



BASF Report 2019

Economic, environmental and
social performance

 **BASF**

We create chemistry

BASF Group 2019

At a glance

Key data

		2019	2018	+/-
Sales ^a	million €	59,316	60,220	(1.5%)
EBITDA before special items ^a	million €	8,217	9,271	(11.4%)
EBITDA ^a	million €	8,036	8,970	(10.4%)
EBIT before special items ^a	million €	4,536	6,281	(27.8%)
EBIT ^a	million €	4,052	5,974	(32.2%)
Net income	million €	8,421	4,707	78.9%
ROCE ^a	%	7.7	12.0	–
Earnings per share	€	9.17	5.12	79.1%
Assets	million €	86,950	86,556	0.5%
Investments including acquisitions ^b	million €	4,097	10,735	(61.8%)

		2019	2018	+/-
Employees at year-end		117,628	122,404	(3.9%)
Personnel expenses	million €	10,924	10,659	2.5%
Research and development expenses ^a	million €	2,158	1,994	8.2%
Greenhouse gas emissions ^c	million metric tons of CO ₂ equivalents	20.1	21.9	(8.2%)
Energy efficiency in production processes	kilograms of sales product/MWh	598	626	(4.5%)
Accelerator sales	million €	15,017	14,284	5.1%
Number of on-site sustainability audits of raw material suppliers		81	100	(19.0%)

^a Restated figures; for more information, see the Notes to the Consolidated Financial Statements from page 204 onward.

^b Additions to intangible assets and property, plant and equipment

^c Excluding sale of energy to third parties

Segment data¹



Chemicals

Million €

Sales	2019	9,532
	2018	11,694
EBIT before special items	2019	791
	2018	1,587

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Materials

Million €

Sales	2019	11,466
	2018	13,270
EBIT before special items	2019	1,003
	2018	2,400

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Industrial Solutions

Million €

Sales	2019	8,389
	2018	9,120
EBIT before special items	2019	820
	2018	668

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Surface Technologies

Million €

Sales	2019	13,142
	2018	11,199
EBIT before special items	2019	722
	2018	617

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Nutrition & Care

Million €

Sales	2019	6,075
	2018	5,940
EBIT before special items	2019	793
	2018	736

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Agricultural Solutions

Million €

Sales	2019	7,814
	2018	6,156
EBIT before special items	2019	1,095
	2018	734

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¹ The segment data for 2018 has been restated to reflect the new segment structure. Figures do not include the construction chemicals activities presented as discontinued operations.

Welcome to BASF

Our integrated corporate report combines financial and sustainability reporting to inform shareholders, employees and the interested public about the 2019 business year.

Chemistry for a sustainable future

Business success tomorrow means creating value for the environment, society and business. Our innovations contribute to a sustainable future. We support our customers in being more sustainable through our solutions and create new business opportunities that reinforce our customer relationships and attract new customers. In doing so, we want to contribute to achieving the U.N. Sustainable Development Goals (SDGs). These were adopted by the United Nations as globally recognized economic, environmental and social objectives.

On the cover:

We want our customers to experience a new BASF – for example, in our Creation Centers. At these spaces full of inspiration and the latest technology, customers can discover BASF's high-performance plastics, explore potential applications and work hand-in-hand with BASF experts to create new products. This accelerates the process of transforming conceptual ideas to creative solutions. The photo shows our Creation Center in Shanghai, China, which we opened in August 2019. It is one of four of its kind worldwide.

[For more information on BASF's Creation Centers, see page 26](#)



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on each colored chapter divider

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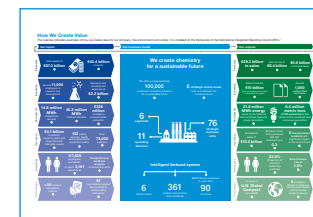
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How we create value – an
overview of BASF's business
model based on the IIRC
framework

[For more information, see page 23](#)





About This Report

Integrated reporting

This integrated report documents BASF's economic, environmental and social performance in 2019. We show how sustainability contributes to BASF's long-term success and how we as a company create value for our customers, employees, shareholders, business partners, neighbors and the public.

Further information

The following symbols indicate important information:

-  You can find more information in this report.
-  You can find more information online. The content of these links are voluntary disclosures that were not audited by the auditor.
-  The content of this section is not part of the statutory audit but has undergone a separate audit with limited assurance by our auditor.
-  The content of this section is voluntary, unaudited information, which was critically read by the auditor.

The BASF Report online

HTML version with additional features: basf.com/report

PDF version for download: basf.com/basf_report_2019.pdf

Content and structure

- Integrated BASF Report serves as U.N. Global Compact progress report
- Sustainability reporting in accordance with Global Reporting Initiative (GRI) standards
- Financial reporting according to International Financial Reporting Standards (IFRS), the German Commercial Code and German Accounting Standards (GAS)

The BASF Report combines the major financial and sustainability-related information necessary to thoroughly evaluate our performance.

We select the report's topics based on the following reporting principles: Materiality, sustainability context, completeness, balance and stakeholder inclusion. In addition to our integrated report, we publish further information online. Links to this supplementary information are provided in each section.

Our sustainability reporting has been based on Global Reporting Initiative (GRI) standards since 2003 and, since the BASF Report 2017, the "Comprehensive" option of the Global Reporting Initiative standards.

We have been active in the International Integrated Reporting Council (IIRC) since 2014 in order to discuss our experiences of integrated reporting with other stakeholders and at the same time, receive inspiration for enhancing our reporting. This report addresses elements of the IIRC framework by, for example, providing an illustrative overview of how we create value or demonstrating the relationships between financial and sustainability-related performance in the sections on the segments. The information in the BASF Report 2019 also serves as a progress report on BASF's implementation of the 10 principles of the United Nations' Global Compact and takes into consideration the Blueprint for Corporate Sustainability Leadership of the Global Compact LEAD platform.



The detailed GRI and Global Compact Index can be found in the online report. It provides an overview of all relevant information to fulfill the GRI indicators, as well as how we contribute to the United Nations' Sustainable Development Goals (SDGs)¹ and the principles of the U.N. Global Compact. The results of the limited assurance audit of this information can also be found here in the form of a report issued by KPMG AG Wirtschaftsprüfungsgesellschaft.

The information on the financial position and performance of the BASF Group comply with the requirements of International Financial Reporting Standards (IFRS), and, where applicable, the German Commercial Code, German Accounting Standards (GAS) and the guidelines on alternative performance measures from the European Securities and Markets Authority (ESMA). Internal control mechanisms ensure the reliability of the information presented in this report. BASF's management confirmed the effectiveness of the internal control measures and compliance with the regulations for financial reporting.

¹ Sustainable Development Goals (SDGs): SDG 1 – No poverty, SDG 2 – Zero hunger, SDG 3 – Good health and well-being, SDG 4 – Quality education, SDG 5 – Gender equality, SDG 6 – Clean water and sanitation, SDG 7 – Affordable and clean energy, SDG 8 – Decent work and economic growth, SDG 9 – Industry, innovation and infrastructure, SDG 10 – Reduced inequalities, SDG 11 – Sustainable cities and communities, SDG 12 – Responsible consumption and production, SDG 13 – Climate action, SDG 14 – Life below water, SDG 15 – Life on land, SDG 16 – Peace, justice and strong institutions, SDG 17 – Partnerships for the goals

Material topics along the value chain, which we identified in internal strategic discussion processes, ongoing global data analysis and dialog with shareholders, form the focal points of reporting and define the limits of this report.

For more information on our selection of sustainability topics, see page 36 onward and basf.com/materiality

For a visualization of BASF's business model based on the IIRC framework, see [How We Create Value](https://basf.com/how-we-create-value) on page 23 and basf.com/how-we-create-value

For more information on our control and risk management system, see page 139 onward

The 2019 BASF Online Report can be found at basf.com/report

For more information on the Global Reporting Initiative, see globalreporting.org

For more information on the Global Compact, see globalcompact.org and basf.com/en/global-compact

The GRI and Global Compact Index can be found at basf.com/en/gri-gc

Data

- **Relevant information included up to the editorial deadline of February 24, 2020**
- **Report published each year in English and German**

All information and bases for calculation in this report are founded on national and international standards for financial and sustainability reporting. The data and information for the reporting period were sourced from the expert units responsible using representative methods. The reporting period is the 2019 business year. Relevant information is included up to the editorial deadline of February 24, 2020. The report is published each year in English and German.

BASF Group's scope of consolidation for its financial reporting comprises BASF SE, with its headquarters in Ludwigshafen, Germany, and all of its fully consolidated subsidiaries and proportionally included joint operations. Shares in joint ventures and associated companies are accounted for, if material, using the equity method in the BASF Group Consolidated Financial Statements and are thus not included in the scope of consolidation.

The section "Employees" refers to employees active in a company within the BASF Group scope of consolidation as of December 31, 2019. All disclosures in this chapter include the employees of the discontinued construction chemicals business.

Our data collection methods for environmental protection and occupational safety are based on the recommendations of the International Council of Chemical Associations (ICCA) and the European Chemical Industry Council (CEFIC). In the section "Environmental Protection, Health and Safety," we report all data including information on the emissions and waste of the worldwide production sites of BASF SE, its fully consolidated subsidiaries, and proportionally consolidated joint operations. BASF SE subsidiaries that are fully consolidated in the Group financial statements in which BASF holds an interest of less than 100% are included in full in environmental reporting (previously: included on a pro rata basis). The emissions of proportionally consolidated joint operations continue to be disclosed pro rata according to our interest. Work-related accidents at all sites of BASF SE and its subsidiaries as well as joint operations and joint ventures in which we have sufficient authority in terms of safety management, are compiled worldwide regardless of our interest and reported in full. Unless otherwise indicated, further data on social responsibility and transportation safety refers to BASF SE and its consolidated subsidiaries.

For more information on companies accounted for in the Consolidated Financial Statements, see the Notes from page 201 onward

The Consolidated Financial Statements begin on page 185

The list of shares held can be found at basf.com/en/corporategovernance

External audit and evaluation

Our reporting is audited by a third party. KPMG AG Wirtschaftsprüfungsgesellschaft has audited the BASF Group Consolidated Financial Statements and the Management's Report and has approved them free of qualification. The audit of the Consolidated Financial Statements including the Notes is based on the likewise audited financial statements of the BASF Group companies.

Statements and figures pertaining to sustainability in the Management's Report are also audited by KPMG. The audit with limited assurance was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting. The links and additional content provided on the BASF internet sites indicated in this report are not part of the information audited by KPMG.

KPMG also conducted a substantive audit with limited assurance of the nonfinancial statement (NFS).

The Independent Auditor's Report can be found on page 187

A report on the sustainability information in the BASF Report 2019 can be found at basf.com/sustainability_information

A report on the substantive audit of the NFS can be found at basf.com/nfs-audit-2019

Forward-looking statements and forecasts

This report contains forward-looking statements. These statements are based on current estimates and projections of the Board of Executive Directors and currently available information. Forward-looking statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. Such risk factors include those discussed in Opportunities and Risks on pages 139 to 147. We do not assume any obligation to update the forward-looking statements contained in this report above and beyond the legal requirements.

1

To Our Shareholders

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Dear shareholder,

2019 was not only a year of transition for BASF as we had expected, it also turned out to be a very challenging year due to the market conditions. In this adverse environment, the BASF team implemented our corporate strategy with determination and passion. That is a great achievement! Many customers tell us they are beginning to notice a new BASF.

Contrary to our expectations at the beginning of the year, the economic climate weakened further in 2019. Trade conflicts, political uncertainties and considerably lower demand from key customer industries – especially the automotive industry – weighed on our businesses. For the commodities in the Chemicals and Materials segments, especially cracker products and isocyanates, the price declines were significantly steeper than forecast. In July, we therefore had to

lower our earnings guidance. That was bitter. Overall, we were thus unable to reach the financial targets we had communicated at the beginning of the year. Consequently, we are not satisfied with our results.

Nevertheless, in this challenging environment, we leveraged our strengths. In all of our consumer-oriented segments – Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions – we increased our results year on year despite the difficult conditions.

We tackled the areas that are within our control. We continued to rapidly reshape our portfolio and are making swift progress with the implementation of our excellence program. We realigned our organization and streamlined our administration. We have simplified processes and procedures and transformed ourselves into a more agile and customer-centric company.

With our strategy we are on the right path: Our customers are experiencing a new BASF. Together with them, we want to better exploit growth opportunities and intensify collaboration. In doing so, we are guided by our purpose: “We create chemistry for a sustainable future.” For the major challenges facing society, such as climate change, the circular economy and new mobility, we offer innovative solutions.

We have further optimized our portfolio. In mid-2019, we completed the integration of the businesses acquired from Bayer. We can now offer farmers worldwide a combined portfolio of agricultural solutions ranging from seeds, traits and crop protection to digital offerings. Our global polyamide business was expanded with the acquisition of businesses from Solvay and strengthened through backwards integration into the key raw material adipodinitrile (ADN). At the beginning of 2019, following approval from all regulatory authorities, we completed the transfer of our paper and water chemicals business to Solenis. At the end of April, together with LetterOne we merged the oil and gas businesses of Wintershall and DEA into the new company Wintershall Dea. We signed a



***With our strategy we
are on the right path:
Our customers are
experiencing a new BASF.***

contract in August to divest our global pigments business to the Japanese company DIC. At the end of the year, we reached an agreement with a subsidiary of the global private equity firm Lone Star on the sale of our construction chemicals business. We have therefore implemented or initiated all of our planned portfolio measures in 2019.



We are already profitable in China and growing faster than the market.

We are setting a course for long-term profitable growth. Our focus will be on investments in China and on battery materials. By 2030, around two-thirds of growth in global chemical production will come from China. The country will then account for approximately 50% of the global market. We are already profitable in China and growing faster than the market. Between 2015 and 2019, annual chemical production increased globally by 3% and in China

by 5%. We were able to increase our sales volumes in China by 7% per year. And at the same time, we increased our EBITDA – earnings before interest, taxes, depreciation and amortization – by 30% annually to more than €1 billion. With our investment of around \$10 billion in a fully integrated Verbund site in Zhanjiang in Guangdong province, we will expand our leading position as a western chemical company in the world's most important chemical market. Construction began in 2019 and the first plants are to start operations in 2022.

