At December 31, 2020, federal net operating loss carryforwards of $3 million were available to offset future taxable income, which expire from 2028 to 2030. At December 31, 2020, foreign tax credit carryforwards of approximately $56 million were available to reduce possible future U.S. income taxes and which expire from 2021 to 2030. As a result of the Tax Reform Act, the Company may no longer be able to utilize certain U.S. foreign tax credit carryforwards. A valuation allowance of $24 million has been established on a portion of deferred tax assets as of December 31, 2020.

At December 31, 2020, a partial valuation allowance of $72 million has been provided against state tax credits that the Company may not be able to utilize.

A partial valuation allowance of $47 million has been established for the Solutia, Inc. ("Solutia") state net operating loss carryforwards. The valuation allowance will be retained until there is sufficient positive evidence to conclude that it is more likely than not that the deferred tax assets will be realized, or the related statute expires.

Amounts due to and from tax authorities as recorded in the Consolidated Statements of Financial Position:

	December 31,	
(Dollars in millions)	2020	2019
Miscellaneous receivables	$ 311	$ 211
Payables and other current liabilities	$ 147	$ 36
Other long-term liabilities	83	139
Total income taxes payable	$ 230	$ 175

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

(Dollars in millions)	2020	2019	2018
Balance at January 1	$ 202	$ 182	$ 142
Adjustments based on tax positions related to current year	14	25	9
Adjustments based on tax positions related to prior years	63	(3)	35
Lapse of statute of limitations	(22)	(2)	(4)
Balance at December 31 (1)	$ 257	$ 202	$ 182

(1) All of the unrecognized tax benefits would, if recognized, impact the Company's effective tax rate.

A reconciliation of the beginning and ending amounts of accrued interest related to unrecognized tax positions is as follows:

(Dollars in millions)	2020	2019	2018
Balance at January 1	$ 13	$ 10	$ 6
Expense for interest, net of tax	5	5	4
Income for interest, net of tax	(5)	(2)	—
Balance at December 31	$ 13	$ 13	$ 10

Accrued penalties related to unrecognized tax positions were immaterial as of December 31, 2020, 2019, and 2018.

Eastman files federal income tax returns in the U.S. and income tax returns in various state and foreign jurisdictions. The Company is no longer subject to U.S. Federal income tax examinations by tax authorities for years before 2012 for Eastman legal entities and years before 2002 for Solutia legal entities. With few exceptions, Eastman is no longer subject to state and local income tax examinations by tax authorities for years before 2012. Solutia and related subsidiaries are no longer subject to state and local income tax examinations for years before 2000. With few exceptions, the Company is no longer subject to foreign income tax examinations by tax authorities for tax years before 2012.

It is reasonably possible that, as a result of the resolution of federal, state, and foreign examinations and appeals, and the expiration of various statutes of limitation, unrecognized tax benefits could decrease within the next twelve months by up to $120 million.

8. BORROWINGS

(Dollars in millions)	December 31, 2020	December 31, 2019
Borrowings consisted of:		
4.5% notes due January 2021	$ —	$ 185
3.5% notes due December 2021	299	298
3.6% notes due August 2022	744	741
1.50% notes due May 2023 [(1)]	919	840
7 1/4% debentures due January 2024	198	198
7 5/8% debentures due June 2024	43	43
3.8% notes due March 2025	701	695
1.875% notes due November 2026 [(1)]	609	556
7.60% debentures due February 2027	195	195
4.5% notes due December 2028	493	493
4.8% notes due September 2042	493	493
4.65% notes due October 2044	874	874
Commercial paper and short-term borrowings	50	171
Total borrowings	5,618	5,782
Borrowings due within one year	349	171
Long-term borrowings	$ 5,269	$ 5,611

(1) The carrying value of the euro-denominated 1.50% notes due May 2023 and 1.875% notes due November 2026 will fluctuate with changes in the euro exchange rate. The carrying value of these euro-denominated borrowings have been designated as non-derivative net investment hedges of a portion of the Company's net investments in euro functional-currency denominated subsidiaries to offset foreign currency fluctuations.

In fourth quarter 2020, the Company repaid the 4.5% notes due January 2021 ($185 million principal) using available cash. There were no material debt extinguishment costs associated with the early repayment of this debt. The total consideration for this redemption is reported under financing activities on the Consolidated Statement of Cash Flows.

In fourth quarter 2019, the Company repaid the 2.7% notes due January 2020 ($250 million principal) using available cash. There were no material debt extinguishment costs associated with the early repayment of this debt. The total consideration for this redemption is reported under financing activities on the Consolidated Statements of Cash Flows.

Loan Agreement, Credit Facility, and Commercial Paper Borrowings

In second quarter 2020, the Company borrowed $250 million under a new 364-Day Term Loan Credit Agreement (the "Term Loan") as a precautionary measure due to increased financial market volatility, particularly in the availability and terms of commercial paper, resulting from COVID-19. In third quarter 2020, the Term Loan was repaid using available cash. The early repayment resulted in a charge of $1 million for early debt extinguishment costs which was primarily attributable to related unamortized issuance costs.

The Company has access to a $1.50 billion revolving credit agreement (the "Credit Facility") expiring October 2023. Borrowings under the Credit Facility are subject to interest at varying spreads above quoted market rates and a commitment fee is paid on the total unused commitment. The Credit Facility provides available liquidity for general corporate purposes and supports commercial paper borrowings. Commercial paper borrowings are classified as short-term. In first quarter 2020, the Company borrowed a total of $400 million under the Credit Facility. In second quarter 2020, the Company repaid a total of $400 million using available cash. At December 31, 2020 and December 31, 2019, the Company had no outstanding borrowings under the Credit Facility. At December 31, 2020, the Company's commercial paper borrowings were $50 million with a weighted average interest rate of 0.25 percent. At December 31, 2019, the Company's commercial paper borrowings were $170 million with a weighted average interest rate of 2.03 percent.

The Credit Facility contains customary covenants, including requirements to maintain certain financial ratios, that determine the events of default, amounts available, and terms of borrowings. In second quarter 2020, the Company amended the Credit Facility and the Term Loan maximum debt covenants to reflect the higher cash balance to enhance liquidity due to, and the expected negative impact on operating results of, COVID-19 and added a new restrictive covenant prohibiting stock repurchases until June 30, 2021 in the event certain financial ratios are exceeded. The Company was in compliance with all applicable covenants at both December 31, 2020 and December 31, 2019.

The Company did not renew the $250 million accounts receivable securitization agreement (the "A/R Facility") which expired April 2020. Eastman Chemical Financial Corporation ("ECFC"), a subsidiary of the Company, had an agreement to sell interests in trade receivables under the A/R Facility to a third party purchaser. Third party creditors of ECFC had first priority claims on the assets of ECFC before those assets would be available to satisfy the Company's general obligations. Borrowings under the A/R Facility were subject to interest rates based on a spread over the lender's borrowing costs and ECFC paid a fee to maintain availability of the A/R Facility. In first quarter 2020, the Company borrowed a total of $350 million, in two tranches, under the A/R Facility and repaid a total of $350 million using available cash. At December 31, 2019, the Company had no borrowings outstanding under the A/R Facility.

Fair Value of Borrowings

Eastman has classified its total borrowings at December 31, 2020 and 2019 under the fair value hierarchy as defined in the accounting policies in Note 1, "Significant Accounting Policies". The fair value for fixed-rate debt securities is based on quoted market prices for the same or similar debt instruments and is classified as Level 2. The fair value for the Company's other borrowings primarily under the commercial paper and receivables facility equals the carrying value and is classified as Level 2. At December 31, 2020 and 2019, the fair value of total borrowings was $6.449 billion and $6.275 billion, respectively. The Company had no borrowings classified as Level 1 or Level 3 as of December 31, 2020 and 2019.

9. DERIVATIVE AND NON-DERIVATIVE FINANCIAL INSTRUMENTS

Overview of Hedging Programs

Eastman is exposed to market risks, such as changes in foreign currency exchange rates, commodity prices, and interest rates. To mitigate these market risks and their effects on the cash flows of the underlying transactions and investments in foreign subsidiaries, the Company uses various derivative and non-derivative financial instruments, when appropriate, in accordance with the Company's hedging strategy and policies. Designation is performed on a specific exposure basis to support hedge accounting. The Company does not enter into derivative transactions for speculative purposes.

Cash Flow Hedges

Cash flow hedges are derivative instruments designated as and used to hedge the exposure to variability in expected future cash flows that are attributable to a particular risk. The derivative instruments that are designated and qualify as a cash flow hedge are reported on the balance sheet at fair value and the changes in fair value of these hedging instruments are offset in part or in whole by corresponding changes in the anticipated cash flows of the underlying exposures being hedged. The change in the hedge instrument is reported as a component of AOCI located in the Consolidated Statements of Financial Position and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Cash flows from cash flow hedges are classified as operating activities in the Consolidated Statements of Cash Flows.

Foreign Currency Exchange Rate Hedging

Eastman manufactures and sells its products in a number of countries throughout the world and, as a result, is exposed to changes in foreign currency exchange rates. To manage the volatility relating to these exposures, the Company nets the exposures on a consolidated basis to take advantage of natural offsets. To manage the remaining exposure, the Company enters into currency option and forward cash flow hedges to hedge probable anticipated, but not yet committed, export sales and purchase transactions expected within a rolling three year period and denominated in foreign currencies (principally the euro). Additionally, the Company, from time to time, enters into forward exchange contract cash flow hedges to hedge certain firm commitments denominated in foreign currencies.

Commodity Hedging

Certain raw material and energy sources used by Eastman, as well as sales of certain commodity products by the Company, are subject to price volatility caused by weather, supply and demand conditions, economic variables and other unpredictable factors. This volatility is primarily related to the market pricing of propane, ethane, natural gas, paraxylene, ethylene, and benzene. In order to mitigate expected fluctuations in market prices, from time to time, the Company enters into option and forward contracts and designates these contracts as cash flow hedges. The Company currently hedges commodity price risks using derivative financial instrument transactions within a rolling three year period. The Company weights its hedge portfolio more heavily in the first year with declining coverage over the remaining periods.

Interest Rate Hedging

Eastman's policy is to manage interest expense using a mix of fixed and variable rate debt. To manage interest rate risk effectively, the Company, from time to time, enters into cash flow interest rate derivative instruments, primarily forward starting swaps and treasury locks, to hedge the Company's exposure to movements in interest rates prior to anticipated debt offerings. These instruments are designated as cash flow hedges.

In first, second, and third quarters 2020, Eastman entered into forward-starting interest rate swaps with a notional amount of $25 million in each period to mitigate the risk of variability in interest rates for an expected long-term debt issuance by August 2022. These swaps were designated as cash flow hedges and will be settled upon debt issuance. The total outstanding forward starting swaps as of December 31, 2020 was $75 million.

Fair Value Hedges

Fair value hedges are defined as derivative or non-derivative instruments designated as and used to hedge the exposure to changes in the fair value of an asset or a liability or an identified portion thereof that is attributable to a particular risk. The derivative instruments that are designated and qualify as fair value hedges are reported as "Long-term borrowings" on the Consolidated Statements of Financial Position at fair value and the changes in fair value of these hedging instruments are offset in part or in whole by corresponding changes in the anticipated fair value of the underlying exposures being hedged. The net of the change in the hedge instrument and item being hedged for qualifying fair value hedges is recognized in earnings in the same period or periods during which the hedged transaction affects earnings. Cash flows from fair value hedges are classified as operating activities in the Consolidated Statements of Cash Flows.

Interest Rate Hedging

Eastman's policy is to manage interest expense using a mix of fixed and variable rate debt. To manage the Company's mix of fixed and variable rate debt effectively, from time to time, the Company enters into interest rate swaps in which the Company agrees to exchange the difference between fixed and variable interest amounts calculated by reference to an agreed upon notional principal amount. These swaps are designated as hedges of the fair value of the underlying debt obligations and the interest rate differential is reflected as an adjustment to interest expense over the life of the swaps.