Our second growth focus is electromobility. E-mobility is creating a new major market for battery materials, which is growing at a double-digit rate. Cathode materials account for as much as 70% of the material costs of a battery cell. BASF is already an established supplier. With our investments in Harjavalta, Finland, and Schwarzheide, Germany, we are the first company to lay the foundation for a European battery materials value chain. For these projects, we are receiving government funding as part of the Important Project of Common European Interest (IPCEI) relating to electromobility. With the startup of production in Finland and Germany, BASF will be the only company producing battery materials in Asia, North America and Europe. We want to achieve above-average growth in this market.

To master global challenges, our society needs innovations based on chemistry more than ever before. At BASF, innovation and sustainability are inextricably linked. Many of our innovations contribute to achieving the United Nations Sustainable Development Goals. These goals provide us with a framework for sustainable development at the economic, environmental and social levels. We want to continue to significantly increase our sales and earnings with new and improved products – especially with Accelerator products, which make a particular contribution to sustainability in the value chain compared to competing products. By the year 2025, we want them to generate €22 billion in sales. In 2019, our sales of Accelerator products rose by 5% to €15 billion. Prominent examples of Accelerators are our battery materials for electromobility, automotive catalysts and materials for thermal insulation of buildings. They make a decisive contribution to reducing or avoiding CO₂ emissions all the way through to the end user.



At BASF, innovation and sustainability are inextricably linked.

Climate protection and the circular economy are important topics in politics and society. We must all contribute to lowering CO₂ emissions. BASF acknowledges this, which is why we have also set ourselves a clear target in our strategy: We want to grow CO₂-neutrally until 2030. This is ambitious. This makes us a pioneer in our industry and we are making good progress with measures and innovations in our Carbon Management program. With novel technologies and alternative feedstock sources, we want to shape a lower-emission future. Another contributor is our ChemCycling™ project. In the future, we want to use plastic waste as a raw material in our production. Our own initiatives will thus strengthen the circular economy. As a founding member of the Alliance to End Plastic Waste, we cooperate with more than 40 other companies throughout the value chain to put plastic waste to good use. The Alliance will invest \$1.5 billion within five years to develop and implement solutions for this global problem.

With its “Green Deal,” the new European Commission is pursuing ambitious climate targets. Everyone must join forces to realize these. To this end, we are developing innovative technologies, such as the electrification of chemical plants.

However, implementing these economically will require significant changes in the policy framework. This is the only way industry will be able to remain competitive during this transformation. In particular, we need better funding for future technologies and a more competitive and secure energy supply in Germany and Europe. Moreover, we require large volumes of renewable electricity on an industrial scale at internationally comparable prices.

BASF's successes are generated by our employees. For their skilled and passionate contributions, I thank them wholeheartedly on behalf of the entire Board of Executive Directors. It is our goal that more than 80% of our employees say they feel that at BASF they can thrive and perform at their best. In our 2019 global employee survey, 79% of participants agreed with the statement. In light of the ongoing change processes, this is a very pleasing result. Another positive aspect is the development of women in leadership positions within the BASF Group. Originally, we wanted to increase the share of women in such roles worldwide to 22 to 24% by 2021. We achieved this goal at the end of 2019 with a rate of 23%. We have therefore set ourselves a new target. By 2030, we want to increase the proportion of women in leadership positions to 30%. We want to engage more women in the leadership team at BASF and utilize their potential.

We stand by our dividend policy to increase the dividend per share each year. In 2019, we again generated a strong free cash flow. We will therefore propose to the Annual Shareholders' Meeting on April 30, 2020, that the dividend be increased by 10 euro cents to €3.30 per share. The BASF share therefore once more offers a high dividend yield of 4.9%. For many of you, the dividend is a key criterion for your investment decision. This is true now more than ever in this time of low interest rates, when shareholders are looking for reliable assets for long-term investments. The BASF share is this kind of asset.

BASF will have to continue to compete in a volatile economic environment. For 2020, we also expect a high level of economic uncertainty. The coronavirus is contributing to this. Global economic growth will likely be even slower than in 2019. We expect growth in global chemical production to be significantly below the 2019 level. We cannot influence global macroeconomic and geopolitical developments, but one thing is clear: Our team will do everything it can to achieve

the best possible results for 2020. We want to increase our sales to a level between €60 billion and €63 billion. We expect BASF Group's income from operations before special items to be between €4.2 billion and €4.8 billion. Our return on capital employed (ROCE) will therefore be between 6.7% and 7.7%. Even in this environment, we will continue to drive growth. We expect positive effects in particular from our ongoing Excellence Program, which we will accelerate compared to our original timeline.

I am optimistic that BASF will gain in strength in 2020 despite the economic headwinds. Because we have the passion and the expertise to be the partner of choice for our customers. For us, it is about creating sustainable value.

I thank you for your trust and for accompanying us on this journey.

Yours,

Martin Brudermüller



Our team will do everything it can to achieve the best possible results for 2020.



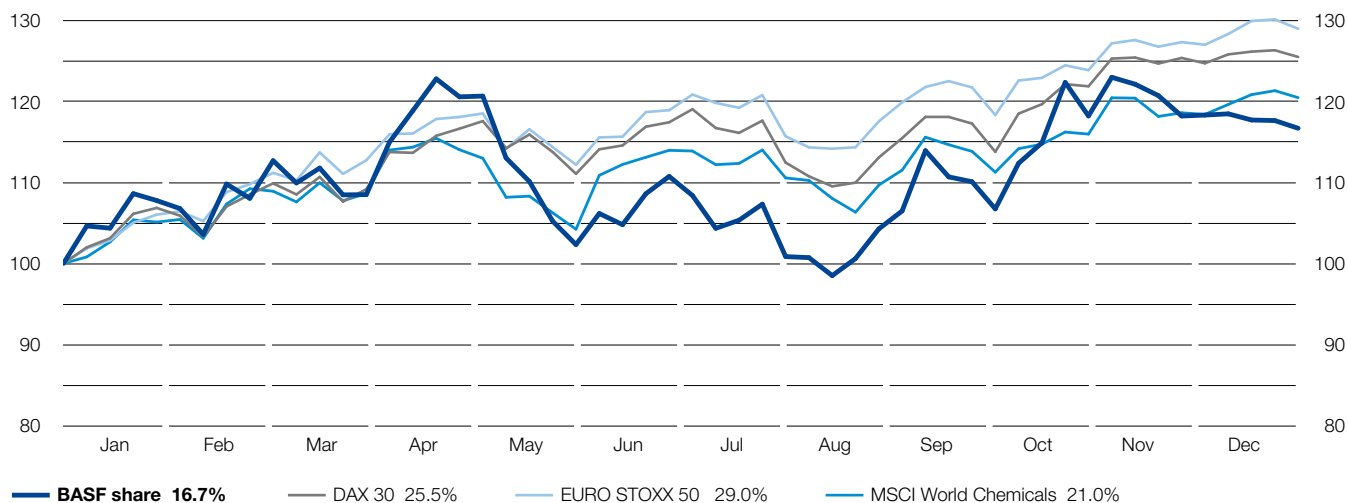
BASF on the Capital Market

In 2019, the stock markets were again characterized by long periods of uncertainty as a result of the trade conflicts, especially between the United States and China. Geopolitical tensions also contributed to a volatile stock market environment.

We stand by our ambitious dividend policy and will propose a dividend of €3.30 per share at the Annual Shareholders' Meeting – an increase of 10 euro cents compared with the previous year. Based on the year-end share price for 2019, BASF shares offer a high dividend yield of around 4.9%.

Change in value of an investment in BASF shares in 2019

With dividends reinvested; indexed



BASF share performance

- BASF share gains 11.5% in 2019
- Assuming that dividends were reinvested, BASF's share performance rose by 16.7%

The BASF share closed the 2019 stock market year with a closing price of €67.35, an increase of 11.5% compared with the previous year's closing price. Alongside the general brightening in market sentiment at the end of the year, the increase in BASF's share price was attributable to better earnings developments in BASF's downstream segments.

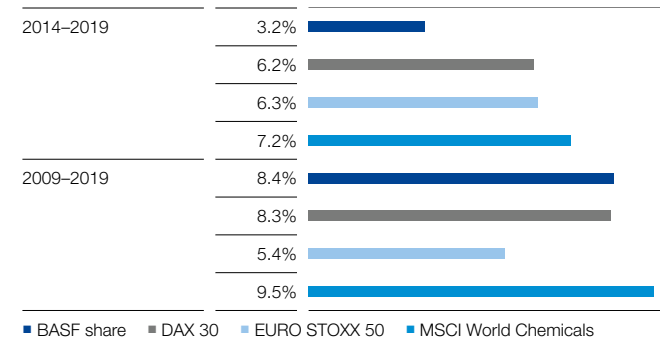
Assuming that dividends were reinvested, BASF's share performance rose by 16.7% in 2019. The benchmark indexes of the German and European stock markets – the DAX 30 and the EURO STOXX 50 –

rose by 25.5% and 29.0% over the same period, respectively. The global industry index MSCI World Chemicals gained 21.0%.

Viewed over a 10-year period, the long-term performance of BASF shares surpasses the German and European benchmark indexes. The assets of an investor who invested €1,000 in BASF shares at the end of 2009 and reinvested the dividends in additional BASF shares would have increased to €2,250 by the end of 2019. This represents an annual yield of 8.4%, placing BASF shares above the returns for the DAX 30 (8.3%) and the EURO STOXX 50 (5.4%).

Long-term performance of BASF shares compared with indexes

Average annual increase with dividends reinvested



Weighting of BASF shares in important indexes as of December 31, 2019

DAX 30	5.9%
EURO STOXX 50	2.3%
MSCI World Chemicals	6.5%

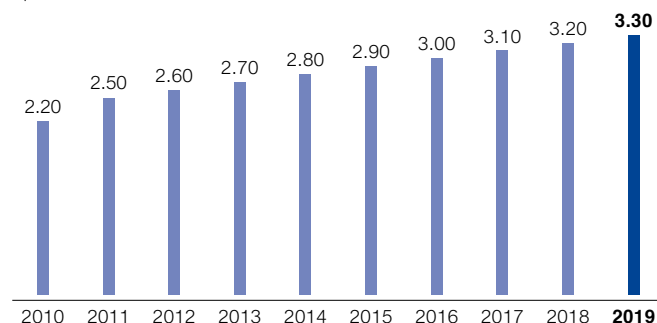
Proposed dividend of €3.30 per share

At the Annual Shareholders' Meeting, the Board of Executive Directors and the Supervisory Board will propose a dividend payment of €3.30 per share. We stand by our ambitious dividend policy of increasing our per-share dividend each year and plan to pay out €3.0 billion to our shareholders.

Based on the year-end share price for 2019, BASF shares offer a high dividend yield of around 4.9%. BASF is part of the DivDAX share index, which contains the 15 companies with the highest dividend yield in the DAX 30.

Dividend per share

€ per share



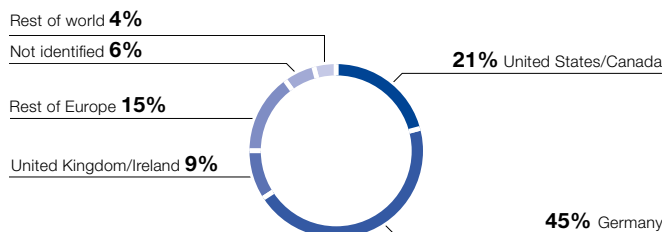
Broad base of international shareholders

With over 600,000 shareholders, BASF is one of the largest publicly owned companies with a high free float. An analysis of the shareholder structure carried out at the end of 2019 showed that, at around 21% of share capital, the United States and Canada made up the largest regional group of institutional investors. Institutional investors from Germany accounted for around 12%. Shareholders from the United Kingdom and Ireland hold 9% of BASF shares, while investors from the rest of Europe hold a further

15% of capital. Approximately 33% of the company's share capital is held by private investors, nearly all of whom reside in Germany. BASF is therefore one of the DAX 30 companies with the largest percentage of private shareholders.

Shareholder structure

By region, rounded



Employees becoming shareholders

In many countries, we offer share purchase programs that turn our employees into BASF shareholders. In 2019, for example, around 25,400 employees (2018: around 25,600) purchased employee shares worth €70.5 million (2018: €79 million).

For more information on employee share purchase programs, see page 130

BASF – a sustainable investment

- CDP again awards BASF Leadership status
- BASF continues to be included in MSCI ESG Ratings with score of AA

BASF has participated in CDP's program for reporting on data relevant to climate protection since 2004. CDP is an international organization representing more than 525 investors with over \$96 trillion in assets and more than 125 major purchasing organizations with \$3.5 trillion in purchasing power. In 2019, BASF achieved a score of A–, thus attaining Leadership status again.

In the scoring framework used by CDP in 2019, BASF is ranked among the best 20% of the participating chemical companies. In their assessment of the company's climate protection efforts and disclosure, the analysts identified, for instance, some potential for further development in the area of power supply from renewable energy sources. In the context of BASF's strategic goal of CO₂-neutral growth until 2030, such options are currently being explored.

In the CDP assessment for sustainable water management, BASF achieved the top grade of A and thus Leadership status. The assessment takes into account how transparently companies report on their water management activities and how they reduce risks such as water scarcity. CDP also evaluates the extent to which product developments can contribute to sustainable water management for customers of the companies assessed.

BASF continued to be included in the MSCI ESG Ratings in 2019 with a score of AA. The analysts highlighted BASF's Verbund system as a key competitive advantage for resource-efficient processes. BASF's emissions intensity for greenhouse gases and air pollutants – one of the lowest compared with competitors in the chemical industry – was also assessed positively.

For more information on the key sustainability indexes, see basf.com/sustainabilityindexes

For more information on energy and climate protection, see page 116 onward

For more information on air and soil, see page 123

Analysts' recommendations

Around 30 financial analysts regularly publish studies on BASF. The latest analyst recommendations for our shares as well as the average target share price ascribed to BASF by analysts can be found online at basf.com/analystestimates.

Close dialog with the capital market

- **Dialog with institutional investors and rating agencies**
- **Informational events for private investors**
- **Capital Markets Day Agricultural Solutions**

Our corporate strategy aims to create long-term value. We support this strategy through regular and open communication with all capital market participants. We engage with institutional investors and rating agencies in numerous one-on-one meetings, as well as at roadshows and conferences worldwide, and give private investors an insight into BASF at informational events.

In September 2019, we informed analysts and investors about the Agricultural Solutions division's new strategy at our Capital Markets Day in Ghent, Belgium. Following the integration of the businesses acquired from Bayer, which was completed in mid-2019, BASF can offer farmers a connected portfolio of agricultural solutions – from seeds, traits and crop protection products to digital solutions. This strategy is based on innovation-driven growth in selected markets with a focus on sustainable solutions.

Further information on BASF share

Securities code numbers

Germany	BASF11
United States (CUSIP number)	055262505
ISIN International Securities Identification Number	DE000BASF111

International ticker symbols

Deutsche Börse	BAS
Pink Sheets / OTCQX	BASFY (ADR)
Bloomberg (Xetra trading)	BAS GY
Reuters (Xetra trading)	BASFn.DE

In 2019, we offered special events aimed at investors who base their investment decisions on sustainability criteria. We outlined in particular our measures for climate protection, energy efficiency, and health and safety. In addition, we provided credit analysts and creditors with more information about our business and financing strategy at several creditor relations roadshows.

For more information on our credit ratings, see the Financial Position on page 55

Analysts and investors have confirmed the quality of our financial market communications. The IR Society recognized BASF with the Best Practice Award 2019 in the category "Most effective overall

communications – international." In the annual survey conducted by Britain's IR Magazine, we were named the best company for IR in the materials sector and took first place in the "Best IR website" category. Germany's Manager Magazin recognized BASF at the presentation of its Investors' Darling awards with first place in the digital communications category. Institutional Investor magazine also honored BASF with first place in the category "Best IR Team" and "Best IR Program" in the chemicals sector.

For more information about BASF stock, see basf.com/share

Register for the newsletter with current topics and dates at basf.com/share/newsletter

Contact the Investor Relations team by phone at +49 621 60-48230 or email ir@basf.com

Key BASF share data

		2015	2016	2017	2018	2019
Year-end price	€	70.72	88.31	91.74	60.40	67.35
Year high	€	96.72	88.31	97.46	97.67	74.49
Year low	€	65.74	56.70	79.64	58.40	56.20
Year average	€	79.28	70.96	88.16	80.38	64.77
Daily trade in shares ^a						
	million €	264.5	201.9	185.7	229.6	187.6
	million shares	3.3	2.9	2.1	2.9	2.9
Number of shares December 31	million shares	918.5	918.5	918.5	918.5	918.5
Market capitalization December 31	billion €	65.0	81.1	84.3	55.5	61.9
Earnings per share	€	4.34	4.42	6.62	5.12	9.17
Adjusted earnings per share	€	5.00	4.83	6.44	5.87	4.00
Dividend per share	€	2.90	3.00	3.10	3.20	3.30
Dividend yield ^b	%	4.10	3.40	3.38	5.30	4.90
Payout ratio	%	67	68	47	63	36
Price-earnings ratio (P/E ratio) ^b		16.3	20.0	13.9	11.8	7.3

^a Average, Xetra trading

^b Based on year-end share price

2

Management's Report

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We have bundled all measures that will help us reach our climate target and enable further reductions in the long term in our global carbon management.

For more information, see pages 121 and 122

Overview

The Management's Report comprises the chapter of the same name on pages 15 to 147, as well as the disclosures required by takeover law, the Compensation Report and the Declaration of Corporate Governance, which are presented in the Corporate Governance chapter. The Nonfinancial Statement (NFS) is integrated into the Management's Report.

Nonfinancial Statement (NFS) in accordance with sections 315b and 315c of the German Commercial Code (HGB)

The NFS disclosures can be found in the relevant sections of the Management's Report and have been prepared in accordance with the appropriate frameworks: the Global Reporting Initiative Standards ("Comprehensive" application option) and the reporting requirements of the U.N. Global Compact.

The table on the following page shows the sections and subsections in which the individual disclosures can be found. In addition to a description of the business model, the NFS includes disclosures on the following matters, to the extent that they are required to understand the development and performance of the business, the Group's position and the impact of business development on the following matters:

- Environmental matters
- Employee-related matters
- Social matters
- Respect for human rights
- Anti-corruption and bribery matters

Within the scope of the annual audit, the external auditor KPMG checked pursuant to section 317(2) sentence 4 HGB that the NFS was presented in accordance with the statutory requirements. KPMG also conducted a substantive audit with limited assurance of the NFS. A report on this substantive audit can be found online at basf.com/nfs-audit-2019. The audit was conducted in accordance with ISAE 3000 (Assurance Engagements other than Audits or Reviews of Historical Financial Information) and ISAE 3410 (Assurance Engagements on Greenhouse Gas Statements), the relevant international auditing standards for sustainability reporting.

Compensation Report and disclosures in accordance with section 315a HGB

The Compensation Report including the description of the principles of the compensation system in accordance with section 315a(2) HGB can be found in the Corporate Governance chapter from page 162 onward, and the disclosures in accordance with section 315a(1) HGB (takeover-related disclosures) from page 155 onward. They form part of the Management's Report, which is audited as part of the annual audit.

Consolidated Declaration of Corporate Governance in accordance with section 315d HGB in connection with section 289f HGB

The Consolidated Declaration of Corporate Governance in accordance with section 315d HGB in connection with section 289f HGB can be found in the Corporate Governance chapter from page 148 onward and is a component of the Management's Report. It comprises the Corporate Governance Report including the description of the diversity concept for the composition of the Board of Executive Directors and the Supervisory Board (excluding the disclosures required by takeover law in accordance with section 315a(1) HGB), compliance reporting and the Declaration of Conformity pursuant to section 161 of the German Stock Corporation Act. Pursuant to

section 317(2) sentence 6 HGB, the auditor checked that the disclosures according to section 315d HGB were made.

Recommendations of the Task Force on Climate-related Financial Disclosures

BASF supports the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Disclosures recommended by the TCFD are presented in a number of places throughout this report. The table on page 18 shows the sections and subsections in which the relevant information can be found. The table is divided into four key areas in line with the TCFD recommendations: governance, strategy, risk management, and metrics and targets.

Further information

The following symbols indicate important information:



You can find more information in this report.



You can find more information online. The content of these links are voluntary disclosures that were not audited by the auditor.



The content of this section is not part of the statutory audit but has undergone a separate audit with limited assurance by our auditor.



The content of this section is voluntary, unaudited information, which was critically read by the auditor.

Nonfinancial Statement (NFS) disclosures in the relevant chapters of the integrated report

NFS disclosure	Topics	Concepts and results
Business model	The BASF Group	Pages 19–22
Environmental matters	Process safety	Page 27 (targets) Pages 108 and 110–111 (targets, measures, results)
	Biodiversity	Page 105–107 (targets, measures, results)
	Energy and climate protection	Page 27 (targets) Pages 108 and 116–122 (targets, measures, results)
	Emergency response and corporate security	Pages 108 and 111–112 (targets, measures, results)
	Supplier management	Page 27 (targets) Pages 102–104 (targets, measures, results)
	Emissions to air	Pages 108 and 123 (targets, measures, results)
	Steering of product portfolio	Page 27 (targets) Pages 38–39 (targets, measures, results)
	Product stewardship	Page 27 (targets) Pages 108 and 113–114 (targets, measures, results)
	Transportation and storage	Pages 108 and 115 (targets, measures, results)
	Management of waste and contaminated sites	Pages 108 and 123 (targets, measures, results)
	Water	Page 27 (targets) Pages 108 and 124–125 (targets, measures, results)
Employee-related matters	Occupational safety	Page 27 (targets) Pages 108 and 109–110 (targets, measures, results)
	Dialog with employee representatives	Page 131 (targets, measures, results)
	Inclusion of diversity	Page 27 (targets) Page 128–129 (targets, measures, results)
	What we expect from our leaders	Page 127 (targets, measures, results)
	Health protection	Pages 108 and 111 (targets, measures, results)
	Global labor and social standards	Page 131–132 (targets, measures, results)
	Learning and development	Pages 129–130 (targets, measures, results)
	Supplier management	Page 27 (targets) Pages 102–104 (targets, measures, results)
	Employee engagement	Page 127 (targets, measures, results)
	Competition for talent	Page 129 (targets, measures, results)
Social matters	Compensation and benefits	Page 130 (targets, measures, results)
Respect for human rights	Social commitment	Page 41 (targets, measures, results)
Anti-corruption and bribery matters	Global labor and social standards	Page 131–132 (targets, measures, results)
	Supplier management	Page 27 (targets) Pages 102–104 (targets, measures, results)
	Responsibility for human rights	Page 40–41 (targets, measures, results)
	Compliance	Pages 157–158 (targets, measures, results)
	Supplier management	Page 27 (targets) Pages 102–104 (targets, measures, results)

Recommendations of the Task Force on Climate-related Financial Disclosures in the relevant chapters of the integrated report

Topic	Recommended disclosures	Section	Page
Governance Disclose the organization's governance around climate-related risks and opportunities.	Describe the board's ^a oversight of climate-related risks and opportunities.	Corporate Governance Report – Direction and management by the Board of Executive Directors Report of the Supervisory Board – Supervisory Board meetings	Page 149–150 Page 177
	Describe management's ^b role in assessing and managing climate-related risks and opportunities.	Integration of Sustainability – Strategy	Page 36–37
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. ^c	Opportunities and Risks – Short-term opportunities and risks Opportunities and Risks – Long-term opportunities and risks	Page 142–144 Page 145–147
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Carbon management as a climate protection tool Water Integration of Sustainability – Steering of product portfolio based on sustainability performance Opportunities and Risks – Short-term opportunities and risks Opportunities and Risks – Long-term opportunities and risks	Page 121–122 Page 124–125 Page 38–39 Page 142–144 Page 145–147
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. ^d		
Risk management Disclose how the organization identifies, assesses, and manages climate-related risks.	Describe the organization's processes for identifying and assessing climate-related risks. ^e	Opportunities and Risks – Risk management process Supplier Management – Training and partnerships	Page 140–142 Page 103
	Describe the organization's processes for managing climate-related risks.	Opportunities and Risks – Risk management process Opportunities and Risks – Long-term opportunities and risks	Page 140–142 Page 145–147
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Opportunities and Risks – Risk management process	Page 140–142
Metrics and targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Energy and climate protection – Global goals and measures Water – Global goal and measures Integration of Sustainability – Steering of product portfolio based on sustainability performance	Page 117–119 Page 124–125 Page 38–39
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Energy and climate protection – Strategy Energy and climate protection – Global goals and measures	Page 116–117 Page 117–119
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Energy and climate protection – Strategy Water – Strategy Integration of Sustainability – Steering of product portfolio based on sustainability performance	Page 116–117 Page 124 Page 38–39

^a Refers to the Supervisory Board

^b Refers to the Board of Executive Directors and senior executives

^c We report comprehensively on climate-related opportunities and risks in reporting to CDP on data relevant to climate protection.

^d To steer our greenhouse gas emissions, in 2019 we launched a project to derive and evaluate long-term strategic scenarios, taking into account different levels of global warming.

^e Climate-related risks are identified, assessed and managed as part of the general risk management process.

The BASF Group

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 118,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is divided into the Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions segments.

Organization of the BASF Group in 2019

As of January 1, 2019, we have 11 divisions grouped into six segments as follows:

- **Chemicals:** Petrochemicals, Intermediates
- **Materials:** Performance Materials, Monomers
- **Industrial Solutions:** Dispersions & Pigments, Performance Chemicals
- **Surface Technologies:** Catalysts, Coatings
- **Nutrition & Care:** Care Chemicals, Nutrition & Health
- **Agricultural Solutions:** Agricultural Solutions

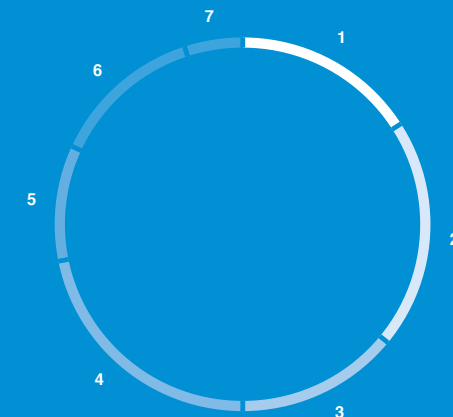
The segment data for 2018 presented in this report has been restated to reflect the new segment structure.

On December 21, 2019, BASF and an affiliate of Lone Star, a global private equity firm, signed an agreement on the sale of BASF's construction chemicals business. The purchase price on a cash and debt-free basis is €3.17 billion. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant competition authorities. The Construction Chemicals division was previously reported under the Surface Technologies segment. The signing of the agreement had an immediate effect on the reporting of BASF Group. Retroactively as of January 1, 2018,

Structure of BASF

Percentage of total sales in 2019

1	Chemicals	– Petrochemicals – Intermediates	16%
2	Materials	– Performance Materials – Monomers	20%
3	Industrial Solutions	– Dispersions & Pigments – Performance Chemicals	14%
4	Surface Technologies	– Catalysts – Coatings	22%
5	Nutrition & Care	– Care Chemicals – Nutrition & Health	10%
6	Agricultural Solutions	– Agricultural Solutions	13%
7	Other		5%



Intelligent Verbund concept

Production, technology, market, digitalization

In 90+ countries

employees contribute to our success and that of our customers

New segment structure

since January 1, 2019

Organizational realignment

for greater customer proximity, increased competitiveness and profitable growth

sales and earnings of the Construction Chemicals division are no longer included in sales, EBITDA, EBIT and EBIT before special items of the BASF Group. Until closing, the income after taxes of the construction chemicals business will be presented in the income after taxes of BASF Group as a separate item ("Income after taxes from discontinued operations").