Net Investment Hedges

Net investment hedges are defined as derivative or non-derivative instruments designated as and used to hedge the foreign currency exposure of the net investment in certain foreign operations. The net of the change in the hedge instrument and item being hedged for qualifying net investment hedges is reported as a component of the "Cumulative Translation Adjustment" ("CTA") within AOCI located in the Consolidated Statements of Financial Position. Cash flows from the CTA component are classified as operating activities in the Consolidated Statement of Cash Flows. Recognition in earnings of amounts previously recognized in CTA is limited to circumstances such as complete or substantially complete liquidation of the net investment in the hedged foreign operation. In the event of a complete or substantially complete liquidation of the net investment, cash flows from net investment hedges are classified as investing activities in the Consolidated Statements of Cash Flows.

For derivative cross-currency interest rate swap net investment hedges, gains and losses representing hedge components excluded from the assessment of effectiveness are recognized in CTA within AOCI and recognized in earnings through the periodic swap interest accruals. The cross-currency interest rate swaps designated as net investment hedges are included as part of "Other long-term liabilities" or "Other noncurrent assets" within the Consolidated Statements of Financial Position. Cash flows from excluded components are classified as operating activities in the Consolidated Statements of Cash Flows.

In September 2020, the Company terminated fixed-to-fixed cross-currency swaps designated to hedge a portion of its net investment in a euro functional currency denominated subsidiary against foreign currency fluctuations. The notional amount terminated was €150 million ($180 million) which was scheduled to mature in January 2021. The termination resulted in a $3 million gain recognized in CTA. The related cash flows were classified as investing activities in the Consolidated Statements of Cash Flows.

In September 2020, the Company entered into fixed-to-fixed cross-currency swaps and designated these swaps to hedge a portion of its net investment in a euro functional currency denominated subsidiary against foreign currency fluctuations. These contracts involve the exchange of fixed U.S. dollars with fixed euro interest payments periodically over the life of the contracts and an exchange of the notional amounts at maturity. The fixed-to-fixed cross-currency swaps include €152 million ($180 million) maturing December 2028.

Summary of Financial Position and Financial Performance of Hedging Instruments

The following table presents the notional amounts outstanding at December 31, 2020 and 2019 associated with Eastman's hedging programs.

Notional Outstanding	**December 31, 2020**	**December 31, 2019**
Derivatives designated as cash flow hedges:		
Foreign Exchange Forward and Option Contracts (in millions)		
EUR/USD (in EUR)	€521	€630
Commodity Forward and Collar Contracts		
Feedstock (in million barrels)	—	1
Energy (in million british thermal units)	17	27
Interest rate swaps for the future issuance of debt (in millions)	75	—
Derivatives designated as fair value hedges:		
Fixed-for-floating interest rate swaps (in millions)	$75	$75
Derivatives designated as net investment hedges:		
Cross-currency interest rate swaps (in millions)		
EUR/USD (in EUR)	€853	€851
Non-derivatives designated as net investment hedges:		
Foreign Currency Net Investment Hedges (in millions)		
EUR/USD (in EUR)	€1,245	€1,243

Fair Value Measurements

For additional information on fair value measurement, see Note 1, "Significant Accounting Policies".

All the Company's derivative assets and liabilities are currently classified as Level 2. Level 2 fair value is based on estimates using standard pricing models. These standard pricing models use inputs that are derived from or corroborated by observable market data such as interest rate yield curves and currency spot and forward rates. The fair value of commodity contracts is derived using forward curves supplied by an industry recognized and unrelated third party. In addition, on an ongoing basis, the Company tests a subset of its valuations against valuations received from the transaction's counterparty to validate the accuracy of its standard pricing models. The Company had no derivatives classified as Level 1 or Level 3 as of December 31, 2020 or December 31, 2019. Counterparties to these derivative contracts are highly rated financial institutions which the Company believes carry minimal risk of nonperformance and the Company diversifies its positions among such counterparties to reduce its exposure to counterparty risk and credit losses. The Company monitors the creditworthiness of its counterparties on an ongoing basis. The Company did not realize a credit loss during the years ended December 31, 2020 or 2019.

All the Company's derivative contracts are subject to master netting arrangements, or similar agreements, which provide for the option to settle contracts on a net basis when they settle on the same day and in the same currency. In addition, these arrangements provide for a net settlement of all contracts with a given counterparty in the event that the arrangement is terminated due to the occurrence of default or a termination event. The Company does not have any cash collateral due under such agreements.

The Company has elected to present derivative contracts on a gross basis within the Consolidated Statements of Financial Position. The following table presents the financial assets and liabilities valued on a recurring and gross basis and includes where the financial assets and liabilities are located within the Consolidated Statements of Financial Position as of December 31, 2020 and 2019.

The Financial Position and Fair Value Measurements of Hedging Instruments on a Gross Basis

(Dollars in millions)

Derivative Type	Statements of Financial Position Location	December 31, 2020 Level 2	December 31, 2019 Level 2
Derivatives designated as cash flow hedges:			
Commodity contracts	Other current assets	$ 1	$ —
Foreign exchange contracts	Other current assets	—	13
Foreign exchange contracts	Other noncurrent assets	—	2
Forward starting interest rate swap contracts	Other noncurrent assets	1	—
Derivatives designated as fair value hedges:			
Fixed-for-floating interest rate swap	Other current assets	1	1
Fixed-for-floating interest rate swap	Other noncurrent assets	4	—
Derivatives designated as net investment hedges:			
Cross-currency interest rate swaps	Other noncurrent assets	40	68
Total Derivative Assets		$ 47	$ 84
Derivatives designated as cash flow hedges:			
Commodity contracts	Payables and other current liabilities	$ 6	$ 26
Commodity contracts	Other long-term liabilities	—	2
Foreign exchange contracts	Payables and other current liabilities	21	1
Foreign exchange contracts	Other long-term liabilities	14	2
Derivatives designated as fair value hedges:			
Fixed-for-floating interest rate swap	Long-term borrowings	—	1
Derivatives designated as net investment hedges:			
Cross-currency interest rate swaps	Other long-term liabilities	51	—
Total Derivative Liabilities		$ 92	$ 32
Total Net Derivative Assets (Liabilities)		$ (45)	$ 52

In addition to the fair value associated with derivative instruments designated as cash flow hedges, fair value hedges, and net investment hedges noted in the table above, the Company had a carrying value of $1.5 billion and $1.4 billion associated with non-derivative instruments designated as foreign currency net investment hedges as of December 31, 2020 and December 31, 2019, respectively. The designated foreign currency-denominated borrowings are included as part of "Long-term borrowings" within the Consolidated Statements of Financial Position.

As of December 31, 2020 and 2019, the following amounts were included within the Consolidated Statements of Financial Position related to cumulative basis adjustments for fair value hedges.

(Dollars in millions)	Carrying amount of the hedged liabilities		Cumulative amount of fair value hedging loss adjustment included in the carrying amount of the hedged liability	
Line item in the Consolidated Statements of Financial Position in which the hedged item is included	**December 31, 2020**	**December 31, 2019**	**December 31, 2020**	**December 31, 2019**
Long-term borrowings [(1)]	$ 772	$ 763	$ (1)	$ (7)

(1) The cumulative amount of fair value hedging loss adjustment remaining for hedged liabilities for which hedge accounting has been discontinued was $5 million and $7 million at December 31, 2020 and December 31, 2019, respectively.

The following table presents the effect of the Company's hedging instruments on Other comprehensive income (loss), net of tax ("OCI") and financial performance for the twelve months ended December 31, 2020 and 2019:

(Dollars in millions)	Change in amount of after tax gain/(loss) recognized in OCI on Derivatives		Pre-tax amount of gain/(loss) reclassified from AOCI into income	
	December 31,		December 31,	
Hedging Relationships	**2020**	**2019**	**2020**	**2019**
Derivatives in cash flow hedging relationships:				
Commodity contracts	$ 17	$ (2)	$ (31)	$ (40)
Foreign exchange contracts	(36)	(5)	9	26
Forward starting interest rate and treasury lock swap contracts	8	4	(9)	(6)
Non-derivatives in net investment hedging relationships (pre-tax):				
Net investment hedges	(130)	26	—	—
Derivatives in net investment hedging relationships (pre-tax):				
Cross-currency interest rate swaps	(88)	19	—	—
Cross-currency interest rate swaps excluded component	10	23	—	—

The following table presents the effect of fair value and cash flow hedge accounting on the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings for 2020 and 2019.

Location and Amount of Gain or (Loss) Recognized in Earnings on Fair Value and Cash Flow Hedging Relationships

	Twelve Months					
	2020			2019		
(Dollars in millions)	Sales	Cost of Sales	Net interest expense	Sales	Cost of Sales	Net interest expense
Total amounts of income and expense line items presented in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings in which the effects of fair value or cash flow hedges are recognized	$ 8,473	$ 6,498	$ 210	$ 9,273	$ 7,039	$ 218
The effects of fair value and cash flow hedging:						
Gain or (loss) on fair value hedging relationships:						
Interest contracts (fixed-for-floating interest rate swaps):						
Hedged items			1			1
Derivatives designated as hedging instruments			(1)			(1)
Gain or (loss) on cash flow hedging relationships:						
Interest contracts (forward starting interest rate and treasury lock swap contracts):						
Amount reclassified from AOCI into earnings			(9)			(6)
Commodity Contracts:						
Amount reclassified from AOCI into earnings		(31)			(40)	
Foreign Exchange Contracts:						
Amount reclassified from AOCI into earnings	9			26		

The Company enters into foreign exchange derivatives denominated in multiple currencies which are transacted and settled in the same quarter. These derivatives are not designated as hedges due to the short-term nature and the gains or losses on these derivatives are marked-to-market in line item "Other (income) charges, net" of the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings. The Company recognized net losses of $1 million and $2 million in 2020 and 2019, respectively, on these derivatives.

Pre-tax monetized positions and MTM gains and losses from raw materials and energy, currency, and certain interest rate hedges that were included in AOCI included losses of $270 million at December 31, 2020 and losses of $50 million at December 31, 2019. Losses in AOCI increased in 2020 compared to 2019 primarily as a result of an increase in foreign currency exchange rates, particularly the euro. If realized, approximately $35 million in pre-tax losses will be reclassified into earnings during the next 12 months.

10. RETIREMENT PLANS

As described below, Eastman offers various postretirement benefits to its employees.

Defined Contribution Plans

Eastman sponsors a defined contribution employee stock ownership plan (the "ESOP"), which is a component of the Eastman Investment Plan and Employee Stock Ownership Plan ("EIP/ESOP"), under Section 401(a) of the Internal Revenue Code. Eastman made a contribution in February 2021 to the EIP/ESOP for substantially all U.S. employees equal to 5 percent of their eligible compensation for the 2020 plan year. Employees may allocate contributions to other investment funds within the EIP from the ESOP at any time without restrictions. Allocated shares in the ESOP totaled 1,997,587; 2,076,203; and 2,119,614 shares as of December 31, 2020, 2019, and 2018, respectively. Dividends on shares held by the EIP/ESOP are charged to retained earnings. All shares held by the EIP/ESOP are treated as outstanding in computing earnings per share ("EPS").

In 2006, the Company amended its EIP/ESOP to provide a Company match of 50 percent of the first 7 percent of an employee's compensation contributed to the plan for employees who are hired on or after January 1, 2007. Employees who are hired on or after January 1, 2007, are also eligible for the contribution to the ESOP as described above.

Charges for domestic contributions to the EIP/ESOP were $67 million, $68 million, and $67 million for 2020, 2019, and 2018, respectively.

Defined Benefit Pension Plans and Other Postretirement Benefit Plans

Pension Plans

Eastman maintains defined benefit pension plans that provide eligible employees with retirement benefits.