Following the approval of all relevant authorities, BASF and LetterOne completed the merger of Wintershall and DEA on May 1, 2019. In

September 2018, BASF and LetterOne had signed a transaction agreement to merge their respective oil and gas businesses in a joint venture. Shareholder loans were replaced by bank loans in the course of the merger. Since May 1, 2019, BASF's participating interest in Wintershall Dea has been reported in the Consolidated Financial Statements of the BASF Group according to the equity method, with an initial valuation at fair value. The gain from the transition from full consolidation to the equity method is shown in income after taxes from discontinued operations. Since May 1, 2019,

BASF has reported its share of Wintershall Dea's net income in EBIT before special items and in EBIT of the BASF Group, presented under Other. BASF and LetterOne intend to list Wintershall Dea on the stock exchange by way of an initial public offering (IPO) in the second half of 2020, provided market conditions are suitable.

The disclosures and indicators in the Management's Report on sustainability in 2019 no longer include data on Wintershall. The construction chemicals business is included in the disclosures on environmental protection, health and safety, employees and compliance, but has already been removed from the sales-related sustainability figures. The business acquired from Bayer in 2018 is included in the indicators. Exceptions are explained in the corresponding sections in the chapters concerned.

In addition to the segment structure, the composition of a number of divisions also changed as of January 1, 2019. The propylene oxide and propylene glycol business was transferred from the Petrochemicals division to the Monomers division. The superabsorbents business is now allocated to the Petrochemicals division rather than the Care Chemicals division. The styrene, polystyrene and styrene-based foams business, which previously mainly fell under the Performance Materials division and a small part under Other, is now bundled in the Petrochemicals division.

BASF's new segment structure allows for a more differentiated steering of our businesses according to their market-specific competitive environment. It increases transparency regarding the results of our segments and divisions and highlights the importance of the Verbund and value chains to our business success. BASF aims to clearly position its businesses against their relevant competitors and establish a high-performance organization to enable BASF to be successful in an increasingly competitive market environment.

Our divisions bear operational responsibility here and are organized according to sectors or products. They manage our 54 global and regional business units and develop strategies for the 76 strategic business units.¹

Our regional and country organizations help to leverage market potential. For financial reporting purposes, we organize the regional divisions into four regions: Europe; North America; Asia Pacific; South America, Africa, Middle East.

Together with our divisions, the three global research divisions – Process Research & Chemical Engineering, Advanced Materials & Systems Research and Bioscience Research – safeguard our innovative capacity and competitiveness.

Business processes such as the procurement of raw materials and services, production and transport to customers were the shared responsibility of the divisions and the functional units in 2019. Seven functional units and eight corporate units supported the BASF Group's business activities. The functional and corporate units provided services in the areas of finance, human resources, tax and legal, engineering, site management, purchasing and logistics, environmental protection, health and safety, investor relations, and communications. As part of the further development of the corporate strategy, in 2019 BASF embedded business-critical parts of its functional units into the divisions, such as engineering services, procurement and logistics. This increased customer proximity and improved customer-specific agility. We have also created leaner structures in our functional units, research and development and in governance functions.

[For more information on the products and services offered by the segments, see from pages 63, 69, 74, 80, 85 and 91 onward](#)

[For more information on the new segment structure as of January 1, 2019, see the Notes to the Consolidated Financial Statements from page 219 onward](#)

Organizational realignment as of January 1, 2020

BASF has created the conditions for greater customer proximity, increased competitiveness and profitable growth with an organizational realignment as part of the implementation of its strategy. We are streamlining our administration, sharpening the roles of services and regions, and simplifying procedures and processes as part of our ongoing Excellence Program. Customer-focused operating divisions, cross-functional service units and regions as well as a lean Corporate Center are the cornerstones of the new organization.

The Corporate Center units support the Board of Executive Directors in steering the company as a whole. These include central tasks from the following areas: strategy; finance; law, compliance and tax; environmental protection, health and safety; human resources; communications; investor relations and internal audit.

In addition, four global service units were established: Global Engineering Services and Global Digital Services offer services for individual sites, globally for the divisions or other units of the BASF Group. Global Procurement makes purchasing even more effective. The newly established Global Business Services unit will be a global, flexible and demand-driven service unit that strengthens the competitiveness of the divisions and provides services in areas such as finance, human resources, environmental protection, health and safety, intellectual property, communications, supply chain and consulting.

The role of regions and countries is being sharpened. Going forward, they will primarily represent BASF locally and even better support the growth of business units with local proximity to customers.

The ongoing Excellence Program is expected to contribute €2 billion to EBITDA annually from the end of 2021 onward compared with baseline 2018. BASF expects a reduction of a total of around 6,000 positions worldwide until the end of 2021. This decrease results from the organizational simplification and from efficiency gains in

¹ Excluding the construction chemicals activities presented as discontinued operations

administration, the service units and the operating divisions. In addition, central, functional and regional structures are being streamlined in the context of the announced portfolio changes.

[For more information on portfolio changes, see page 42](#)

Sites and Verbund

BASF has companies in more than 90 countries. We operate six Verbund sites and 361 additional production sites worldwide. Our Verbund site in Ludwigshafen, Germany, is the world's largest

chemical complex owned by a single company that was developed as an integrated network. This was where the Verbund principle was originally established and continuously optimized before being implemented at additional sites.

The Verbund system is one of BASF's great strengths. We add value by using our resources efficiently. The Production Verbund intelligently links production units and their energy supply so that, for example, the waste heat of one plant provides energy to others. Furthermore, one facility's by-products can serve as feedstock

elsewhere. This not only saves us raw materials and energy, it also avoids emissions, lowers logistics costs and leverages synergies.

We also make use of the intelligent Verbund principle for more than production, applying it for technologies, the market and digitalization as well. Expert knowledge is pooled in our global research divisions.

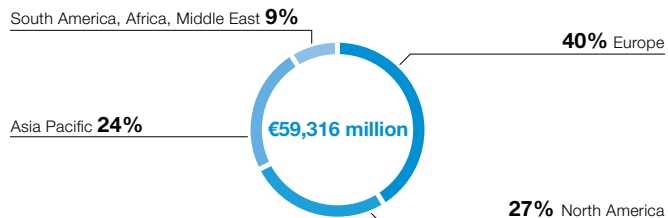
[For more information on the Verbund concept, see basf.com/en/verbund](https://basf.com/en/verbund)

BASF sites



BASF sales by region 2019

Location of customer



Procurement and sales markets

- Around 100,000 customers; broad customer portfolio
- More than 75,000 suppliers

BASF supplies products and services to around 100,000 customers¹ from various sectors in almost every country in the world. Our customer portfolio ranges from major global customers and medium-sized businesses to end consumers.

We work with over 75,000 Tier 1 suppliers² from different sectors worldwide. They supply us with important raw materials, chemicals, investment goods and consumables, and perform a range of services. Important raw materials (based on volume) include naphtha, liquid gas, natural gas, benzene and caustic soda.

[For more information on customers, see page 25; for more information on suppliers, see page 102 onward](#)

BASF sales by industry 2019

Direct customers

> 20%	Chemicals and plastics
10–20%	Agriculture Consumer goods Transportation (in each case)
< 10%	Construction Electronics Energy and resources Health and nutrition (in each case)

Business and competitive environment

BASF's global presence means that it operates in the context of local, regional and global developments and a wide range of conditions. These include:

- Global economic environment
- Legal and political requirements (such as European Union regulations)
- International trade agreements
- Industry standards
- Environmental agreements (such as the E.U. Emissions Trading System)
- Social aspects (such as the U.N. Universal Declaration of Human Rights)

BASF holds one of the top three market positions in around 70% of the business areas in which it is active. Our most important global competitors include Arkema, Bayer, Clariant, Corteva, Covestro, Dow, Dupont, DSM, Evonik, Formosa Plastics, Huntsman, Lanxess, SABIC, Sinopec, Solvay, Syngenta, Wanhua and many hundreds of local and regional competitors. We expect competitors from Asia and the Middle East in particular to gain increasing significance in the years ahead.

Corporate legal structure

As the publicly traded parent company of the BASF Group, BASF SE takes a central position: Directly or indirectly, it holds the shares in the companies belonging to the BASF Group, and is also one of the largest operating companies. The majority of Group companies cover a broad spectrum of our business. In the BASF Group Consolidated Financial Statements, 295 companies including BASF SE are fully consolidated. We consolidate seven joint operations on a proportional basis, and account for 25 companies using the equity method.

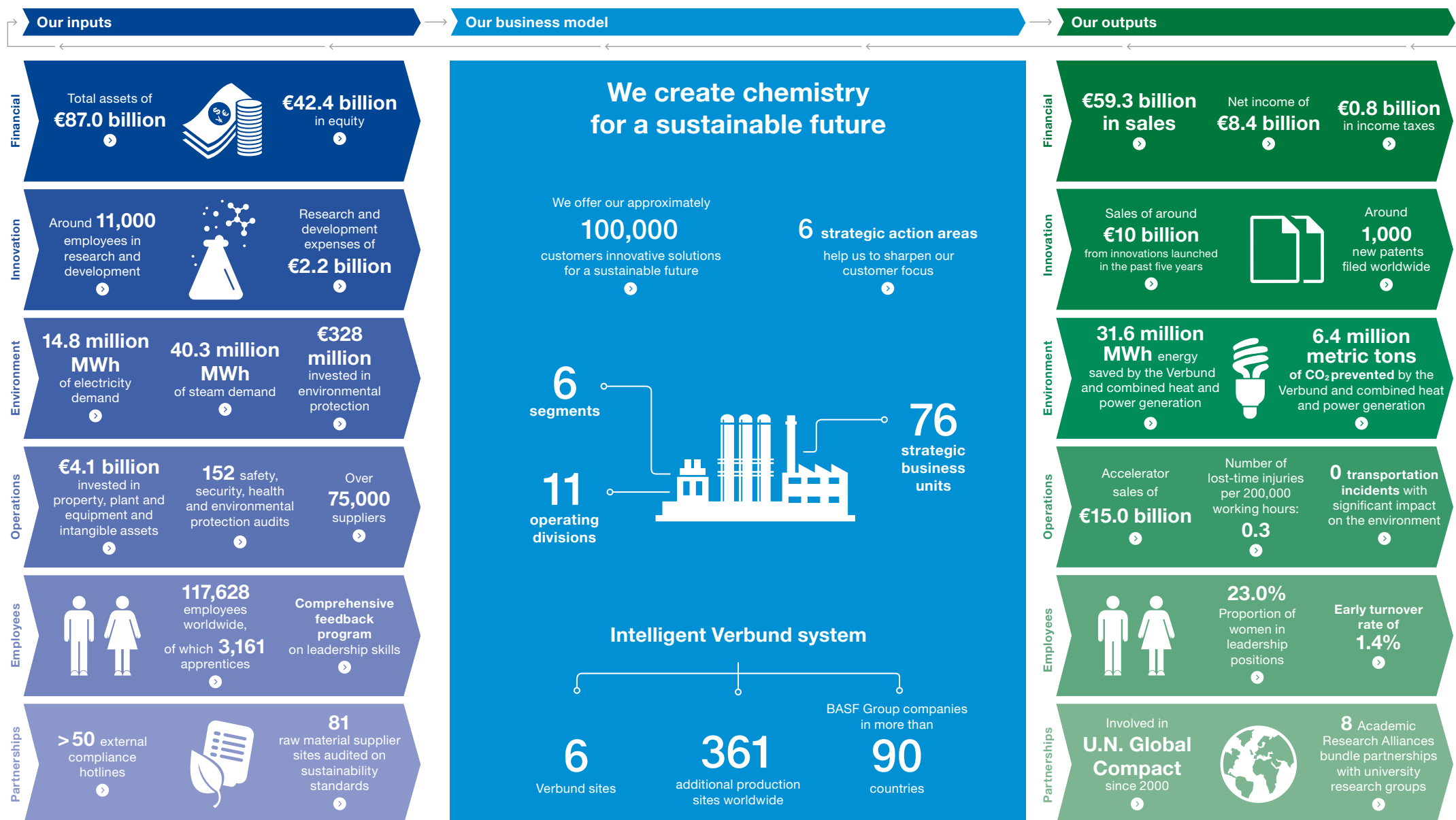
[For more information, see the Notes to the Consolidated Financial Statements from page 206 onward](#)

¹ The number of customers refers to all external companies (sold-to parties) that had contracts with the BASF Group in the business year concerned under which sales were generated.

² BASF considers all direct suppliers of the BASF Group in the business year concerned as Tier 1 suppliers. These are suppliers that provide us with raw materials, investment goods, consumables and services. Suppliers can be natural persons, companies or legal persons under public law.

How We Create Value

The overview provides examples of how we create value for our company, the environment and society. It is modeled on the framework of the International Integrated Reporting Council (IIRC).¹



¹ The figures in this graphic have been audited within the scope of the relevant sections of the Management's Report in which they appear.

Our Strategy

Corporate Strategy

At BASF, we are passionate about chemistry and our customers. To be the world's leading chemical company for our customers, we will grow profitably and create value for society. Thanks to our expertise, our innovative and entrepreneurial spirit, and the power of our Verbund integration, we make a decisive contribution to changing the world we live in for the better. This is our goal. This is what drives us and what we do best: We create chemistry for a sustainable future.

Today, the world is changing more rapidly than ever before, driven by demographic change and new digital technologies. Our customers in different industries and regions face diverse social and environmental challenges due to limited natural resources, climate change and the increasing demands of a growing global population. Chemistry is key to solving many of these challenges. By combining our unique expertise with our customers' competence, we can jointly develop profitable, innovative and sustainable solutions for these global challenges.

Our purpose reflects what we do and why we do it: We create chemistry for a sustainable future. We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. This is why we offer products and solutions that are designed to

Corporate purpose

We create chemistry for a sustainable future

Global trends provide opportunities for growth in the chemical industry

Demographic change:

Share of population aged 60 and over worldwide

+100%
2020 to 2050

Population growth:

Driven by the emerging markets

+25%
2020 to 2050

China the largest market:

Share of global chemical market

~50%
by 2030

Digitalization:

Rapid growth in volume of data

456
zettabytes in 2030

Climate change:

Required reduction of greenhouse gas emissions to achieve the 2°C goal

-70%
by 2050

Electromobility:

Growing demand for battery materials until 2030

+20–25%
per year

Sources: UN, IEA, UBS Foresight, BASF

make the best use of available resources and help to overcome challenges.