Effective January 1, 2000, the Company's Eastman Retirement Assistance Plan, a U.S. defined benefit pension plan, was amended. Employees' accrued pension benefits earned prior to January 1, 2000 are calculated based on previous plan provisions using the employee's age, years of service, and final average compensation as defined in the plans. The amended plan uses a pension equity formula to calculate an employee's retirement benefits from January 1, 2000 forward. Benefits payable will be the combined pre-2000 and post-1999 benefits. Employees hired on or after January 1, 2007 are not eligible to participate in Eastman's U.S. defined benefit pension plans.

Benefits are paid to employees from trust funds. Contributions to the trust funds are made as permitted by laws and regulations. The pension trust funds do not directly own any of the Company's common stock.

Pension coverage for employees of Eastman's non-U.S. operations is provided, to the extent deemed appropriate, through separate plans. The Company systematically provides for obligations under such plans by depositing funds with trustees, under insurance policies, or by book reserves.

Other Postretirement Benefit Plans

Under its other postretirement benefit plans in the U.S., Eastman provides life insurance for eligible retirees hired prior to January 1, 2007. Eastman provides a subsidy for pre-Medicare health care and dental benefits to eligible retirees hired prior to January 1, 2007 that will end on December 31, 2021. Company funding is also provided for eligible Medicare retirees hired prior to January 1, 2007 with a health reimbursement arrangement. A few of the Company's non-U.S. operations have supplemental health benefit plans for certain retirees, the cost of which is not significant to the Company.

Below is a summary balance sheet of the change in plan assets during 2020 and 2019, the funded status of the plans and amounts recognized in the Consolidated Statements of Financial Position.

Summary of Changes

	Pension Plans				Postretirement Benefit Plans	
	2020		2019		2020	2019
(Dollars in millions)	U.S.	Non-U.S.	U.S.	Non-U.S.		
Change in projected benefit obligation:						
Benefit obligation, beginning of year	$ 2,067	$ 972	$ 1,959	$ 840	$ 716	$ 672
Service cost	25	17	27	14	—	—
Interest cost	57	15	76	20	19	25
Actuarial loss	203	66	200	113	57	71
Settlement	(122)	(6)	—	—	—	—
Plan amendments and other	—	(12)	—	—	—	—
Plan participants' contributions	—	1	—	1	10	10
Effect of currency exchange	—	61	—	11	—	1
Federal subsidy on benefits paid	—	—	—	—	1	—
Benefits paid	(180)	(25)	(195)	(27)	(58)	(63)
Benefit obligation, end of year	$ 2,050	$ 1,089	$ 2,067	$ 972	$ 745	$ 716
Change in plan assets:						
Fair value of plan assets, beginning of year	$ 1,919	$ 820	$ 1,820	$ 713	$ 139	$ 135
Actual return on plan assets	175	72	289	102	18	27
Effect of currency exchange	—	54	—	9	—	—
Company contributions	6	22	5	22	39	42
Reserve for third party contributions	—	—	—	—	(5)	(12)
Plan participants' contributions	—	1	—	1	10	10
Benefits paid	(180)	(25)	(195)	(27)	(58)	(63)
Federal subsidy on benefits paid	—	—	—	—	1	—
Settlements	(122)	(6)	—	—	—	—
Fair value of plan assets, end of year	$ 1,798	$ 938	$ 1,919	$ 820	$ 144	$ 139
Funded status at end of year	$ (252)	$ (151)	$ (148)	$ (152)	$ (601)	$ (577)
Amounts recognized in the Consolidated Statements of Financial Position consist of:						
Other noncurrent assets	$ —	$ 1	$ 13	$ —	$ 57	$ 50
Current liabilities	(3)	(1)	(3)	(1)	(46)	(47)
Post-employment obligations	(249)	(151)	(158)	(151)	(612)	(580)
Net amount recognized, end of year	$ (252)	$ (151)	$ (148)	$ (152)	$ (601)	$ (577)
Accumulated benefit obligation	$ 1,979	$ 1,036	$ 2,005	$ 919		
Amounts recognized in accumulated other comprehensive income consist of:						
Prior service (credit) cost	$ 1	$ (11)	$ 2	$ —	$ (105)	$ (143)

Actuarial losses in the projected benefit obligations for both years were primarily due to lower discount rates.

In fourth quarter 2020, the Company settled approximately $110 million of one of the U.S. defined benefit pension plans' obligation to an insurer through the purchase of a nonparticipating group annuity contract. In addition, there were settlements for several pension plans where lump sum payments exceeded the sum of the service and interest cost components of net periodic benefit cost of the respective plan for the year.

In 2020, the Company had a plan amendment that changed benefits provided by a Netherlands defined benefit pension plan which resulted in a remeasurement of the plan's obligation. The remeasurement resulted in a pre-tax reduction in the projected benefit obligation of $12 million which will be amortized as a prior service from accumulated other comprehensive income over approximately 13 years.

Information for pension plans with projected benefit obligations in excess of plan assets:

(Dollars in millions)	2020		2019	
	U.S.	Non-U.S.	U.S.	Non-U.S.
Projected benefit obligation	$ 2,050	$ 769	$ 1,673	$ 972
Fair value of plan assets	1,798	617	1,512	820

Information for pension plans with accumulated benefit obligations in excess of plan assets:

(Dollars in millions)	2020		2019	
	U.S.	Non-U.S.	U.S.	Non-U.S.
Projected benefit obligation	$ 2,050	$ 718	$ 1,673	$ 651
Accumulated benefit obligation	1,979	693	1,611	625
Fair value of plan assets	1,798	574	1,512	513

Postretirement benefit plans with accumulated benefit obligations in excess of plan assets are $658 million and $627 million at December 31, 2020 and 2019, respectively. The plans have no assets.

Summary of Benefit Costs and Other Amounts Recognized in Other Comprehensive Income

	Pension Plans						Postretirement Benefit Plans		
	2020		2019		2018		2020	2019	2018
(Dollars in millions)	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.			
Components of net periodic benefit (credit) cost:									
Service cost	$ 25	$ 17	$ 27	$ 14	$ 35	$ 14	$ —	$ —	$ —
Interest cost	57	15	76	20	67	20	19	25	22
Expected return on plan assets	(135)	(34)	(128)	(32)	(147)	(37)	(5)	(5)	(5)
Amortization of:									
Prior service (credit) cost	1	(1)	—	—	(1)	1	(38)	(39)	(40)
Mark-to-market pension and other postretirement benefits (gain) loss, net	163	28	39	43	89	36	49	61	(26)
Net periodic benefit (credit) cost	$ 111	$ 25	$ 14	$ 45	$ 43	$ 34	$ 25	$ 42	$ (49)
Other changes in plan assets and benefit obligations recognized in other comprehensive income:									
Current year prior service credit (cost)	$ —	$ 12	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Amortization of:									
Prior service (credit) cost	1	(1)	—	—	(1)	1	(38)	(39)	(40)
Total	$ 1	$ 11	$ —	$ —	$ (1)	$ 1	$ (38)	$ (39)	$ (40)

Plan Assumptions

The assumptions used to develop the projected benefit obligation for Eastman's significant U.S. and non-U.S. defined benefit pension plans and U.S. postretirement benefit plans are provided in the following tables.

	Pension Plans						Postretirement Benefit Plans		
	2020		2019		2018		2020	2019	2018
Weighted-average assumptions used to determine benefit obligations for years ended December 31:	**U.S.**	**Non-U.S.**	**U.S.**	**Non-U.S.**	**U.S.**	**Non-U.S.**			
Discount rate	2.48 %	1.08 %	3.25 %	1.56 %	4.29 %	2.35 %	2.38 %	3.21 %	4.26 %
Interest crediting rate	5.50 %	N/A	5.52 %	N/A	5.54 %	N/A	N/A	N/A	N/A
Rate of compensation increase	2.75 %	2.94 %	3.25 %	2.94 %	3.25 %	2.94 %	N/A	3.25 %	3.25 %
Health care cost trend									
Initial							6.25 %	6.50 %	6.50 %
Decreasing to ultimate trend of							5.00 %	5.00 %	5.00 %
in year							2026	2026	2025
Weighted-average assumptions used to determine net periodic cost for years ended December 31:	**U.S.**	**Non-U.S.**	**U.S.**	**Non-U.S.**	**U.S.**	**Non-U.S.**			
Discount rate	3.25 %	1.56 %	4.29 %	2.35 %	3.57 %	2.25 %	3.21 %	4.26 %	3.54 %
Discount rate for service cost	3.31 %	1.56 %	4.32 %	2.35 %	3.64 %	2.25 %	2.92 %	4.05 %	3.28 %
Discount rate for interest cost	2.83 %	1.56 %	3.96 %	2.35 %	3.18 %	2.25 %	2.80 %	3.93 %	3.14 %
Expected return on assets	7.37 %	4.26 %	7.43 %	4.49 %	7.48 %	4.83 %	3.75 %	3.75 %	3.75 %
Rate of compensation increase	3.25 %	2.94 %	3.25 %	2.94 %	3.25 %	2.95 %	3.25 %	3.25 %	3.25 %
Interest crediting rate	5.52 %	N/A	5.54 %	N/A	5.55 %	N/A	N/A	N/A	N/A
Health care cost trend									
Initial							6.50 %	6.50 %	6.75 %
Decreasing to ultimate trend of							5.00 %	5.00 %	5.00 %
in year							2026	2025	2025

The Company calculates service and interest cost components of net periodic benefit costs for its significant defined benefit pension and other postretirement benefit plans by applying the specific spot rates along the yield curve to the plans' projected cash flows.

The fair value of plan assets for the U.S. pension plans at December 31, 2020 and 2019 was $1.8 billion and $1.9 billion, respectively, while the fair value of plan assets at December 31, 2020 and 2019 for non-U.S. pension plans was $938 million and $820 million, respectively. At December 31, 2020 and 2019, the expected weighted-average long-term rate of return on U.S. pension plan assets was 7.29 percent and 7.37 percent, respectively. The expected weighted-average long-term rate of return on non-U.S. pension plans assets was 4.04 percent and 4.26 percent at December 31, 2020 and 2019, respectively.

Plan Assets

The following tables reflect the fair value of the defined benefit pension plans assets.

(Dollars in millions)

	Fair Value Measurements at December 31, 2020							
Description	Total Fair Value		Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		Significant Unobservable Inputs (Level 3)	
Pension Assets:	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
Cash and Cash Equivalents [1]	$ 47	$ 103	$ 47	$ 103	$ —	$ —	$ —	$ —
Public Equity - United States [2]	1	—	1	—	—	—	—	—
Other Investments [3]	—	68	—	—	—	—	—	68
Total Assets at Fair Value	$ 48	$ 171	$ 48	$ 103	$ —	$ —	$ —	$ 68
Investments Measured at Net Asset Value [4]	1,750	767						
Total Assets	$ 1,798	$ 938						

(Dollars in millions)

	Fair Value Measurements at December 31, 2019							
Description	Total Fair Value		Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		Significant Unobservable Inputs (Level 3)	
Pension Assets:	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
Cash and Cash Equivalents [1]	$ 35	$ 72	$ 35	$ 72	$ —	$ —	$ —	$ —
Public Equity - United States [2]	1	—	1	—	—	—	—	—
Other Investments [3]	—	57	—	—	—	—	—	57
Total Assets at Fair Value	$ 36	$ 129	$ 36	$ 72	$ —	$ —	$ —	$ 57
Investments Measured at Net Asset Value [4]	1,883	691						
Total Assets	$ 1,919	$ 820						

(1) Cash and Cash Equivalents: Funds generally invested in actively managed collective trust funds or interest bearing accounts.

(2) Public Equity - United States: Common stock equity securities which are primarily valued using a market approach based on the quoted market prices.

(3) Other Investments: Primarily consist of insurance contracts which are generally valued using a crediting rate that approximates market returns and investments in underlying securities whose market values are unobservable and determined using pricing models, discounted cash flow methodologies, or similar techniques.

(4) Investments Measured at Net Asset Value: The underlying debt, public equity, and public real asset investments in this category are generally held in common trust funds, which are either actively or passively managed investment vehicles, that are valued at the net asset value per unit/share multiplied by the number of units/shares held as of the measurement date. The other alternative investments in this category are valued under the practical expedient method which is based on the most recently reported net asset value provided by the management of each private investment fund, adjusted as appropriate, for any lag between the date of the financial reports and the measurement date.

The following tables reflect the fair value of the postretirement benefit plan assets. The postretirement benefit plan is for the voluntary employees' beneficiary association ("VEBA") trust the Company assumed as part of the Solutia acquisition.

(Dollars in millions)		Fair Value Measurements at December 31, 2020		
Description	Total Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Postretirement Benefit Plan Assets:				
Cash and Cash Equivalents [1]	$ 1	$ 1	$ —	$ —
Debt [2]:				
Fixed Income (U.S.)	89	—	89	—
Fixed Income (Non-U.S.)	25	—	25	—
Total	$ 115	$ 1	$ 114	$ —

(Dollars in millions)		Fair Value Measurements at December 31, 2019		
Description	Total Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Postretirement Benefit Plan Assets:				
Debt [2]:				
Fixed Income (U.S.)	$ 85	$ —	$ 85	$ —
Fixed Income (Non-U.S.)	26	—	26	—
Total	$ 111	$ —	$ 111	$ —

(1) Cash and Cash Equivalents: Funds generally invested in actively managed collective trust funds or interest bearing accounts.
(2) Debt: The fixed income securities are primarily valued upon a market approach, using matrix pricing and considering a security's relationship to other securities for which quoted prices in an active market may be available, or an income approach, converting future cash flows to a single present value amount. Inputs used in developing fair value estimates include reported trades, broker quotes, benchmark yields, and base spreads.

The Company valued assets with unobservable inputs (Level 3), primarily insurance contracts, using a crediting rate that approximates market returns and investments in underlying securities whose market values are unobservable and determined using pricing models, discounted cash flow methodologies, or similar techniques.

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
	Other Investments[1]
(Dollars in millions)	Non-U.S. Pension Plans
Balance at December 31, 2018	$ 51
Unrealized gains	5
Purchases, issuances, sales, and settlements	1
Balance at December 31, 2019	57
Unrealized gains	9
Purchases, issuances, sales, and settlements	2
Balance at December 31, 2020	$ 68

(1) Primarily consists of insurance contracts.

The following table reflects the target allocation for the Company's U.S. and non-U.S. pension and postretirement benefit plans assets for 2021 and the asset allocation at December 31, 2020 and 2019, by asset category.

	U.S. Pension Plans			Non-U.S. Pension Plans			Postretirement Benefit Plan		
	2021 Target Allocation	Plan Assets at December 31, 2020	Plan Assets at December 31, 2019	2021 Target Allocation	Plan Assets at December 31, 2020	Plan Assets at December 31, 2019	2021 Target Allocation	Plan Assets at December 31, 2020	Plan Assets at December 31, 2019
Asset category									
Equity securities	41%	39%	50%	24%	20%	21%	—%	—%	—%
Debt securities	39%	43%	37%	59%	57%	53%	100%	100%	100%
Real estate	2%	2%	2%	5%	6%	8%	—%	—%	—%
Other investments [(1)]	18%	16%	11%	12%	17%	18%	—%	—%	—%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

(1) U.S. primarily consists of private equity and natural resource and energy related limited partnership investments and public real assets. Non-U.S. primarily consists of annuity contracts and alternative investments.

Investment Strategy

Eastman's investment strategy for its defined benefit pension plans is to maximize the long-term rate of return on plan assets within an acceptable level of risk in order to meet or exceed the plan's actuarially assumed long-term rate of return and to minimize the cost of providing pension benefits. A periodic asset/liability study is conducted in order to assist in the determination and, if necessary, modification of the appropriate long-term investment policy for the plan. The investment policy establishes a target allocation range for each asset class and the fund is managed within those ranges. The plans use a number of investment approaches including investments in equity, real estate, and fixed income funds in which the underlying securities are marketable in order to achieve this target allocation. The plans also invest in private equity and other funds. Diversification is created through investments across various asset classes, geographies, fund managers, and individual securities. This investment process is designed to provide for a well-diversified portfolio with no significant concentration of risk. The investment process is monitored by an investment committee that includes senior management.

Eastman's investment strategy for its VEBA trust is to invest in intermediate-term, well diversified, high quality investment instruments, with a primary objective of capital preservation.

The expected rate of return for all plans was determined primarily by modeling the expected long-term rates of return for the categories of investments held by the plans and the targeted allocation percentage against various potential economic scenarios.

The Company made no contributions to its U.S. defined benefit pension plans in 2020 or 2019. For 2021 calendar year, there are no minimum required cash contributions for the U.S. defined benefit pension plans under the Employee Retirement Income Security Act of 1974, as amended, and the Internal Revenue Code of 1986, as amended.

The estimated future benefit payments, reflecting expected future service, as appropriate, are as follows:

	Pension Plans		Postretirement Benefit Plans
(Dollars in millions)	U.S.	Non-U.S.	
2021	$ 151	$ 33	$ 56
2022	147	34	53
2023	143	38	48
2024	135	39	47
2025	142	39	47
2026-2030	639	242	221

11. LEASES AND OTHER COMMITMENTS

Leases

The Company has operating leases, as a lessee, with customary terms that do not include: significant variable lease payments; significant reasonably certain extensions or options required to be included in the lease term; restrictions; or other covenants for real property, rolling stock, and machinery and equipment. Real property leases primarily consist of office space and rolling stock leases primarily for railcars and fleet vehicles. At December 31, 2020 and December 31, 2019, operating right-to-use assets of $176 million and $197 million, respectively, are included as a part of "Other noncurrent assets" in the Consolidated Statements of Financial Position and includes $9 million and $8 million, respectively, of assets previously classified as lease intangibles. Operating lease liabilities are included as a part of "Payables and other current liabilities" and "Other long-term liabilities" in the Consolidated Statements of Financial Position.

As of December 31, 2020, maturities of operating lease liabilities is provided below:

(Dollars in millions)	Operating lease liabilities
2021	$ 60
2022	44
2023	31
2024	18
2025	12
2026 and beyond	28
Total lease payments	193
Less: amounts of lease payments representing interest	14
Present value of future lease payments	179
Less: current obligations under leases	56
Long-term lease obligations	$ 123

As of December 31, 2019, maturities of operating lease liabilities is provided below:

(Dollars in millions)	Operating lease liabilities
2020	$ 62
2021	49
2022	38
2023	25
2024	14
2025 and beyond	30
Total lease payments	218
Less: amounts of lease payments representing interest	22
Present value of future lease payments	196
Less: current obligations under leases	55
Long-term lease obligations	$ 141

The Company has operating leases, primarily leases for railcars, with terms that require the Company to guarantee a portion of the residual value of the leased assets upon termination of the lease that will expire beginning in second quarter 2021. Management's current expectation is that the likelihood of material residual guarantee payments is remote.

Lease costs during the period and other information is provided below:

(Dollars in millions)	2020	2019
Lease costs:		
Operating lease costs	$ 73	$ 70
Short-term lease costs	37	40
Sublease income	(4)	(2)
Total	$ 106	$ 108
Other operating lease information:		
Cash paid for amounts included in the measurement of lease liabilities	$ 72	$ 72
Right-to-use assets obtained in exchange for new lease liabilities	$ 55	$ 54
Weighted-average remaining lease term, in years	5	5
Weighted-average discount rate	3.6 %	4.0 %

Debt and Other Commitments

Eastman's obligations are summarized in the following table.

(Dollars in millions)	Payments Due for						
Period	Debt Securities	Credit Facilities and Other	Interest Payable	Purchase Obligations	Operating Leases	Other Liabilities	Total
2021	$ 299	$ 50	$ 172	$ 187	$ 60	$ 274	$ 1,042
2022	744	—	174	174	44	95	1,231
2023	919	—	157	137	31	91	1,335
2024	241	—	137	140	18	99	635
2025	701	—	119	112	12	87	1,031
2026 and beyond	2,664	—	1,291	2,432	28	1,191	7,606
Total	$ 5,568	$ 50	$ 2,050	$ 3,182	$ 193	$ 1,837	$ 12,880

Estimated future payments of debt securities assumes the repayment of principal upon stated maturity, and actual amounts and the timing of such payments may differ materially due to repayment or other changes in the terms of such debt prior to maturity.

Eastman had various purchase obligations at December 31, 2020 totaling approximately $3.2 billion over a period of approximately 30 years for materials, supplies, and energy incident to the ordinary conduct of business.

Amounts in other liabilities represent the current estimated cash payments required to be made by the Company primarily for pension and other postretirement benefits, environmental loss contingency estimates, accrued compensation benefits, uncertain tax liabilities, and commodity and foreign exchange hedging in the periods indicated. Due to uncertainties in the timing of the effective settlement of tax positions with respect to taxing authorities, management is unable to determine the timing of payments related to uncertain tax liabilities and these amounts are included in the "2026 and beyond" line item.

The amount and timing of pension and other postretirement benefit payments included in other liabilities is dependent upon interest rates, health care cost trends, actual returns on plan assets, retirement and attrition rates of employees, continuation or modification of the benefit plans, and other factors. Such factors can significantly impact the amount and timing of any future contributions by the Company. Excess contributions are periodically made by management in order to keep the plans' funded status above 80 percent under the funding provisions of the Pension Protection Act to avoid partial benefit restrictions on accelerated forms of payment. The Company's U.S. defined benefit pension plans are not currently under any benefit restrictions. See Note 10, "Retirement Plans", for more information regarding pension and other postretirement benefit obligations.

The resolution of uncertainties related to environmental matters included in other liabilities may have a material adverse effect on the Company's consolidated results of operations in the period recognized, however, because of the availability of legal defenses, the Company's preliminary assessment of actions that may be required, and, if applicable, the expected sharing of costs, management does not believe that the Company's liability for these environmental matters, individually or in the aggregate, will be material to the Company's consolidated financial position, results of operations, or cash flows. See Note 1, "Significant Accounting Policies", for environmental costs, and see Note 12, "Environmental Matters and Asset Retirement Obligations", for more information regarding outstanding environmental matters and asset retirement obligations.

Guarantees and claims also arise during the ordinary course of business from relationships with customers, suppliers, joint venture partners, and other parties when the Company undertakes an obligation to guarantee the performance of others if specified triggering events occur. Non-performance under a contract could trigger an obligation of the Company. The Company's current other guarantees include guarantees relating to intellectual property, environmental matters, and other indemnifications and have arisen through the normal course of business. The ultimate effect on future financial results is not subject to reasonable estimation because considerable uncertainty exists as to the final outcome of these claims, if they were to occur. These other guarantees have terms up to 30 years with maximum potential future payments of approximately $25 million in the aggregate, with none of these guarantees being individually significant to the Company's operating results, financial position, or liquidity. Management's current expectation is that future payment or performance related to non-performance under other guarantees is remote.

12. ENVIRONMENTAL MATTERS AND ASSET RETIREMENT OBLIGATIONS

Certain Eastman manufacturing facilities generate hazardous and nonhazardous wastes, the treatment, storage, transportation, and disposal of which are regulated by various governmental agencies. In connection with the cleanup of various hazardous waste sites, the Company, along with many other entities, has been designated a potentially responsible party ("PRP") by the U.S. Environmental Protection Agency under the Comprehensive Environmental Response, Compensation and Liability Act, which potentially subjects PRPs to joint and several liability for certain cleanup costs. In addition, the Company will incur costs for environmental remediation and closure and post-closure under the federal Resource Conservation and Recovery Act. Reserves for environmental contingencies have been established in accordance with Eastman's policies described in Note 1, "Significant Accounting Policies". The resolution of uncertainties related to environmental matters may have a material adverse effect on the Company's consolidated results of operations in the period recognized. However, because of the availability of legal defenses, the Company's preliminary assessment of actions that may be required, and the extended period of time that the obligations are expected to be satisfied, management does not believe that the Company's liability for these environmental matters, individually or in the aggregate, will have a material adverse effect on the Company's future liquidity or financial condition. The Company's total reserve for environmental loss contingencies was $285 million and $287 million at December 31, 2020 and December 31, 2019, respectively.