Our aspiration is to be the world's leading chemical company and achieve profitable growth. We aim to primarily grow organically and thus are strengthening our customer focus. Our growth strategy is based on investment in strategic growth markets and innovation-driven sectors. The Asian market continues to play a key role here. With a share of more than 40%, China is already the world's largest chemical market and drives the growth of global chemical production. By 2030, China's share will increase to nearly 50% – and we want to participate in this growth. To further our growth in this

dynamic market, we plan to build an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong. We also want to expand our existing joint venture with Sinopec at the Verbund site in Nanjing.]

For more information on our strategy, see basf.com/strategy

Customer Orientation

Our customers are our number one priority. We want to view everything we do through the lens of customer relevance. BASF supplies products and services to around 100,000 customers¹ from various sectors in almost every country in the world. Our customer portfolio ranges from major global customers and medium-sized businesses to end consumers.

Around 100,000

customers from almost all sectors and countries in the world

Innovations and tailored solutions

in close partnership with our customers

Flexible

thanks to in-depth expertise and wide range of resources

Customer focus and customer industry orientation

- **BASF puts customers at the center of its decisions and activities**
- **Closer dialog with our customers to increase customer satisfaction**

To be the world's leading chemical company for our customers, we want to further strengthen our customer focus throughout the entire organization. This is why we are aligning our business even closer with the needs of our customers.

Our diverse portfolio – from basic chemicals to high value-added products and system solutions – means that we are active in many value chains and value creation networks. As a result, we use various business strategies, which we flexibly adapt to the needs of individual industries. These range from cost leadership to tailored, customer-specific solutions for downstream products. This industry orientation is primarily driven forward and enhanced by the divisions. Around half of our business units are oriented toward specific industries.

We are continually refining our organization to even better meet the different needs of our customers. In 2019, we embedded significant parts of our functional services – including parts of research and development, IT, procurement, human resources and communications – into the operating divisions. This makes the operating divisions more agile, enabling them to target specific market demands and differentiate themselves from the competition. We also simplified processes to make the way we work more effective, more efficient and more agile. The objective is to satisfy customer requests in a more focused and targeted way and improve our reaction times so that our customers experience a new BASF.

We aim to put the customer at the center of our decisions and everything we do. Our ability to optimally combine our in-depth expertise with our wide range of resources reflects our ambition to be more than just a supplier. We position ourselves as a solution-oriented system provider. We want to work closely with our partners to develop custom solutions that are both profitable and sustainable. We contribute our expertise to optimize processes and applications together with our customers.



BASF and HYMER: Creating innovation together

The VisionVenture concept vehicle is a good example of how we create innovations for the future in close partnership with our customers. BASF and HYMER GmbH & Co. KG, Bad Waldsee, Germany, the European market leader for motor homes and campers, show what a campervan could look like in 2025. More than 20 BASF solutions open up entirely new design options and functionalities, including various high-performance plastics, over 100 3D-printed components, a tailored package of measures for preventing noises and vibrations, and a new coating technology. In less than twelve months, HYMER and BASF together turned their ideas and expertise into a near-production concept campervan. The VisionVenture was unveiled to the public in August 2019.

For more information on the collaboration with HYMER and the BASF materials used in the VisionVenture, see basf.com/en/vision-venture

¹ The number of customers refers to all external companies (sold-to parties) that had contracts with the BASF Group in the business year concerned under which sales were generated.

To even better understand our customers' needs, we regularly ask them for feedback on our performance. In 2019, we rolled out the Net Promoter System® worldwide to establish ongoing, closer dialog with customers and further increase customer satisfaction and customer loyalty. This digital platform creates a framework to learn from feedback and respond quickly.

In 2019, we also worked on an expanded IT-based customer relationship management system. We want to roll out this state-of-the-art, even more user-friendly application in 2020 to help sales employees deliver customer support.

We are also pursuing a series of measures that will increase transparency for our customers, enhance customer service and explore joint growth potential. Our comprehensive understanding of value chains and value creation networks as well as our global setup and market knowledge remain key success factors.

For more information on the organizational structure of the BASF Group, see page 19 onward

For more information on the segments and their divisions, see page 60 onward

Quality management

Our customers' satisfaction is the basis for our business success, which is why quality management is of vital significance for BASF. We strive to continually improve processes and products. This is also reflected in our Global Quality Policy. The majority of our production sites and business units are certified according to ISO 9001.¹ In addition, we also meet industry and customer-specific quality requirements that go beyond the ISO standard.

Customer awards

We again received awards from a number of satisfied customers in 2019. For example, in May 2019 we were named a 2018 General Motors (GM) Supplier of the Year for the fourteenth time since 2002. The award is presented to suppliers who distinguish themselves by meeting performance metrics for quality, execution, innovation and total enterprise cost. GM also recognized us in June with the Sustainability Partner award, the first to be given to a supplier.

The Haier industrial group presented the Golden Magic Cube award to BASF-YPC Company Limited, a 50-50 joint venture between BASF and Sinopec, for the third time in a row in March 2019. The award recognizes, among other things, high product quality, service reliability and a strong customer focus.

In March 2019, Airbus presented us with our fifth Supply Chain & Quality Improvement award. Airbus highlighted in particular the consistently high delivery reliability and quality of the products Naftoseal® and Ardrex®, which we market under the Chemetall brand.

In July 2019, Jaguar Land Rover (JLR) recognized BASF for the first time with the Customer First Recognition Award in gold for outstanding customer focus. An interdisciplinary team at BASF has supported JLR for many years now with innovative solutions for automotive OEM coatings, including the CathoGuard® 800 RE technology and basecoats to realize the individual color preferences of JLR customers in the premium segment. The award honors partners that demonstrate JLR's principles – personalized, transparent, easy to do business with, dependable and make one feel special – which are crucial to the automotive manufacturer's success.



Creation Center: From inspiration to solution in one place

Discover, understand, create – this is what we offer our customers with the new Creation Centers. These creative centers bring together our comprehensive materials, design, and – in particular – our development expertise in high-performance plastics using the latest visualization technologies. This enables us to address the specific individual needs of our customers and partners, and together transform ideas into tailored products and applications even more quickly. The first Creation Center opened in Mumbai, India, in May 2019. Yokohama, Japan, and Shanghai, China, followed in August 2019. Our fourth Creation Center worldwide opened in Ludwigshafen, Germany, in early 2020.

For more information on BASF's Creation Centers, see basf.com/en/creation-center

¹ ISO 9001 is a standard published by the International Organization for Standardization (ISO) and sets out the requirements for a quality management system.

Our Targets

Business success tomorrow means creating value for the environment, society and business. We have set ourselves ambitious global targets along our entire value chain. We report transparently on our target achievement so that our customers, investors, employees and other stakeholders can track our progress.

We want to grow faster than the market and thus be economically successful and profitable. Furthermore, we want to provide answers to the most pressing challenges of our time. To combat climate change and global warming, we have resolved to limit total greenhouse gas emissions from our production sites and our energy purchases to the 2018 level while growing production volumes. In other words, we want to decouple greenhouse gas emissions from organic growth. We have also defined targets for safety for people and the environment, a sustainable product portfolio, responsible procurement, sustainable water management, engaged employees, and inclusion of diversity.

The objective of these targets is to steer our business into a sustainable future and, at the same time, contribute to the implementation of the United Nations' Sustainable Development Goals (SDGs).¹ We are focusing on issues where we as a company can make a significant contribution, such as climate protection, sustainable consumption and production, and fighting hunger.

¹ For more information on the Sustainable Development Goals (SDGs), see About This Report on page 5 and online at sustainabledevelopment.un.org

² Return on capital employed (ROCE) is a measure of the profitability of our operations. We calculate this indicator as the EBIT generated by the segments as a percentage of the average cost of capital basis.

³ Dividend proposed by the Board of Executive Directors

⁴ Accelerator products are products that make a substantial sustainability contribution in the value chain.

⁵ We understand relevant spend as procurement volumes with suppliers defined as "relevant." For more information, see page 102

Status of Target Achievement in 2019

Grow **sales volumes** faster than **global chemical production** every year

-3%

(Global chemical production: 1.8%)



For more information, see page 47

Increase **EBITDA before special items** by **3-5%** per year

-11%



For more information, see page 49

Grow **CO₂-neutrally** until 2030 (Development of carbon emissions compared with baseline 2018)

-8.2%



For more information, see pages 116 to 122

Reduce worldwide **process safety incidents** per 200,000 working hours to **≤0.1** by 2025

0.3



For more information, see pages 110 to 111

Introduce sustainable **water management** at all production sites in **water stress areas** and at all **Verbund sites** by 2030

35.8%



For more information, see pages 124 to 125

Increase the proportion of **women in leadership positions** with disciplinary responsibility to **22-24%** by 2021

23%

New target for 2030: 30%



For more information, see pages 128 to 129

Achieve a **return on capital employed (ROCE)²** considerably **above the cost of capital percentage** every year

7.7%

(Cost of capital: 10%)



For more information, see page 48

Increase the **dividend per share** every year based on a **strong free cash flow**

€3.30³

(2018: €3.20)



For more information, see page 13

Achieve **€22 billion** in **Accelerator sales⁴** by 2025

€15.0 billion



For more information, see pages 38 to 39

Reduce the worldwide **lost-time injury rate** per 200,000 working hours to **≤0.1** by 2025

0.3



For more information, see pages 109 to 110

More than **80%** of our **employees** feel that at BASF, they can **thrive and perform at their best**

79%



For more information, see page 127

Cover **90%** of our relevant spend⁵ with **sustainability evaluations** by 2025

81%

Have **80%** of our suppliers **improve their sustainability performance** upon re-evaluation

52%



For more information, see pages 102 to 104

Our strategic action areas

To reach our goals and be the leading company in the chemical industry for our customers, we are strengthening our performance in innovation and in operations as the leading chemical producer and plant operator. We leverage digital technologies and data to create additional value added for us and our customers. We are embedding sustainability even more deeply into the steering of our business. We want to foster a passion for our customers in all employees. We are expanding our portfolio and refining our organization to better meet customer needs using the power of our Verbund integration. To this end, we have defined six strategic action areas on which will continue to base our activities.

Innovation

Our ambition is to be the most attractive partner for our customers whenever they are confronted with challenges that can be approached with chemistry. Our research and development competences are industry-leading. We aim to build on and leverage this strength to develop innovations together with our customers. We want to continuously improve our innovation processes so that we can bring products to the market more quickly.

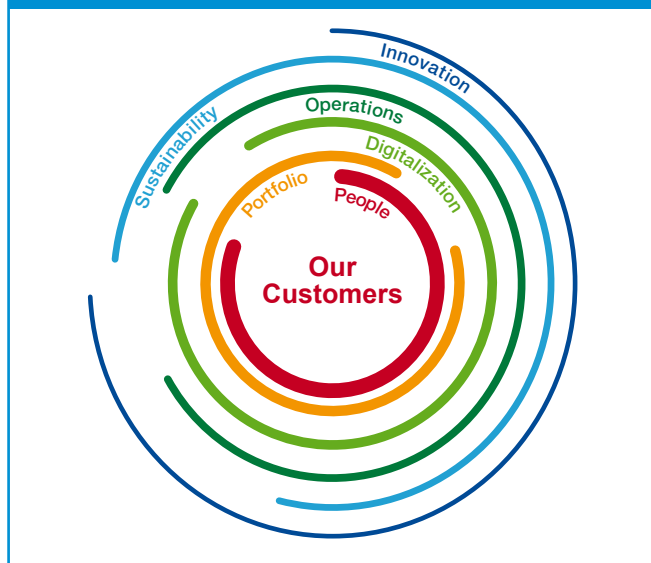
[For more information on innovation, see page 31 onward](#)

Sustainability

We are successful in the long term when our products, solutions and technologies add value to the environment, society and the economy. We want to be a thought leader in sustainability, which is why we are increasing the relevance of sustainability in our steering processes and business models. This secures the long-term success of our company, creates business opportunities and establishes us as a key partner supporting our customers.

[For more information on the integration of sustainability, see page 36 onward](#)

Action areas sharpen customer focus



Operations

We produce safely, efficiently and reliably so that we can deliver products to our customers on spec and on time. We strive to continually improve the reliability and availability of our plants, as well as our agility. Above and beyond this, continuous process improvements and effective debottlenecking of our existing asset base are paramount to ensure our competitiveness.

[For more information on operations, see page 109 onward](#)

Digitalization

Digitalization is an integral part of our business. This creates value added for our customers, grows our business and improves efficiency. We are extensively promoting digital skills among our employees to ensure that the necessary resources are always available to leverage the opportunities of digitalization to the benefit of our customers.

[For more information on digitalization, see pages 64, 110, 129 and 146](#)

Portfolio

We will sharpen our portfolio and focus our capital allocation toward growth areas. We will focus primarily on organic growth through capital expenditures and innovation. We also make targeted acquisitions where this makes strategic sense and creates value and divest businesses that are no longer a strategic match. Our segment structure creates a high level of transparency regarding the steering of our businesses, the importance of value chains and the role of our Verbund. The physical, technological, market and digital integration of the Verbund is at the core of our portfolio and our strengths.

[For more information on our organization and the Verbund, see page 19 onward](#)

Employees

We aim to clearly position each business against its relevant competitors and establish a high-performance organization to enable us to be successful in an increasingly competitive market environment. Our people are what will make the implementation of our strategy successful. We rely on the engagement of our employees and give them the tools and skills necessary to be able to offer our customers differentiated and customized products, services and solutions. Our tailored business models and organizational structures ensure that each business unit can optimally serve its market segment.

[For more information on employees, see page 126 onward](#)

Corporate values

guide our conduct and actions

How we act is critical for the successful implementation of our strategy: This is what our four core values represent – creative, open, responsible, entrepreneurial. They guide our actions and define how we want to work together – as a team, with our customers and our partners.

Creative: We make great products and solutions for our customers. This is why we embrace bold ideas and give them space to grow. We act with optimism and inspire one another.

Open: We value diversity, in people, opinions and experience. This is why we foster feedback based on honesty, respect and mutual trust. We learn from our setbacks.

Responsible: We value the health and safety of people above all else. We make sustainability part of every decision. We are committed to strict compliance and environmental standards.

Entrepreneurial: We focus on our customers, as individuals and as a company. We seize opportunities and think ahead. We take ownership and embrace personal accountability.