Environmental Remediation and Environmental Asset Retirement Obligations

The Company's total environmental reserve for environmental contingencies, including remediation costs and asset retirement obligations, is included as part of "Other noncurrent assets", "Payables and other current liabilities" and "Other long-term liabilities" in the Consolidated Statements of Financial Position as follows:

(Dollars in millions)	December 31,	
	2020	2019
Environmental contingencies, current	$ 15	$ 20
Environmental contingencies, long-term	270	267
Total	$ 285	$ 287

Environmental Remediation

Estimated future environmental expenditures for undiscounted remediation costs ranged from the best estimate or minimum of $257 million to the maximum of $501 million and from the best estimate or minimum of $260 million to the maximum of $487 million at December 31, 2020 and December 31, 2019, respectively. The best estimate or minimum estimated future environmental expenditures are considered to be probable and reasonably estimable and include the amounts recognized at both December 31, 2020 and December 31, 2019.

Costs of certain remediation projects included in the environmental reserve are subject to a cost-sharing arrangement with Monsanto Company ("Monsanto") under the provisions of the Amended and Restated Settlement Agreement effective February 28, 2008 (the "Effective Date"), into which Solutia entered with Monsanto upon its emergence from bankruptcy (the "Monsanto Settlement Agreement"). Under the provisions of the Monsanto Settlement Agreement, Solutia, which became a wholly-owned subsidiary of Eastman on July 2, 2012, shares responsibility with Monsanto for remediation at certain locations outside of the boundaries of plant sites in Anniston, Alabama and Sauget, Illinois (the "Shared Sites"). Solutia is responsible for the funding of environmental liabilities at the Shared Sites up to a total of $325 million from the Effective Date. If remediation costs for the Shared Sites exceed this amount, such costs will thereafter be shared equally between Solutia and Monsanto. Including payments by Solutia prior to its acquisition by Eastman, $104 million had been paid for costs at the Shared Sites as of December 31, 2020. As of December 31, 2020, an additional $200 million has been recognized for estimated future remediation costs at the Shared Sites, over a period of approximately 30 years.

Reserves for environmental remediation include liabilities expected to be paid within approximately 30 years. The amounts charged to pre-tax earnings for environmental remediation and related charges are included within "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings. Changes in the reserves for environmental remediation contingencies for twelve months ended 2020 are summarized below:

(Dollars in millions)	Environmental Remediation Liabilities
Balance at December 31, 2018	$ 271
Changes in estimates recognized in earnings and other	4
Cash reductions	(15)
Balance at December 31, 2019	260
Changes in estimates recognized in earnings and other	7
Cash reductions	(10)
Balance at December 31, 2020	$ 257

Environmental Asset Retirement Obligations

An asset retirement obligation is an obligation for the retirement of a tangible long-lived asset that is incurred upon the acquisition, construction, development, or normal operation of that long-lived asset. Environmental asset retirement obligations consist of primarily closure and post-closure costs. For sites that have environmental asset retirement obligations, the best estimate recognized to date for these environmental asset retirement obligation costs was $28 million and $27 million at December 31, 2020 and December 31, 2019, respectively.

Other

Eastman's cash expenditures related to environmental protection and improvement were $265 million, $244 million, and $274 million in 2020, 2019, and 2018, respectively, and include operating costs associated with environmental protection equipment and facilities, engineering costs, and construction costs. The cash expenditures above include environmental capital expenditures of approximately $42 million, $27 million, and $44 million in 2020, 2019, and 2018, respectively.

The Company also has contractual asset retirement obligations not associated with environmental liabilities. Eastman's non-environmental asset retirement obligations are primarily associated with the future closure of leased manufacturing assets at Pace, Florida and Oulu, Finland. These recognized non-environmental asset retirement obligations were $51 million and $48 million at December 31, 2020 and December 31, 2019, respectively, and are included as part of "Other long-term liabilities" in the Consolidated Statements of Financial Position.

13. LEGAL MATTERS

From time to time, Eastman and its operations are parties to, or targets of, lawsuits, claims, investigations and proceedings, including product liability, personal injury, asbestos, patent and intellectual property, commercial, contract, environmental, antitrust, health and safety, and employment matters, which are handled and defended in the ordinary course of business. While the Company is unable to predict the outcome of legal matters, it does not believe, based upon currently available facts, that the ultimate resolution of any such pending matters will have a material adverse effect on its overall financial condition, results of operations, or cash flows.

14. STOCKHOLDERS' EQUITY

A reconciliation of the changes in stockholders' equity for 2020, 2019, and 2018 is provided below:

(Dollars in millions)	Common Stock at Par Value	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock at Cost	Total Eastman Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at December 31, 2017	$ 2	$ 1,983	$ 6,802	$ (209)	$ (3,175)	$ 5,403	$ 77	$ 5,480
Cumulative Effect of Adoption of New Accounting Standards [1]	—	—	16	—	—	16	—	16
Net Earnings	—	—	1,080	—	—	1,080	4	1,084
Cash Dividends [2]	—	—	(325)	—	—	(325)	—	(325)
Other Comprehensive (Loss)	—	—	—	(36)	—	(36)	—	(36)
Share-Based Compensation Expense [3]	—	64	—	—	—	64	—	64
Stock Option Exercises	—	18	—	—	—	18	—	18
Other [4]	—	(17)	—	—	—	(17)	(1)	(18)
Share Repurchase	—	—	—	—	(400)	(400)	—	(400)
Distributions to noncontrolling interest	—	—	—	—	—	—	(5)	(5)
Balance at December 31, 2018	$ 2	$ 2,048	$ 7,573	$ (245)	$ (3,575)	$ 5,803	$ 75	$ 5,878
Cumulative Effect of Adoption of New Accounting Standards [5]	—	—	(20)	20	—	—	—	—
Net Earnings	—	—	759	—	—	759	3	762
Cash Dividends [1]	—	—	(347)	—	—	(347)	—	(347)
Other Comprehensive Income	—	—	—	11	—	11	—	11
Share-Based Compensation Expense [2]	—	59	—	—	—	59	—	59
Stock Option Exercises	—	9	—	—	—	9	—	9
Other [4]	—	(11)	—	—	—	(11)	—	(11)
Share Repurchase	—	—	—	—	(325)	(325)	—	(325)
Distributions to noncontrolling interest	—	—	—	—	—	—	(4)	(4)
Balance at December 31, 2019	$ 2	$ 2,105	$ 7,965	$ (214)	$ (3,900)	$ 5,958	$ 74	$ 6,032
Net Earnings	—	—	478	—	—	478	11	489
Cash Dividends [1]	—	—	(363)	—	—	(363)	—	(363)
Other Comprehensive Income	—	—	—	(59)	—	(59)	—	(59)
Share-Based Compensation Expense [2]	—	44	—	—	—	44	—	44
Stock Option Exercises	—	36	—	—	—	36	—	36
Other [4]	—	(11)	—	—	—	(11)	2	(9)
Share Repurchase	—	—	—	—	(60)	(60)	—	(60)
Distributions to noncontrolling interest	—	—	—	—	—	—	(2)	(2)
Balance at December 31, 2020	$ 2	$ 2,174	$ 8,080	$ (273)	$ (3,960)	$ 6,023	$ 85	$ 6,108

(1) On January 1, 2018, the Company adopted new accounting standards for revenue recognition and derivatives and hedging, which resulted in increases to beginning retained earnings of $53 million and $2 million, respectively. The Company also adopted a new accounting standard for income taxes, which resulted in a decrease to beginning retained earnings of $39 million.

(2) Cash dividends includes cash dividends paid and dividends declared, but unpaid.

(3) Share-based compensation expense is the fair value of share-based awards

(4) Additional paid-in capital includes value of shares withheld for employees' taxes on vesting of share-based compensation awards.

(5) On January 1, 2019, Eastman adopted *ASU 2018-02 Income Statement - Reporting Comprehensive Income* resulting in the reclassification of $20 million of stranded tax expense from AOCI to retained earnings.

Eastman is authorized to issue 400 million shares of all classes of stock, of which 50 million may be preferred stock, par value $0.01 per share, and 350 million may be common stock, par value $0.01 per share. The Company declared dividends per share of $2.67 in 2020, $2.52 in 2019, and $2.30 in 2018.

The Company established a benefit security trust in 1997 to provide a degree of financial security for unfunded obligations under certain unfunded plans and contributed to the trust a warrant to purchase up to 6 million shares of common stock of the Company for par value. The warrant, which remains outstanding, is exercisable by the trustee if the Company does not meet certain funding obligations, which obligations would be triggered by certain occurrences, including a change in control or potential change in control, as defined, or failure by the Company to meet its payment obligations under certain covered unfunded plans. Such warrant is excluded from the computation of diluted EPS because the conditions upon which the warrant becomes exercisable have not been met.

The additions to paid-in capital in 2020, 2019, and 2018 are primarily for compensation expense of equity awards and employee stock option exercises.

In February 2014, the Company's Board of Directors authorized repurchase of up to $1 billion of the Company's outstanding common stock. The Company completed the $1 billion repurchase authorization in May 2018, acquiring a total of 12,215,950 shares. In February 2018, the Company's Board of Directors authorized the repurchase of up to $2 billion of the Company's outstanding common stock at such times, in such amounts, and on such terms, as determined by management to be in the best interest of the Company. As of December 31, 2020, a total of 7,887,216 shares have been repurchased under this authorization for a total of $633 million. During 2020, 2019, and 2018, the Company repurchased shares of common stock of 1,134,052, 4,282,409, and 3,959,878, respectively, for a cost of approximately $60 million, $325 million, and $400 million, respectively.

The Company's charitable foundation held 50,798 issued and outstanding shares of the Company's common stock at December 31, 2020, 2019, and 2018 which are included in treasury stock in the Consolidated Statements of Financial Position and excluded from calculations of diluted EPS.

The following table sets forth the computation of basic and diluted EPS:

	For years ended December 31,		
(In millions, except per share amounts)	2020	2019	2018
Numerator			
Net earnings attributable to Eastman	$ 478	$ 759	$ 1,080
Denominator			
Weighted average shares used for basic EPS	135.5	137.4	141.2
Dilutive effect of stock options and other award plans	1.0	1.1	1.7
Weighted average shares used for diluted EPS	136.5	138.5	142.9
EPS [(1)]			
Basic	$ 3.53	$ 5.52	$ 7.65
Diluted	$ 3.50	$ 5.48	$ 7.56

(1) EPS is calculated using whole dollars and shares.

Shares underlying stock options excluded from the 2020, 2019, and 2018 calculations of diluted EPS were 2,424,826, 2,183,875, and 619,706, respectively, because the grant price of these options was greater than the average market price of the Company's common stock and the effect of including them in the calculation of diluted EPS would have been antidilutive.

Shares of common stock issued, including shares held in treasury, are presented below:

	For years ended December 31,		
	2020	2019	2018
Balance at beginning of year	219,638,646	219,140,523	218,369,992
Issued for employee compensation and benefit plans	1,002,860	498,123	770,531
Balance at end of year	220,641,506	219,638,646	219,140,523

Accumulated Other Comprehensive Income (Loss)

(Dollars in millions)	Cumulative Translation Adjustment	Benefit Plans Unrecognized Prior Service Credits	Unrealized Gains (Losses) on Cash Flow Hedges	Unrealized Losses on Investments	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2018	$ (309)	$ 106	$ (41)	$ (1)	$ (245)
Period change [1]	45	—	(14)	—	31
Balance at December 31, 2019	(264)	106	(55)	(1)	(214)
Period change	(29)	(19)	(11)	—	(59)
Balance at December 31, 2020	$ (293)	$ 87	$ (66)	$ (1)	$ (273)

(1) Benefit plans unrecognized prior service credits includes $29 million reclassification of stranded tax expense from AOCI to retained earnings and unrealized gains (losses) on derivative instruments includes $9 million reclassification of stranded tax benefit from AOCI to retained earnings. See Note 1, "Significant Accounting Policies", for additional information.

Amounts of other comprehensive income (loss) are presented net of applicable taxes. Eastman records deferred income taxes on the cumulative translation adjustment related to branch operations and income from other entities included in the Company's consolidated U.S. tax return. No deferred income taxes are recognized on the cumulative translation adjustment of other subsidiaries outside the United States, as the cumulative translation adjustment is considered to be a component of indefinitely invested, unremitted earnings of these foreign subsidiaries.

Components of total other comprehensive income (loss) recorded in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings are presented below, before tax and net of tax effects:

	For years ended December 31,					
	2020		2019		2018	
(Dollars in millions)	Before Tax	Net of Tax	Before Tax	Net of Tax	Before Tax	Net of Tax
Change in cumulative translation adjustment	$ (29)	$ (29)	$ 45	$ 45	$ (13)	$ (13)
Defined benefit pension and other postretirement benefit plans:						
Prior service credit arising during the period	12	9	—	—	—	—
Amortization of unrecognized prior service credits included in net periodic costs	(38)	(28)	(39)	(29)	(40)	(30)
Derivatives and hedging:						
Unrealized gain (loss) during period	(46)	(34)	(27)	(20)	30	22
Reclassification adjustment for (gains) losses included in net income, net	31	23	20	15	(20)	(15)
Total other comprehensive income (loss)	$ (70)	$ (59)	$ (1)	$ 11	$ (43)	$ (36)

For additional information regarding the impact of reclassifications into earnings, refer to Note 9, "Derivative and Non-Derivative Financial Instruments", and Note 10, "Retirement Plans".

15. ASSET IMPAIRMENTS AND RESTRUCTURING CHARGES, NET

Components of asset impairments and restructuring charges, net, are presented below:

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Fixed Asset Impairments			
CI & AFP - Singapore (1)	$ —	$ 27	$ —
Site optimizations			
AFP - Tire additives (2)	5	—	—
AM - Performance films (3)	5	—	—
AFP - Animal nutrition (4)	3	—	—
Discontinuation of growth initiatives (5)	8	—	—
	21	27	—
Intangible Asset Impairments			
AFP - Tradenames (6)	123	—	—
AFP - Customer relationships (7)	2	—	—
AFP - Goodwill (8)	—	45	38
AM - Customer relationships (7)	—	—	1
	125	45	39
Severance Charges			
Business improvement and cost reduction actions (9)	47	45	6
CI & AFP - Singapore (1)	6	—	—
Site optimizations			
AM - Advanced interlayers (10)	5	—	—
AFP - Tire additives (2)	3	—	—
AM - Performance films (3)	3	—	—
AFP - Animal nutrition (4)	1	—	—
	65	45	6
Other Restructuring Costs			
Cost reduction initiatives (9)	14	5	—
Discontinuation of growth initiatives contract termination fees (5)	4	—	—
AFP - Animal nutrition (4)	(2)	—	—
AFP - Discontinued capital project (11)	—	4	—
	16	9	—
Total	$ 227	$ 126	$ 45

(1) Asset impairment charges of $22 million and $5 million in the CI segment and the AFP segment, respectively, and severance charges of $5 million and $1 million in the CI segment and the AFP segment, respectively, resulting from the previously disclosed plan to discontinue production of certain products at the Singapore manufacturing site. Total asset impairments and restructuring charges for this action are expected to be up to $50 million continuing through 2021.

(2) Fixed asset impairments and severance in the AFP segment from the closure of a tire additives manufacturing facility in Asia Pacific as part of ongoing site optimization.

(3) Fixed asset impairments and severance in the Advanced Materials ("AM") segment from the closure of a performance films manufacturing facility in North America as part of ongoing site optimization.

(4) Fixed asset impairments, severance, and other restructuring gains in the AFP segment from the closure of an animal nutrition manufacturing facility in Asia Pacific as part of ongoing site optimization.

(5) Fixed asset impairments and contract termination fees resulting from management's decision to discontinue growth initiatives for polyester based microfibers, including Avra™ performance fibers, the financial results of which were not allocated to an operating segment and reported in "Other".

(6) Intangible asset impairment charges in the AFP segment tire additives business to reduce the carrying values of the Crystex™ and Santoflex™ tradenames to the estimated fair values. The estimated fair values were determined using an income approach, specifically, the relief from royalty method, including some unobservable inputs. The impairments are primarily the result of weakened demand in transportation markets impacted by COVID-19 and increased competitive pricing pressure as a result of global capacity increases.
(7) Intangible asset impairment charge for customer relationships.
(8) Goodwill impairment charge in the crop protection reporting unit resulting from the annual impairment test. In first quarter 2020 the crop protection reporting unit combined with the care chemicals reporting unit as a result of business management realignment.
(9) Severance and related costs as part of business improvement and cost reduction initiatives which were reported in "Other".
(10) Severance in the AM segment due to the closure of an advanced interlayers manufacturing facility in North America as part of ongoing site optimization. In addition, accelerated depreciation of $8 million was recognized in "Cost of sales" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings in 2020 related to the closure of this facility. Management expects total charges of up to $30 million, mostly in "Cost of sales" and in "Asset impairments and restructuring charges, net" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings, continuing through 2021 for the closure of this facility.
(11) Additional restructuring charge related to a capital project in the AFP segment that was discontinued in 2016.

Reconciliations of the beginning and ending restructuring liability amounts are as follows:

(Dollars in millions)	Balance at January 1, 2020	Provision/ Adjustments	Non-cash Reductions/ Additions	Cash Reductions	Balance at December 31, 2020
Non-cash charges	$ —	$ 145	$ (145)	$ —	$ —
Severance costs	17	65	1	(18)	65
Site closure & restructuring costs	11	17	—	(14)	14
Total	$ 28	$ 227	$ (144)	$ (32)	$ 79

(Dollars in millions)	Balance at January 1, 2019	Provision/ Adjustments	Non-cash Reductions/ Additions	Cash Reductions	Balance at December 31, 2019
Non-cash charges	$ —	$ 72	$ (72)	$ —	$ —
Severance costs	6	45	—	(34)	17
Site closure & restructuring costs	8	9	1	(7)	11
Total	$ 14	$ 126	$ (71)	$ (41)	$ 28

(Dollars in millions)	Balance at January 1, 2018	Provision/ Adjustments	Non-cash Reductions/ Additions	Cash Reductions	Balance at December 31, 2018
Non-cash charges	$ —	$ 39	$ (39)	$ —	$ —
Severance costs	19	6	1	(20)	6
Site closure & restructuring costs	10	—	—	(2)	8
Total	$ 29	$ 45	$ (38)	$ (22)	$ 14

Substantially all costs remaining for severance are expected to be applied to the reserves within one year.

16. OTHER (INCOME) CHARGES, NET

	For years ended December 31,		
(Dollars in millions)	2020	2019	2018
Foreign exchange transaction losses (gains), net [(1)]	$ 16	$ 9	$ 12
Currency transaction costs resulting from tax law changes and outside-U.S. entity reorganizations	—	—	13
(Income) loss from equity investments and other investment (gains) losses, net	(15)	(10)	(17)
Coal gasification incident property insurance	—	—	(65)
Other, net	7	4	4
Other (income) charges, net	$ 8	$ 3	$ (53)

(1) Net impact of revaluation of foreign entity assets and liabilities and effects of foreign exchange non-qualifying derivatives.

17. SHARE-BASED COMPENSATION PLANS AND AWARDS

2017 Omnibus Stock Compensation Plan

Eastman's 2017 Omnibus Stock Compensation Plan ("2017 Omnibus Plan") was approved by stockholders at the May 4, 2017 Annual Meeting of Stockholders and shall remain in effect until its fifth anniversary. The 2017 Omnibus Plan authorizes the Compensation and Management Development Committee of the Board of Directors to grant awards, designate participants, determine the types and numbers of awards, determine the terms and conditions of awards and determine the form of award settlement. Under the 2017 Omnibus Plan, the aggregate number of shares reserved and available for issuance is 10 million, which consist of shares not previously authorized for issuance under any other plan. The number of shares covered by an award is counted against this share reserve as of the grant date of the award. Shares covered by full value awards (e.g. performance shares and restricted stock awards) are counted against the total number of shares available for issuance or delivery under the plan as 2.5 shares for every one share covered by the award. Any stock distributed pursuant to an award may consist of, in whole or in part, authorized and unissued stock, treasury stock, or stock purchased on the open market. Under the 2017 Omnibus Plan and previous plans, the forms of awards have included restricted stock and restricted stock units, stock options, stock appreciation rights ("SARs"), and performance shares. The 2017 Omnibus Plan is flexible as to the number of specific forms of awards, but provides that stock options and SARs are to be granted at an exercise price not less than 100 percent of the per share fair market value on the date of the grant.

Director Stock Compensation Subplan

Eastman's 2018 Director Stock Compensation Subplan ("Directors' Subplan"), a component of the 2017 Omnibus Plan, remains in effect until terminated by the Board of Directors or the earlier termination of the 2017 Omnibus Plan. The Directors' Subplan provides for structured awards of restricted shares to non-employee members of the Board of Directors. Restricted shares awarded under the Directors' Subplan are subject to the same terms and conditions of the 2017 Omnibus Plan. The Directors' Subplan does not constitute a separate source of shares for grant of equity awards and all shares awarded are part of the 10 million shares authorized under the 2017 Omnibus Plan. Shares of restricted stock are granted on the first day of a non-employee director's initial term of service and shares of restricted stock are granted each year to each non-employee director on the date of the annual meeting of stockholders.

It has been the Company's practice to issue new shares rather than treasury shares for equity awards for compensation plans, including the 2017 Omnibus Plan and the Directors' Subplan, that require settlement by the issuance of common stock and to withhold or accept back shares awarded to cover the related income tax obligations of employee participants. Shares of unrestricted common stock owned by non-employee directors are not eligible to be withheld or acquired to satisfy the withholding obligation related to their income taxes. Shares of unrestricted common stock owned by specified senior management level employees are accepted by the Company to pay the exercise price of stock options in accordance with the terms and conditions of their awards.

Compensation Expense

For 2020, 2019, and 2018, total share-based compensation expense (before tax) of approximately $44 million, $59 million, and $64 million, respectively, was recognized in "Selling, general and administrative expense" in the Consolidated Statements of Earnings, Comprehensive Income and Retained Earnings for all share-based awards of which approximately $7 million, $9 million, and $9 million, respectively, related to stock options. The compensation expense is recognized over the substantive vesting period, which may be a shorter time period than the stated vesting period for qualifying termination eligible employees as defined in the forms of award notice. Approximately $1 million for 2020, $3 million for 2019, and $3 million for 2018 of stock option compensation expense was recognized each year due to qualifying termination eligibility preceding the requisite vesting period.

Stock Option Awards

Options have been granted on an annual basis by the Compensation and Management Development Committee of the Board of Directors under the 2017 Omnibus Plan and predecessor plans to employees. Option awards have an exercise price equal to the closing price of the Company's stock on the date of grant. The term of options is 10 years with vesting periods that vary up to three years. Vesting usually occurs ratably over the vesting period or at the end of the vesting period. The Company utilizes the Black Scholes Merton option valuation model which relies on certain assumptions to estimate an option's fair value.

The weighted average assumptions used in the determination of fair value for stock options awarded in 2020, 2019, and 2018 are provided in the table below:

Assumptions	2020	2019	2018
Expected volatility rate	21.56%	19.80%	19.03%
Expected dividend yield	3.30%	2.51%	2.48%
Average risk-free interest rate	0.94%	2.44%	2.61%
Expected term years	5.9	5.7	5.1

The volatility rate of grants is derived from historical Company common stock price volatility over the same time period as the expected term of each stock option award. The volatility rate is derived by mathematical formula utilizing the weekly high closing stock price data over the expected term.