Global standards

■ We act according to our values and internationally recognized standards of conduct and review our performance with audits

Our standards fulfill or exceed existing laws and regulations and take internationally recognized principles into account. We respect and promote:

- The 10 principles of the U.N. Global Compact
- The Universal Declaration of Human Rights and the two U.N. Human Rights Covenants
- The core labor standards of the ILO and the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (MNE Declaration)
- The OECD Guidelines for Multinational Enterprises
- The Responsible Care® Global Charter
- The German Corporate Governance Code

We stipulate rules for our employees with standards that apply throughout the Group. We set ourselves ambitious goals with voluntary commitments and monitor our performance in terms of environmental protection, health and safety using our Responsible Care Management System. In terms of labor and social standards, this takes place using three elements: the Compliance Program (including the compliance hotlines, which can be used for internal and external questions or complaints), close dialog with our stakeholders (such as with employee representatives or international organizations), and the global management process to respect international labor norms.

Our business partners are expected to comply with prevailing laws and regulations and to align their actions with internationally

recognized principles. We have established appropriate monitoring systems to ensure this.

[For more information on labor and social standards, see page 131](#)

[For more information on the Responsible Care Management System, see page 108](#)

[For more information on supplier standards, see page 102 onward](#)

[For more information on corporate governance and compliance, see page 149 onward](#)

The BASF brand

BASF's success as an integrated global chemical company relies on having a strong brand. Our brand and mission are manifested in our strategy and our corporate purpose – “We create chemistry for a sustainable future” – as well as our values. “Connected” describes the essence of the BASF brand. Connectedness is one of BASF's great strengths. Our Verbund concept – realized in production, technologies, the market and digitalization – enables innovative solutions for a sustainable future. The claim “We create chemistry,” as stated in the BASF logo, helps us embed this solution-oriented strategy in the public perception. Our brand creates value by helping communicate its benefits for our stakeholders and our values.

Wherever our stakeholders encounter our brand, we want to convince them that BASF stands for connectedness, innovation and intelligent solutions, value-adding partnerships, an attractive working environment and sustainability. This contributes to our customers' confidence and to our company value.

We are constantly developing our brand image. We regularly measure awareness of and trust in our brand and our company. A global study commissioned by us and conducted worldwide every two years by an independent market research institution again showed in 2018 that, in terms of awareness and trust, BASF is above the industry average in numerous countries. Our goal is to continue increasing awareness of BASF in all of our relevant markets.

Value-Based Management

A company can only create value in the long term if it generates earnings that exceed the cost of the capital employed. This is why we encourage and support all employees in thinking and acting entrepreneurially in line with our value-based management concept. As of 2019, the return on capital employed (ROCE) replaces EBIT after cost of capital as the most important key performance indicator for steering the BASF Group.

The BASF Group's steering concept

We follow a value-oriented steering concept with our financial targets. As of 2019, we use the return on capital employed (ROCE) instead of EBIT after cost of capital for operational steering as a key target and management indicator for the BASF Group, its operating divisions and business units. As stated in our strategic goals, we aim to achieve a ROCE considerably above the cost of capital percentage every year. The change to ROCE means that the same logic and data is now used for internal management, external communication with the capital markets and variable compensation. This improves the consistency of the indicators used for BASF's value-based management with variable compensation and pension systems, and our shareholders' objectives.

Calculating ROCE and cost of capital

ROCE is calculated as the EBIT of the segments as a percentage of the average cost of capital basis at each month-end.

To calculate the **EBIT of the segments**, we take the BASF Group's EBIT and deduct the EBIT of activities recognized under Other, which are not allocated to the divisions.

The **cost of capital basis** consists of the operating assets of the segments and is calculated using the month-end figures. Operating assets comprise the current and noncurrent asset items of the segments. These include tangible and intangible fixed assets, investments accounted for using the equity method, inventories, trade accounts receivable, other receivables and other assets generated by core business activities and, where appropriate, the assets of disposal groups. The cost of capital basis also includes customer and supplier financing.

The **cost of capital percentage**, which we have integrated into our ROCE target as a comparative figure, is determined using the weighted cost of capital from equity and borrowing costs (weighted average cost of capital, WACC). To calculate a pre-tax figure similar to EBIT, it is adjusted using the projected tax rate for the BASF Group for the business year. In addition, the projected net expense of Other is already provided for by an adjustment to the cost of capital percentage. The cost of equity is ascertained using the capital asset pricing model. Borrowing costs are determined based on the financing costs of the BASF Group. The cost of capital percentage for 2020 is 9% (2019: 10%).

Value-based management throughout the company

An important part of our value management is the target agreement process, which aligns individual employee targets with BASF's targets. As of 2019, the most important financial performance indicator in the operating units is ROCE. The other units' contribution to value is also assessed according to effectiveness and efficiency on the basis of quality and cost targets.

We use **ROCE** as the BASF Group's most important key performance indicator for measuring economic success as well as for steering the BASF Group and its operating units. EBIT before special items and capex (capital expenditure) are key performance indicators for BASF that have a direct impact on ROCE and as such, support its management.

- **EBIT before special items** is used to steer profitability at Group and segment level. This is calculated by adjusting the EBIT reported in the Consolidated Financial Statements for special items, making it especially suitable for assessing economic development over time. **Special items** arise from the integration of acquired businesses, restructuring measures, certain impairments, gains or losses resulting from divestitures and sales of shareholdings, and other expenses and income that arise outside of ordinary business activities.
- **Capital expenditures (capex)** comprise additions to property, plant and equipment excluding additions from acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases. It is used to manage capital employed in the BASF Group. Capex is not just relevant to ROCE management, but also supports our long-term goal to increase our dividend each year based on a strong free cash flow.

Furthermore, we comment on and forecast **sales** at Group and segment level in our financial reporting as a significant driver for EBIT before special items and thus ROCE.

BASF's sustainability targets are generally focused more on the long term. Moreover, as part of the implementation of our strategy, we have decided to also establish short-term steering mechanisms from January 1, 2020, such as incentives within the compensation system to steer the targets "CO₂-neutral growth until 2030" and "Achieve €22 billion in Accelerator sales by 2025."

For more information on the development of these indicators, see Results of Operations from page 47 onward

Innovation

A growing need for food, energy and clean water for a booming world population, limited resources and protecting the climate – reconciling all these factors is the greatest challenge of our time. Innovations based on chemistry play a key role here, as they contribute decisively to new solutions. Effective and efficient research and development is a prerequisite for innovation as well as an important growth engine for BASF. We develop innovative processes, technologies and products for a sustainable future and drive forward digitalization in research worldwide. This is how we ensure our long-term business success with chemistry-based solutions for our customers in almost all industry sectors.

Innovation has always been the key to BASF's success, especially in a challenging market environment. Our innovative strength is based on a global team of highly qualified employees with various specializations. We had approximately 11,000 employees involved in research and development in 2019. Our three global research divisions are run from our key regions – Europe, Asia Pacific and North America: Process Research & Chemical Engineering (Ludwigshafen, Germany), Advanced Materials & Systems Research (Shanghai, China) and Bioscience Research (Research Triangle Park, North Carolina). Together with the development units in our operating divisions, they form the core of our global Know-How Verbund. BASF New Business GmbH and BASF Venture Capital GmbH supplement this network with the task of using new technologies to tap into attractive markets and new business models for BASF.

└ In 2019, we generated sales of around €10 billion with products launched on the market in the past five years that stemmed from research and development activities. ┘ In the long term, we aim to continue significantly increasing sales and earnings with new and improved products – especially with Accelerator products, which make a substantial sustainability contribution in the value chain.

Global network

- Close cooperation with universities, research institutes and companies
- Academic Research Alliances bundle partnerships by topic and region

Our global network of outstanding universities, research institutes and companies forms an important part of our Know-How Verbund. It gives us direct access to external scientific expertise, talented minds from various disciplines as well as new technologies, and helps us to quickly develop targeted, marketable innovations.

Global network: eight Academic Research Alliances

● CARA
California Research Alliance
UC Davis
Davis, California
UC Berkeley
Berkeley, California
Stanford University
Stanford, California
UC Santa Barbara
Santa Barbara, California
Caltech
Pasadena, California
UC Riverside
Riverside, California
UC San Diego
San Diego, California

● NORA
Northeast Research Alliance
Harvard University
Cambridge, Massachusetts
Massachusetts Institute of Technology
Cambridge, Massachusetts
University of Massachusetts
Amherst, Massachusetts

● JONAS
Joint Research Network on Advanced Materials and Systems
I.S.I.S – University of Strasbourg
Strasbourg, France
University of Freiburg
Freiburg, Germany
ETH Zürich
Zurich, Switzerland

● NAO
Network for Asian Open Research
Changchun Institute of Applied Chemistry
Changchun, China
Tsinghua University
Beijing, China
Beijing Institute of Technology
Beijing, China
Dalian Institute of Chemical Physics
Dalian, China
Fudan University
Shanghai, China
Zhejiang University
Hangzhou, China
Sichuan University
Chengdu, China
Tokyo Institute of Technology
Tokyo, Japan
Kyoto University
Kyoto, Japan
Seoul National University
Seoul, South Korea

● CaRLa
Catalysis Research Laboratory
Heidelberg University
Heidelberg, Germany

● BELLA
Battery and Electrochemistry Laboratory
Karlsruhe Institute of Technology (KIT)
Karlsruhe, Germany

● BasCat
UniCat BASF Joint Lab
Technical University of Berlin
Berlin, Germany

● iL
Innovation Lab
Karlsruhe Institute of Technology (KIT)
Karlsruhe, Germany
Heidelberg University
Heidelberg, Germany

chemical synthesis, and in engineering sciences and biosciences. The Joint Research Network on Advanced Materials and Systems (JONAS) research center is active in Europe. Research here concentrates on supramolecular chemistry as well as nanotechnology and polymer chemistry. At the Network for Asian Open Research (NAO) in the Asia Pacific region, research focuses on polymer and colloid chemistry, catalysis and machine learning.

We are working on innovative components and materials for electrochemical energy storage with the Karlsruhe Institute of Technology (KIT) at the Battery and Electrochemistry Laboratory (BELLA). At the joint Catalysis Research Laboratory (CaRLa), BASF is researching homogeneous catalysis in cooperation with the University of Heidelberg. BasCat is a joint laboratory operated by the UniCat cluster of excellence and BASF at the Technical University of Berlin, where new heterogeneous catalysis concepts are being explored together with the Fritz Haber Institute of the Max Planck Society. The iL (Innovation Lab) in Heidelberg, Germany, focuses on functional printing, printed sensors and IoT (internet of things) applications.

Our eight Academic Research Alliances are complemented by cooperations with around 300 universities and research institutes as well as collaborations with a large number of companies.

Strategic focus

- **Close cooperation between research and business units with strong customer focus**
- **Further development of our innovation strategies**

Research and development **expenses** amounted to €2,158 million, above the prior-year level (€1,994 million). The increase was mainly attributable to the research-intensive seed business, which BASF acquired from Bayer in August 2018. The operating divisions accounted for 81% of total research and development expenses in 2019. The remaining 19% related to cross-divisional corporate

research focusing on long-term topics of strategic importance to the BASF Group.

Our focus is on the development of value-adding innovations for our customers to secure our long-term competitiveness. Under our updated strategy, we have brought research and development even closer together from an organizational perspective, and thus better aligned with the needs of our customers. Our aim is to continue to shorten the time to market and accelerate the company's organic growth. A strong customer focus, digitalization, creativity, efficiency and collaboration with external partners are among the most important success factors here. In order to bring promising ideas to market as quickly as possible, we regularly assess our research projects using a multistep process and prioritize our focus areas accordingly.

Our cross-divisional corporate research will remain closely aligned with the requirements of our operating divisions and allows space to review creative research approaches quickly and in an agile way. We strengthen existing and continually develop new, key technologies that are of central significance for our operating divisions, such as polymer technologies, catalyst processes or biotechnological methods.

We are fine-tuning our innovation strategies in all of our business areas to ensure a balanced portfolio of incremental and breakthrough innovation, as well as of process, product and business model innovation. One of the steps taken in 2018 to further promote breakthrough innovation was the establishment of BASF's incubator, Chemovator GmbH, based in Mannheim, Germany. This actively nurtures promising business ideas with the help of external experts, who act as consultants, coaches, mentors or intermediaries, and quickly bring them to market readiness. We have also identified additional, far-sighted topics that go above and beyond the current focus areas of our divisions. The aim is to use these to exploit new business opportunities within the next few years. Above and beyond this, we are working on overarching projects with a high techno-

logical, social or regulatory relevance. For instance, one global research and development program, Carbon Management R&D Program, is focusing on the energy-intensive underlying production processes for basic chemicals. These basic chemicals account for around 70% of the CO₂ emissions produced by the European chemical industry.¹ The program covers topics such as the development of new catalysts for dry reforming methane with CO₂ to produce syngas, and using methane pyrolysis to produce hydrogen from natural gas.

Our global research and development presence is vital to our success. We want to continue advancing our research and development activities, especially in Asia and North America, with a focus on growth in regional markets. A stronger presence outside Europe creates new opportunities for developing and expanding customer relationships and scientific collaborations as well as for gaining access to talented employees. This strengthens our Research and Development Verbund and makes BASF an even more attractive partner and employer. The Ludwigshafen site in Germany is and will remain the largest in our Research Verbund. This was once again underlined with the investment in a new research center, which was opened in 2019. It houses highly automated experimental facilities for new process development and testing process catalysts. In addition, three state-of-the-art electron microscopes started operation in Ludwigshafen in 2019. These particularly benefit research in inorganic material systems, such as catalyst and battery research.

The number and quality of our patents also attest to our power of innovation and long-term competitiveness. In 2019, we filed around 1,000 new patents worldwide. Also in 2019, we once again also ranked among the leading companies in the Patent Asset Index, a method that compares patent portfolios industry-wide.

[For a multiyear overview of research and development expenditures, see the Ten-Year Summary on page 291](#)

¹ Sources: JRC (Energy efficiency and GHG emissions: Prospective scenarios for the Chemical and Petrochemical Industry 2017, Boulamanti A., Moya J.A.); DECHEMA Technology Study (Low carbon energy and feedstock for the European chemical industry, 2017)

Research focus areas – examples

- **New catalysts for olefin production**
- **Long-lasting crop protection with beneficial insect-friendly insecticide**
- **Biopolymers with enhanced properties**

Our focus areas in research are derived from the three major areas in which chemistry-based innovations will play a key role in the future:

- Resources, environment and climate
- Food and nutrition
- Quality of life

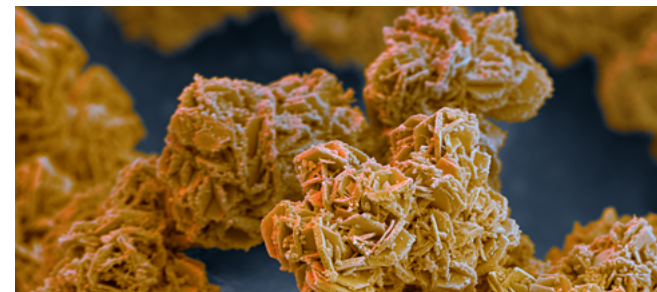
At BASF, we develop new technologies that can be used to significantly reduce emissions. In collaboration with Linde and academic partners, we successfully produced syngas from methane and CO₂ in a process known as “dry reforming.” This can be converted into dimethyl ether (DME) in an intermediate step and then into olefins, the main intermediate in the chemical industry. New catalysts from BASF are used in both the production of syngas and its subsequent conversion into DME. Following complex high-throughput screenings, an automated testing method with parallel experiments, and a data-based optimization approach for the catalyst structures, scientists from the Process Research & Chemical Engineering research division also developed proprietary production processes for the catalysts. Together with employees from the Catalysts division, the researchers transferred the new catalysts to production and worked on pilot tests in 2019.

The insecticide Inscalis® was developed by a team of scientists from the research division Bioscience Research and the Agricultural Solutions segment in collaboration with Meiji Seika Pharma Co., Ltd., Tokyo, Japan, and the Kitasato Institute. The highly effective insecticide offers farmers extra long-lasting crop protection without affecting beneficial pollinators like bees. Inscalis® contains an active ingredient based on a natural fermentation process using the *Penicillium*

coprobium fungus. By optimizing the fermentation conditions, the researchers were able to considerably increase the yield of the natural substance pyripyropene A (PPA). The PPA is refined into the final active ingredient using chemical synthesis in an optimized two-step process. A patented formulation concept also ensures a significantly improved active ingredient uptake. The active ingredient was first approved in Australia, India, Canada, the United States and China in 2018, followed by further approvals in Mexico and Argentina in 2019. In 2019, the researchers also won the BASF's internal innovation prize for their outstanding research work.

For many years now, one focus area of BASF's research has been the full biodegradability of biopolymers in various biospheres and soils. Our multidisciplinary Research Verbund ensures that scientists with a wide range of skills adopt a holistic approach in driving forward this complex area of research. Employees from the research division Advanced Materials & Systems Research continued to expand our competence profile in 2019. With ecovio® M 2351, we have developed the first plastic for mulch films to be certified as biodegradable according to the European standard DIN EN 17033.

For more information on research and development, see basf.com/innovations

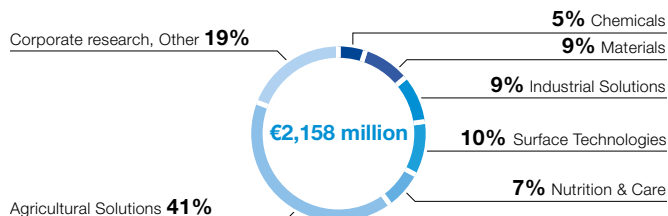


Battery materials

Around the world, experts in the Process Research & Chemical Engineering research division are working on innovative cathode active materials for high-performance lithium-ion batteries to meet the growing demand for powerful, reliable and affordable electric vehicles. Digital methods such as machine learning enable us to make early predictions about the quality of new materials, such as their performance or life span. This helps to accelerate research. The data used include electrochemical measurements on battery cells and images from electron microscopes, which are analyzed with respect to various characteristics such as surface properties or defects.

Innovations in the segments – examples

Research and development expenses by segment 2019



Chemicals: In a research project on an alternative production method for sodium acrylate, we are investigating the use of CO₂ as a chemical feedstock. The focus is on finding more efficient and more resource-friendly synthesis methods. Sodium acrylate is an important starting material for superabsorbents, which are widely used in diapers and other hygiene products. Unlike the current propylene-based production method, the new process uses CO₂ and ethylene, which are converted using a catalyst. BASF experts have since made significant progress on this process. They demonstrated that it can be successfully implemented at laboratory scale, an important milestone toward industrial application. The use of CO₂ in the new process could replace around 30% of the fossil fuels, provided that a larger-scale process also proves to be stable and energetically favorable.

BASF launched a new vinyl monomer in 2019: **vinyl methyl oxazolidinone (VMOX)**. VMOX is particularly suitable as a reactive diluent in ultraviolet curing coatings and inks, which can for example be used for digital UV printing. In these applications, the vinyl monomer offers technical benefits compared with conventional reactive diluents. The monomer brings good properties on all common substrates, even at low dosages. It also enables more brilliant colors in the final printed products and coatings. VMOX also

allows innovative coatings formulations with a favorable toxicological profile compared with other, similar products.

Materials: The semi-crystalline polyamide **Ultramid® Vision** offers very high light transmission with low light scattering compared with opaque standard polyamides. Its high UV and temperature resistance, scratch resistance and chemical resistance make Ultramid® Vision an important building block wherever visual control or light design play a role, for example in backlit switches or buttons in cars. The polyamide has now been used in a car interior for the first time – for the window regulators of a German automotive manufacturer. Ultramid® Vision can be repeatedly exposed to aggressive media such as sun cream, cleaning agents and solvents without sustaining damage. The polyamide thus offers designers and developers a broad range of possibilities for realizing design features and lighting elements not only in car interiors, but in various consumer and industrial applications as well.

The new insulation material **Cavipor® FTX 1** combines the advantages of a mineral-based insulation material with the easy, safe and clean processability of a foam system. Cavipor® FTX 1 offers an insulation performance comparable to mineral wool and expanded polystyrene (EPS) and is particularly suitable for the energetic renovation of buildings with double-wall masonry. One of its main advantages is how simple it is to process: The three aqueous initial components are aerated at the site, resulting in a flowable foam free from dust and fibers. It is then injected into the cavity of the wall. There, the foam cures and dries without further expansion, fixing it as a seamless insulating layer. These process advantages, plus the fact that Cavipor® FTX 1 is non-combustible, fiber-free and low-emission, make it a groundbreaking innovation.

Industrial Solutions: Preventing coatings from yellowing is key for automotive refinish coatings. **Basonat® HI NG** is an aliphatic polyisocyanate hardener for two-component polyurethane (2C PU) coatings. It provides outstanding durability and resistance against light and weather, enabling complex formulations with significantly

reduced yellowing compared with standard HI-grade hardeners. With this new product, BASF fulfils the market's highest technical performance requirements.

Modern farming faces many challenges, including how to balance the need for greater yields of fruits and vegetables, while simultaneously meeting the ever-stringent environmental protection requirements of organic food production. The light and heat stabilizer **Tinuvin® NOR® 356** protects and extends the life of agricultural films that are exposed to very high levels of ultraviolet radiation, heat and crop treatments such as elemental sulfur and the compounds approved in certified organic farming to prevent plant diseases and fertilize the soil. The improved film protection and longer life of NOR®-stabilized greenhouse covers increase productivity, improve crop quality and reduce plastic waste for farmers, which makes them more competitive.

Surface Technologies: Styrene is a building block of the plastics industry. With the recently launched styrene catalyst **StyroStar® S6-42 Select**, BASF has brought to market an innovation that reduces the formation of by-products such as benzene and toluene thanks to improved selectivity. StyroStar® S6-42 Select is a robust and durable catalyst, combining excellent mechanical stability with exceptional performance.

Together with Lufthansa Technik AG, Hamburg, Germany, BASF has developed a **functional film** that helps to reduce carbon emissions from air travel. The film has a unique surface structure consisting of riblets of around 50 micrometers in size. These reduce drag and thereby optimize the aerodynamics on the relevant parts of the aircraft. This can reduce fuel consumption and the resulting carbon emissions by up to 3%. The film is exposed to strong ultraviolet radiation at high altitudes and extreme variations in temperature. BASF therefore put a high priority on durability in addition to aerodynamics, during the development process. The technology can be used on all aircraft types, including older models.

Nutrition & Care: Nephhydrat® is a bioactive ingredient that supports the skin's barrier function and helps it to retain moisture, creating an even, fresh complexion. BASF sources the active ingredient from the spiny peel of the rambutan fruit, grown organically in close cooperation with local partners in Vietnam as part of a socially and environmentally responsible supply chain. Nephhydrat® is preservative-free, 100% natural origin and certified according to the COSMOS standard for organic and natural cosmetics.

BASF has launched two digital virtual assistants to cover key customer needs: **ZoomLab™** and **RegXcellence™**. The formulation assistant ZoomLab™ predicts optimized formulations of pharmaceutical drugs faster and with more precision than is possible today. Finding the right combination and balance between the active pharmaceutical ingredient and excipients to optimize drug performance is immensely time and resource consuming. Depending on the properties of the active ingredient and the intended dosage, ZoomLab™ predicts the best excipients. In addition, ZoomLab™ provides an intuitive rating system describing the suitability of an excipient as well as formulation tips to make the process run smoothly. This allows for a much higher precision, speed and reduction of ingredients used in the drug development process. RegXcellence™ makes registration processes seamless, saving customers time and costs during important milestones such as qualification of ingredients and market authorization of their drugs.

Agricultural Solutions: At BASF, we believe in finding the right balance for success. We believe that with our connected offer, we can achieve this for the environment, society and agriculture alike. We continually invest to expand our portfolio, focusing our research activities on strategic crop combinations, known as crop systems. In 2019, we invested €879 million in research and development in the Agricultural Solutions division, representing around 11% of sales for the segment.

Our well-stocked innovation pipeline now has an even stronger focus on sustainable solutions. It comprises seeds and traits, chemical and biological crop protection, digital and regionally tailored products and solutions. We estimate the peak sales potential¹ of products with launch dates between 2019 and 2029 to be more than €7.5 billion. More than 30 pipeline products will be launched worldwide by 2029. These will enable higher yields and quality and even more sustainable production. In 2019, we successfully launched our new fungicide **Revysol®**. It meets the highest level of regulatory standards and offers outstanding biological performance against a range of difficult-to-control pathogens in specialty and row crops. **Luximo®** and **Tirexor®**, our herbicides to manage difficult-to-control grasses and broadleaf weeds, are expected to enter the market from 2020 onward. **Broflanilide**, our insecticide to help farmers protect specialty and field crops from insects such as potato beetles and caterpillars, is scheduled for market launch from 2020. We also launched **Poncho® Votivo® 2.0** seed treatment in 2019. It includes a systemic insecticide and two biological components to control insect pests and protect corn (maize) seed from disease-causing nematodes.

For seeds and traits, we will further strengthen our innovation pipeline with new traits, including the soybean technology in our **LibertyLink® GT27™** trait platform² that has been available to growers under the **Credenz®** brand as well as under licensee brands since 2019. Future launches will also include proprietary stacks offering resistance to nematode and Asian soybean rust. New traits to increase yields and stress resistance in soybean and corn (maize)³ are under development. We are constantly improving the seed genetics and trait innovations for our **FiberMax®** and **Stoneville®** cotton brands, for example with a proprietary herbicide tolerance product, which will be launched before mid-decade. New breeding tools will continue to speed up our innovation cycles for **InVigor®** canola seed. **LibertyLink®** yellow-seed canola can be grown under more challenging conditions and will provide new

rotation options for wheat growers in drier areas of North America. From mid-decade, **hybrid wheat seed** will help growers in North America and Europe to optimize yield, production stability and grain quality, as well as to improve profitability and sustainability. Recently launched vegetable seed innovations contribute to a healthy lifestyle and help reduce the environmental impact of food production. Innovative breeding processes ensure a constant supply of commercially successful vegetable seed varieties, mainly marketed under the **Nunhems®** brand.

BASF will also apply precision technologies and digitalization to seize future innovation opportunities in agriculture. This includes new, outcome-based business models marketed under the **xarvio®** brand. These will enable farmers to achieve yield forecasts that have been agreed in advance.

¹ Peak sales describes the highest sales value to be expected in one year. For more information, see the Glossary on page 299.

² The GT27™ trait and LibertyLink® GT27™ are developed and marketed in cooperation with MS Technologies LLC, West Point, Iowa.

³ Traits developed in cooperation with Bayer Crop Science

Integration of Sustainability

We are successful in the long term when we create value added for the environment, society and the economy with products, solutions and technologies. Sustainability is firmly anchored in our corporate strategy. Using the various tools of our sustainability management, we carry out our company purpose: "We create chemistry for a sustainable future." We systematically incorporate sustainability into our business and our compensation systems. We identify sustainability trends at an early stage and derive appropriate measures for our business to seize new business opportunities and minimize risks along the value chain.

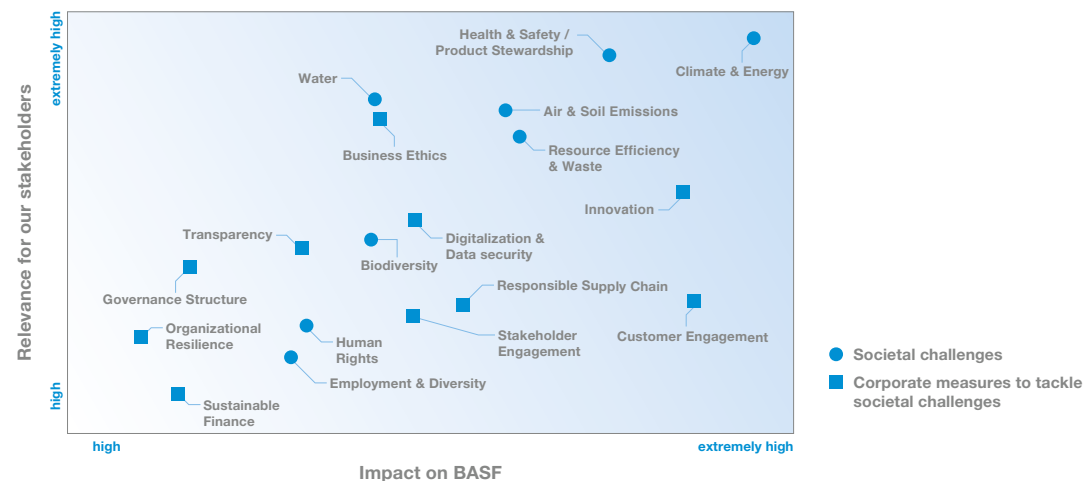
Strategy

- Sustainability as part of steering, compensation systems and business models
- Updated materiality matrix shows key sustainability topics

We achieve long-term business success by creating value added for the environment, society and the economy. Sustainability is at the core of what we do, a driver for growth and value as well as an element of our risk management. That is why sustainability is firmly anchored into the organization as part of governance, compensation systems and business models.