The expected dividend yield is calculated using the Company's average of the last four quarterly dividend yields.

The average risk-free interest rate is derived from United States Department of Treasury published interest rates of daily yield curves for the same time period as the expected term.

The weighted average expected term reflects the analysis of historical share-based award transactions and includes option swap and reload grants which may have much shorter remaining expected terms than new option grants.

A summary of the activity of the Company's stock option awards for 2020, 2019, and 2018 is presented below:

	2020		2019		2018	
	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price
Outstanding at beginning of year	3,479,300	$ 80	2,905,600	$ 79	2,614,100	$ 70
Granted	622,000	62	786,000	81	619,700	104
Exercised	(568,800)	64	(135,700)	67	(323,000)	55
Cancelled, forfeited, or expired	(5,900)	82	(76,600)	88	(5,200)	78
Outstanding at end of year	3,526,600	$ 79	3,479,300	$ 80	2,905,600	$ 79
Options exercisable at year-end	2,192,300		2,077,600		1,606,800	
Available for grant at end of year	4,046,748		6,085,857		8,174,614	

The following table provides the remaining contractual term and weighted average exercise prices of stock options outstanding and exercisable at December 31, 2020:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding at December 31, 2020	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable at December 31, 2020	Weighted-Average Exercise Price
$38-$64	658,900	8.8	$ 61	21,300	$ 44
$65-$74	829,900	6.2	70	781,900	70
$75-$89	1,440,800	6.7	82	991,100	82
$90-$104	597,000	7.2	104	398,000	104
	3,526,600	7.1	$ 79	2,192,300	$ 81

The range of exercise prices of options outstanding at December 31, 2020 is approximately $38 to $104 per share. The aggregate intrinsic value of total options outstanding and total options exercisable at December 31, 2020 is $77 million and $43 million, respectively. Intrinsic value is the amount by which the closing market price of the stock at December 31, 2020 exceeds the exercise price of the option grants.

The weighted average remaining contractual life of all exercisable options at December 31, 2020 is 5.7 years.

The weighted average fair value of options granted during 2020, 2019, and 2018 was $7.92, $13.12, and $15.90, respectively. The total intrinsic value of options exercised during the years ended December 31, 2020, 2019, and 2018, was $14 million, $2 million, and $15 million, respectively. Cash proceeds received by the Company from option exercises totaled $36 million and the related tax benefit was $2 million, respectively, for 2020, $9 million and de minimis, respectively, for 2019, and $18 million and $3 million, respectively, for 2018. The total fair value of shares vested during the years ended December 31, 2020, 2019, and 2018 was $9 million, $8 million, and $7 million, respectively.

A summary of the changes in the Company's nonvested options during the year ended December 31, 2020 is presented below:

Nonvested Options	Number of Options	Weighted-Average Grant Date Fair Value
Nonvested at January 1, 2020	1,401,700	$13.68
Granted	622,000	$7.92
Vested	(689,400)	$13.47
Nonvested options at December 31, 2020	1,334,300	$11.11

For nonvested options at December 31, 2020, approximately $2 million in compensation expense will be recognized over the next two years.

Other Share-Based Compensation Awards

In addition to stock option awards, Eastman has awarded long-term performance share awards, restricted stock awards, and SARs. The long-term performance share awards are based upon actual return on capital compared to a target return on capital and total stockholder return compared to a peer group ranking by total stockholder return over a three year performance period. The awards are valued using a Monte Carlo Simulation based model and vest pro-rata over the three year performance period. The number of long-term performance award target shares granted for the 2020-2022, 2019-2021, and 2018-2020 periods were 423 thousand, 412 thousand, and 310 thousand, respectively. The target shares granted are assumed to be 100 percent. At the end of the three-year performance period, the actual number of shares awarded can range from zero percent to 250 percent of the target shares granted based on the award notice. The number of restricted stock awards granted during 2020, 2019, and 2018 were 227 thousand 189 thousand, and 160 thousand, respectively. The fair value of a restricted stock award is equal to the closing stock price of the Company's stock on the date of grant and normally vests over a period of three years. The recognized compensation expense before tax for these other share-based awards in the years ended December 31, 2020, 2019, and 2018 was approximately \$37 million, \$50 million, and \$55 million, respectively. The unrecognized compensation expense before tax for these same type awards at December 31, 2020 was approximately \$45 million and will be recognized primarily over a period of two years.

18. SUPPLEMENTAL CASH FLOW INFORMATION

Included in the line item "Other items, net" of the "Operating activities" section of the Consolidated Statements of Cash Flows are specific changes to certain balance sheet accounts as follows:

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Current assets	\$ (1)	\$ (5)	\$ (47)
Other assets	(14)	15	43
Current liabilities	5	(82)	(38)
Long-term liabilities and equity	15	(17)	87
Total	\$ 5	\$ (89)	\$ 45

The above changes included transactions such as accrued taxes, deferred taxes, environmental liabilities, monetized positions from raw material and energy, currency, and certain interest rate hedges, equity investment dividends, prepaid insurance, miscellaneous deferrals, value-added taxes, and other miscellaneous accruals.

Cash flows from derivative financial instruments accounted for as hedges are classified in the same category as the item being hedged.

Cash paid for interest and income taxes is as follows:

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Interest, net of amounts capitalized	\$ 191	\$ 235	\$ 239
Income taxes	179	217	202
Non-cash investing activities:			
Outstanding trade payables related to capital expenditures	20	22	18

19. SEGMENT AND REGIONAL SALES INFORMATION

The Company's products and operations are managed and reported in four operating segments: Additives & Functional Products ("AFP"), Advanced Materials ("AM"), Chemical Intermediates ("CI"), and Fibers.

Additives & Functional Products Segment

In the AFP segment, the Company manufactures materials for products in the transportation, consumables, building and construction, animal nutrition, crop protection, energy, personal and home care, and other markets.

The products the Company manufactures in the adhesives resins product line consists of hydrocarbon and rosin resins, The animal nutrition business consists of organic acid-based solutions product lines. In 2020 the crop protection business combined with the care chemicals business as a result of business management realignment. The care chemicals business consists of amine derivative-based building blocks for the production of flocculants, intermediates for surfactants, fumigants, fungicides, and plant growth regulator products. The coatings and inks additives product line can be broadly classified as polymers and additives and solvents and include specialty coalescents, specialty solvents, paint additives, and specialty polymers. In the specialty fluids product line, the Company produces heat transfer and aviation fluids products. The tire additives product line includes insoluble sulfur rubber additives, antidegradant rubber additives, and performance resins.

	Percentage of Total Segment Sales		
Product Lines	**2020**	**2019**	**2018**
Adhesives Resins	16%	15%	16%
Animal Nutrition	8%	9%	10%
Care Chemicals	24%	22%	21%
Coatings and Inks Additives	25%	24%	23%
Specialty Fluids	13%	14%	13%
Tire Additives	14%	16%	17%
Total	100%	100%	100%

	Percentage of Total Segment Sales		
Sales by Customer Location	**2020**	**2019**	**2018**
United States and Canada	38%	37%	36%
Asia Pacific	24%	24%	24%
Europe, Middle East, and Africa	32%	33%	34%
Latin America	6%	6%	6%
Total	100%	100%	100%

Advanced Materials Segment

In the AM segment, the Company produces and markets polymers, films, and plastics with differentiated performance properties for value-added end-uses in transportation, consumables, building and construction, durable goods, and health and wellness markets.

The advanced interlayers product line includes polyvinyl butyral sheet and specialty polyvinyl butyral intermediates. The performance films product line primarily consists of window films and protective films products for aftermarket applied films. The specialty plastics product line consists of two primary products: copolyesters and cellulose esters.

	Percentage of Total Segment Sales		
Product Lines	**2020**	**2019**	**2018**
Advanced Interlayers	29%	32%	33%
Performance Films	20%	19%	18%
Specialty Plastics	51%	49%	49%
Total	100%	100%	100%

	Percentage of Total Segment Sales		
Sales by Customer Location	**2020**	**2019**	**2018**
United States and Canada	34%	34%	35%
Asia Pacific	33%	32%	33%
Europe, Middle East, and Africa	27%	28%	27%
Latin America	6%	6%	5%
Total	100%	100%	100%

Chemical Intermediates Segment

Eastman leverages large scale and vertical integration from the cellulose and acetyl, olefins, and alkylamines streams to support the Company's specialty operating segments with advantaged cost positions. The CI segment sells excess intermediates beyond the Company's internal specialty needs into markets such as industrial chemicals and processing, building and construction, health and wellness, and agrochemicals.

The functional amines product lines include methylamines and salts, and higher amines and solvents. In the intermediates product line, the Company produces olefin derivatives, acetyl derivatives, ethylene, and commodity solvents. The plasticizers product line consists of a unique set of primary non-phthalate and phthalate plasticizers and a range of niche non-phthalate plasticizers.

	Percentage of Total Segment Sales		
Product Lines	**2020**	**2019**	**2018**
Functional Amines	23%	20%	20%
Intermediates	57%	59%	60%
Plasticizers	20%	21%	20%
Total	100%	100%	100%

	Percentage of Total Segment Sales		
Sales by Customer Location	**2020**	**2019**	**2018**
United States and Canada	65%	64%	64%
Asia Pacific	13%	14%	15%
Europe, Middle East, and Africa	16%	15%	15%
Latin America	6%	7%	6%
Total	100%	100%	100%

Fibers Segment

In the Fibers segment, Eastman manufactures and sells cellulose acetate tow for use in filtration media, primarily cigarette filters. The acetate yarn product line consists of natural (undyed) acetate and polyester yarn for use in apparel, home furnishings, and industrial fabrics. The acetyl chemicals product line consists of triacetin, cellulose acetate flake, and acetyl raw materials for other acetate fiber producers. The nonwovens product line consists primarily of the nonwovens innovation products.

	Percentage of Total Segment Sales		
Product Lines	**2020**	**2019**	**2018**
Acetate Tow	70%	68%	69%
Acetate Yarn	9%	12%	10%
Acetyl Chemical Products	16%	15%	15%
Nonwovens	5%	5%	6%
Total	100%	100%	100%

Sales by Customer Location	Percentage of Total Segment Sales 2020	2019	2018
United States and Canada	26%	25%	26%
Asia Pacific	32%	32%	33%
Europe, Middle East, and Africa	39%	39%	37%
Latin America	3%	4%	4%
Total	100%	100%	100%

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Sales by Segment			
Additives & Functional Products	$ 3,022	$ 3,273	$ 3,647
Advanced Materials	2,524	2,688	2,755
Chemical Intermediates	2,090	2,443	2,831
Fibers	837	869	918
Total Sales	$ 8,473	$ 9,273	$ 10,151

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Earnings Before Interest and Taxes by Segment			
Additives & Functional Products	$ 312	$ 496	$ 639
Advanced Materials	427	517	509
Chemical Intermediates	166	170	308
Fibers	180	194	257
Total EBIT by Operating Segment	1,085	1,377	1,713
Other			
Growth initiatives and businesses not allocated to operating segments	(95)	(102)	(114)
Pension and other postretirement benefit plans income (expense), net not allocated to operating segments	(156)	(97)	(17)
Asset impairments and restructuring charges, net	(73)	(49)	(6)
Other income (charges), net not allocated to operating segments	(20)	(9)	(24)
Total EBIT	$ 741	$ 1,120	$ 1,552

(Dollars in millions)	December 31, 2020	2019
Assets by Segment (1)		
Additives & Functional Products	$ 6,238	$ 6,387
Advanced Materials	4,345	4,415
Chemical Intermediates	2,614	2,775
Fibers	978	1,014
Total Assets by Operating Segment	14,175	14,591
Corporate Assets	1,908	1,417
Total Assets	$ 16,083	$ 16,008

(1) The chief operating decision maker holds operating segment management accountable for accounts receivable, inventory, fixed assets, goodwill, and intangible assets.

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Depreciation and Amortization Expense by Segment			
Additives & Functional Products	$ 220	$ 218	$ 219
Advanced Materials	187	172	169
Chemical Intermediates	108	150	151
Fibers	56	64	64
Total Depreciation and Amortization Expense by Operating Segment	571	604	603
Other	3	7	1
Total Depreciation and Amortization Expense	$ 574	$ 611	$ 604

(Dollars in millions)	For years ended December 31, 2020	2019	2018
Capital Expenditures by Segment			
Additives & Functional Products	$ 126	$ 152	$ 150
Advanced Materials	140	130	187
Chemical Intermediates	84	98	137
Fibers	31	42	50
Total Capital Expenditures by Operating Segment	381	422	524
Other	2	3	4
Total Capital Expenditures	$ 383	$ 425	$ 528

Sales are attributed to geographic areas based on customer location and long-lived assets are attributed to geographic areas based on asset location.

(Dollars in millions) **Geographic Information**	For years ended December 31, 2020	2019	2018
Sales			
United States	$ 3,437	$ 3,720	$ 4,118
All foreign countries	5,036	5,553	6,033
Total	$ 8,473	$ 9,273	$ 10,151

	December 31, 2020	2019	2018
Net properties			
United States	$ 4,106	$ 4,178	$ 4,228
All foreign countries	1,443	1,393	1,372
Total	$ 5,549	$ 5,571	$ 5,600

20. QUARTERLY SALES AND EARNINGS DATA – UNAUDITED

(Dollars in millions, except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2020				
Sales	$ 2,241	$ 1,924	$ 2,122	$ 2,186
Gross profit	577	371	501	526
Asset impairments and restructuring charges, net	14	141	60	12
Net earnings attributable to Eastman	$ 258	$ 27	$ 161	$ 32
Net earnings per share attributable to Eastman(1)				
Basic	$ 1.90	$ 0.20	$ 1.19	$ 0.23
Diluted	$ 1.89	$ 0.20	$ 1.18	$ 0.23

(1) Each quarter is calculated as a discrete period; the sum of the four quarters may not equal the calculated full year amount.

(Dollars in millions, except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2019				
Sales	$ 2,380	$ 2,363	$ 2,325	$ 2,205
Gross profit	574	589	574	497
Asset impairments and restructuring charges, net	32	18	2	74
Net earnings attributable to Eastman	$ 209	$ 258	$ 266	$ 26
Net earnings per share attributable to Eastman(1)				
Basic	$ 1.50	$ 1.87	$ 1.95	$ 0.19
Diluted	$ 1.49	$ 1.85	$ 1.93	$ 0.19

(1) Each quarter is calculated as a discrete period; the sum of the four quarters may not equal the calculated full year amount.

21. RESERVE ROLLFORWARDS

Valuation and Qualifying Accounts

(Dollars in millions)	Balance at January 1, 2020	Additions: Charges (Credits) to Cost and Expense	Additions: Other Accounts	Deductions	Balance at December 31, 2020
Reserve for:					
Credit losses	$ 11	$ 4	$ —	$ 1	$ 14
LIFO inventory	248	(22)	—	—	226
Non-environmental asset retirement obligations	48	2	1	—	51
Environmental contingencies	287	8	—	10	285
Deferred tax valuation allowance	453	(61)	1	—	393
	$ 1,047	$ (69)	$ 2	$ 11	$ 969

(Dollars in millions)

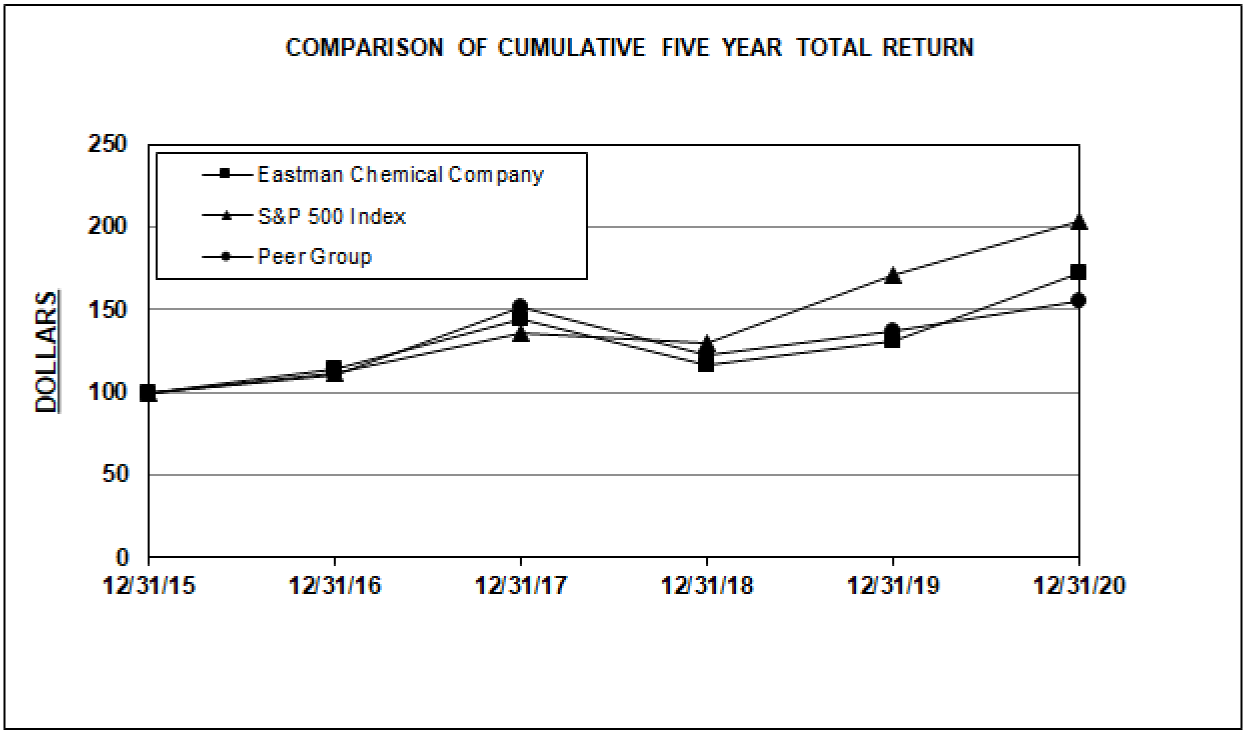
	Balance at January 1, 2019	Additions: Charges (Credits) to Cost and Expense	Additions: Other Accounts	Deductions	Balance at December 31, 2019
Reserve for:					
Credit losses	$ 11	$ —	$ —	$ —	$ 11
LIFO inventory	337	(89)	—	—	248
Non-environmental asset retirement obligations	46	2	—	—	48
Environmental contingencies	296	7	—	16	287
Deferred tax valuation allowance	487	(20)	(14)	—	453
	$ 1,177	$ (100)	$ (14)	$ 16	$ 1,047

(Dollars in millions)

	Balance at January 1, 2018	Additions: Charges (Credits) to Cost and Expense	Additions: Other Accounts	Deductions	Balance at December 31, 2018
Reserve for:					
Credit losses	$ 12	$ —	$ —	$ 1	$ 11
LIFO inventory	288	44	5	—	337
Non-environmental asset retirement obligations	49	(2)	—	1	46
Environmental contingencies	304	9	—	17	296
Deferred tax valuation allowance	410	81	(4)	—	487
	$ 1,063	$ 132	$ 1	$ 19	$ 1,177

PERFORMANCE GRAPH

The following graph compares the cumulative total return on Eastman Chemical Company common stock from December 31, 2015 through December 31, 2020 to that of the Standard & Poor's ("S&P") 500 Stock Index and a group of peer issuers in the chemical industry. The peer group consists of the fourteen chemical companies which meet three objective criteria: (i) common shares traded on a major trading market; (ii) similar lines of business to those of the Company; and (iii) more than $3 billion in annual sales. Cumulative total return represents the change in stock price and the amount of dividends received during the indicated period, assuming reinvestment of dividends. The graph assumes an investment of $100 on December 31, 2015. All data in the graph have been provided by S&P Capital IQ. The stock performance shown in the graph is included in response to Securities and Exchange Commission ("SEC") requirements and is not intended to forecast or to be indicative of future performance.



Company Name / Index	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020
Eastman Chemical Company	100	114.42	144.49	116.90	130.93	172.54
S&P 500 Index	100	111.96	136.40	130.42	171.49	203.04
Peer Group (1)	100	110.68	152.10	122.53	136.57	155.01

(1) The peer group for 2020 consists of the following issuers: Akzo Nobel NV; Albemarle Corporation; Ashland Global Holdings Inc.; Celanese Corporation; Dow Inc.; DuPont de Nemours, Inc.; FMC Corporation; Huntsman Corporation; International Flavors & Fragrances Inc.; Lanxess AG; LyondellBasell Industries NV; PPG Industries Inc.; The Sherwin Williams Company; and Westlake Chemical Corporation. In accordance with SEC requirements, the return for each issuer has been weighted according to the respective issuer's stock market capitalization at the beginning of each period for which a return is indicated.

EASTMAN

STOCKHOLDER INFORMATION

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In the United States: 800-937-5449
Outside the United States: (1) 212-936-5100 or (1) 718-921-8200
http://www.amstock.com

2021 Annual Meeting
Virtual via live webcast (https://register.proxypush.com/emn)
May 6, 2021
11:30 a.m. (EDT)

Eastman Stockholder Information
877-EMN-INFO (877-366-4636)
http://www.eastman.com
Stockholders of record at year-end 2020: 12,974
Shares outstanding at year-end 2020: 135,861,854
Employees at year-end 2020: approximately 14,500

Stock Exchange Listing
Eastman Chemical Company common stock is listed and traded on the New York Stock Exchange under the ticker symbol EMN.

Annual Report on Form 10-K

Eastman's Annual Report on Form 10-K for the year ended December 31, 2020, as filed with the Securities and Exchange Commission, is available upon written request of any stockholder to Eastman Chemical Company, P.O. Box 431, Kingsport, Tennessee 37662-5280, Attention: Investor Relations. This information is also available via the Internet at Eastman's Web site (www.eastman.com) in the investor information section, and on the SEC's website (www.sec.gov).

Board of Directors

Humberto P. Alfonso
Retired Chief Executive Officer, Global Yowie Group Ltd.

Vanessa L. Allen Sutherland
Executive Vice President and Chief Legal Officer
Norfolk Southern Corporation

Brett D. Begemann
Chief Operating Officer of Crop Science Division
Bayer AG

Mark J. Costa
Chief Executive Officer
and Board of Directors Chair
Eastman Chemical Company

Edward L. Doheny II
President and Chief Executive Officer
Sealed Air Corporation

Julie F. Holder
Retired Senior Vice President
The Dow Chemical Company

Renée J. Hornbaker
Retired Executive Vice President and Chief Financial Officer
Stream Energy

Kim Ann Mink
Retired President and Chief Executive Officer
Innophos Holdings, Inc.

James J. O'Brien
Retired Chairman of the Board and Chief Executive Officer
Ashland, Inc.

David W. Raisbeck
Retired Vice Chairman of the Board
Cargill, Incorporated

Charles K Stevens III
Retired Executive Vice President and Chief Financial Officer
General Motors Company

Executive Officers

Mark J. Costa
Chief Executive Officer

Lucian Boldea
Executive Vice President,
Additives & Functional Products
and Chemical Intermediates

Brad A. Lich
Executive Vice President and Chief Commercial Officer

Kellye L. Walker
Executive Vice President and Chief Legal Officer

Mark K. Cox
Senior Vice President, Chief Manufacturing, Supply Chain, and Engineering Officer

Stephen G. Crawford
Senior Vice President, Chief Technology & Sustainability Officer

William T. McLain, Jr.
Senior Vice President and Chief Financial Officer

Perry Stuckey III
Senior Vice President and Chief Human Resources Officer

Scott V. King
Vice President, Corporate Controller, and Chief Accounting Officer

EASTMAN

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