Based on our corporate strategy and the global targets derived from this, from the 2020 business year onward, we will integrate the sustainability targets (CO₂-neutral growth until 2030 and achieve €22 billion in Accelerator sales by 2025) into short-term Group-level steering as well, as most important key performance indicators. We started to establish the necessary steering mechanisms and control systems in 2019.

Materiality analysis to identify and assess sustainability topics



We present the relevance of sustainability topics for our stakeholders and the impact of these topics on our business in a materiality matrix. We selected and clustered key sustainability topics from a list of around 100 potentially relevant topics identified using tools such as the Value to Society approach.

The relevance of these topics for our stakeholders was assessed using a big data analysis, based on external publications. The results were complemented and confirmed by surveys and interviews with external experts.

Business units were surveyed to determine the impacts of sustainability topics on BASF. The evaluation also took into account the result of an analysis where business units assessed the positive and negative impacts of individual sustainability trends on their business. This analysis was based on a metastudy on sustainability trends.

We also validate the impacts of our business activities along the value chain with our Value to Society approach. This enables us to quantify positive and negative impacts along the value chain in monetary terms (see page 37). Topics with impacts that cannot be expressed in monetary terms, or only with difficulty (for example, human rights), are included based on expert assessments. Our stakeholders also confirmed the materiality of the nonfinancial topics that the Value to Society approach identified as having an impact along the value chain.

The societal challenges that we have identified as having an impact on our business, and which we also have impact on, are therefore material within the meaning of the Nonfinancial Statement.

For more information on our Value to Society approach, see basf.com/en/value-to-society

For more information on the metastudy on sustainability trends, see basf.com/sustainability-trends

In addition to the two climate protection and Accelerator sales targets, we have also set ourselves further sustainability targets on responsible procurement, engaged employees, women in leadership positions, occupational health and safety, process safety and water management.

We help our customers to be more sustainable and develop sustainable solutions to grow our customer relationships and attract new customers. One example of this is the ChemCycling™ project to drive forward chemical recycling of plastic waste and in this way, strengthen the circular economy for plastics (see page 105). We want to promote societal acceptance of our business activities by acting in a responsible, resource-conserving, respectful, safe and efficient way.

Our products, solutions and technologies help to achieve the United Nations' Sustainable Development Goals (SDGs), for example through climate protection measures. We also contribute to other goals, such as No poverty (SDG 1) and Zero hunger (SDG 2), Good health and well-being (SDG 3), and Clean water and sanitation (SDG 6).

In 2019, we updated our materiality analysis, which is used to identify and evaluate sustainability topics. Based on this analysis, our material topics include climate and energy, health and safety/product stewardship, and human rights (see box on page 36). We integrate these material topics into our long-term steering and operational management processes. They are also reflected in the focus areas for our reporting. We continuously monitor and assess emerging sustainability topics so that we can adapt steering and management processes as needed.

We are constantly working to broaden our positive impact on key sustainability topics and reduce the negative impact of our business activities. The integration of sustainability into core business activities and decision-making processes is steered by the Corporate Development unit, which is part of the Corporate Center as of

2020 (see page 20). From 2020 onward, we will also bundle the global steering of climate-related matters in this unit, such as the coordination of measures to reach our climate protection target. The Board of Executive Directors is regularly informed of the current status of individual sustainability topics as well as of sustainability assessments as part of other business processes (such as investment plans), makes decisions on these with strategic relevance for the Group, and monitors the implementation of strategic plans and target achievement. The Corporate Sustainability Board, which is composed of the heads of business, corporate and functional units, and regions, supports the Board of Executive Directors on sustainability topics and discusses operational matters. A member of the Board of Executive Directors serves as chair.

We also established an external, independent Stakeholder Advisory Council in 2013. Here, international experts from academia and society contribute their perspectives to discussions with BASF's Board of Executive Directors, helping us expand our strengths and address potential for improvement.

We systematically evaluate sustainability criteria as an integral part of decisions on acquisitions and investments in property, plant and equipment or financial assets. In this way, we not only assess economic dimensions, but also the potential impacts on areas such as the environment, human rights or the local community.

 [For more information on our financial and sustainability targets, see page 27](#)

[For more information on compensation structures, see the Compensation Report on page 162 onward](#)

[For more information on our risk management, see pages 139 to 147](#)

 [For more information on our material topics, see basf.com/materiality](#)

[For more information on the organization of our sustainability management, see basf.com/sustainabilitymanagement](#)

Harnessing business opportunities and measuring value added by sustainability

■ Cross-industry initiative established to standardize how companies' value contributions are assessed

We take advantage of business opportunities by offering our customers innovative products and solutions that contribute to sustainability. We ensure that our business units automatically evaluate and take into account relevant sustainability criteria when they develop and implement strategies, research projects and innovation processes.

We want to measure the value proposition of our actions along the entire value chain. We are aware that our business activities have an impact on the environment and society, and so we strive to increase our positive contribution and minimize the negative effects of our business activities.

To achieve this, we need to even better understand how our actions impact society and the environment. We already have many years of experience of this from evaluating our products and processes using methods such as Eco-Efficiency Analysis, the Sustainable Solution Steering portfolio analysis, or BASF's corporate carbon footprint. The methodology of the SEEBalance® analysis to evaluate the sustainability of different product and process alternatives was enhanced and refined in 2019. The social analysis component now contains two modules, which we use to assess social risks along the value chain and identify negative impacts on the United Nations' Sustainable Development Goals.

We also developed a method together with external experts to perform a monetary assessment of the economic, ecological, and social impacts of our business activities along the value chain – the Value to Society approach. This allows us to compare the significance of financial and nonfinancial effects of our business activities

on society and show interdependencies. The results of these assessments are helpful in our discussions with stakeholders.

In 2019, we founded the value balancing alliance e.V. together with other international companies. With the support of major auditing firms, the Organisation for Economic Co-operation and Development (OECD), leading universities and other partners, the cross-industry alliance aims to develop an accounting and reporting standard within the next three years that makes the value companies provide to society transparent and comparable. The aim is to present the financial, ecological, and social impacts of business activities in monetary terms on the basis of a standardized, uniform framework.

We contribute our approach and expertise to debates on assessing the monetary value of the economic, ecological and social impact of business decisions on an ongoing basis. We share our experiences in networks and initiatives such as the Impact Valuation Roundtable. We are also involved in the corresponding standardization processes within the International Organization for Standardization (ISO).

For more information on this method and the results of Value to Society, see basf.com/en/value-to-society

For more information on our sustainability tools, see basf.com/en/measurement-methods

For more information on value balancing alliance e.V., see value-balancing.com

Steering of product portfolio based on sustainability performance

■ Increase sales from Accelerator products

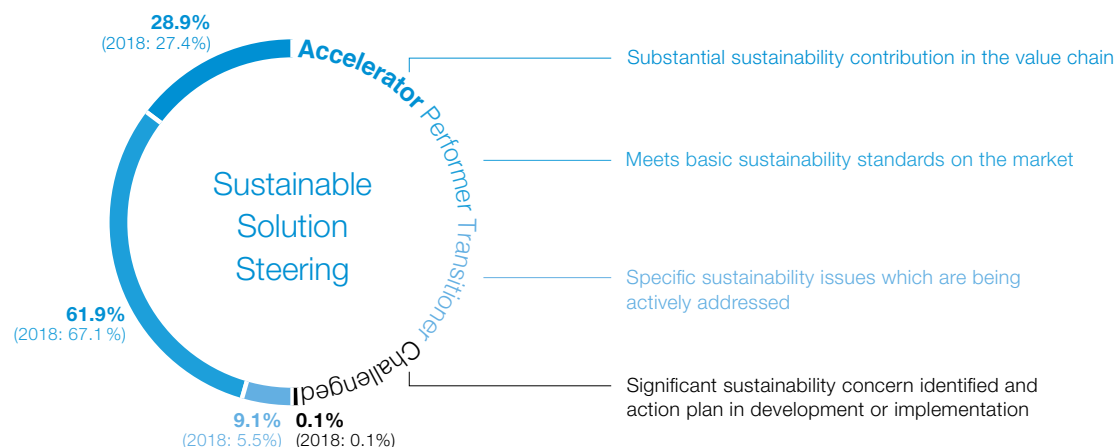
A significant steering tool for our product portfolio, based on the sustainability performance of our products, is the Sustainable Solution Steering method. By the end of the 2019 business year, we had conducted sustainability analyses and assessments for 96.3% of our relevant portfolio¹ of more than 50,000 specific product applications, accounting for €51.9 billion in sales.² These consider the products' application in various markets and sectors. New market requirements arise as a result of the continuous development of new product solutions in the industry or changing regulatory frameworks. This has an effect on comparative assessments, which is why we regularly re-assess our product portfolio.

Transparently classifying our products on the basis of their contribution to sustainability enables us to systematically improve them.

Accelerator products make a substantial sustainability contribution in the value chain. Based on our corporate strategy, we have therefore set ourselves a global target: We aim to make sustainability an even greater part of our innovation power and achieve €22 billion in Accelerator sales by 2025. In 2019, we achieved sales of €15.0 billion with Accelerator products (2018: €14.3 billion).² The construction chemicals activities, which are presented as discontinued operations, are no longer taken into account. The resulting decline in sales of Accelerator products was however offset by the first-time assessment of the strategically relevant trading business portfolio. At the same time, this first-time segmentation increased sales of Transitioner products.

If, during re-assessment of our portfolio, we identify products with substantial sustainability concerns, we classify these as "Challenged." We develop and implement action plans for all products in this category. These action plans include research projects and reformulations to optimize products, or even replacing the product with an alternative.

Classification of relevant portfolio^{1, 2} according to the Sustainable Solution Steering method



¹ The relevant portfolio is defined in the Sustainable Solution Steering Manual at basf.com/en/sustainable-solution-steering

² Excluding the construction chemicals activities presented as discontinued operations; the figures for 2018 have been adjusted accordingly

2025 target

Increase sales from Accelerator products to

€22 billion

To systematically align our portfolio with contributions to sustainability, as of 2018, we will phase out all Challenged products within five years of initial classification as such at the latest. We strive to offer products that make a greater contribution to sustainability in their area of application to live up to our own commitments and meet our customers' demands. This is why our Sustainable Solution Steering method is used in areas such as our research and development pipeline, in business strategies as well as in merger and acquisition projects.

For more information on Sustainable Solution Steering, see [basf.com/en/sustainable-solution-steering](https://www.basf.com/en/sustainable-solution-steering)

Stakeholder engagement**■ Continuous dialog with our stakeholders**

Our stakeholders include customers, employees, suppliers and investors, as well as representatives from academia, industry, politics and society. Parts of our business activities, such as the use of certain new technologies or our environmental impacts, are often viewed by stakeholders with a critical eye. We address these questions, initiate dialogs and participate in discussions. Such dialogs with our stakeholders help us to even better understand what groups of society expect of us and which measures we need to pursue in order to establish and maintain trust and build partnerships, and increase societal acceptance for and the sustainability of our business activities. For important topics, we systematically identify key stakeholders to discuss critical questions with them.

Relevant considerations include topic-specific expertise and willingness to engage in constructive dialog.

We draw on the competence of global initiatives and networks, and contribute our own expertise. We are active in worldwide initiatives with various stakeholder groups. These include the Business for Inclusive Growth initiative, which was established in 2019 by a coalition of 40 international companies who have joined forces with the G7 countries and the OECD to strengthen equality of opportunity, and tackle regional disparities and gender discrimination. We also have been a member of the U.N. Global Compact since its establishment in 2000. As a recognized LEAD company, we contribute to the implementation of the Agenda 2030 and the associated goals. We support projects such as the U.N. Global Compact's Action Platforms on Decent Work in Global Supply Chains (SDG 8) and on Good Health and Well-being (SDG 3), and are a member of the U.N. Global Compact Expert Network. In addition, BASF is a founding member of a global sustainable finance initiative launched in December 2019 by a CFO taskforce. BASF is also active in 15 local Global Compact networks.

In 2019, we once again met with the Stakeholder Advisory Council to discuss important aspects of sustainability. The main topics were identifying our material topics, the materiality analysis, impact valuation, and the issues of climate protection and human rights. We received valuable recommendations. For example, the Stakeholder Advisory Council suggested we approach our activities on the issue of human rights more systematically. We implemented the recommendation in 2019 with the publication of the new human rights position, a first gap analysis and the systematic presentation of our due diligence process.

Our political advocacy is conducted in accordance with transparent guidelines and our publicly stated positions. The same applies to our activities in associations. For instance, in 2019 we published an Industry Associations Review comparing the energy and climate protection positions of BASF and the most important

**Alliance to End Plastic Waste**

In January 2019, BASF co-founded the Alliance to End Plastic Waste (AEPW) together with other companies from along the value chain – from plastics producers and consumer goods manufacturers to waste disposal companies. The AEPW has over 40 members, who together aim to develop solutions that avoid the discharge of plastic waste into the environment, especially the ocean. The focus is on four action areas: Development of waste collection infrastructure, promotion of innovative recycling methods, education and engagement of various stakeholder groups, and clean-up of areas heavily affected by plastic waste. The AEPW intends to invest up to \$1.5 billion in various projects and cooperative ventures over the next five years, mainly in Asia and Africa. BASF is also driving forward its own activities to strengthen the circular economy for plastics, including the ChemCycling™ project (see page 105).

associations of which we are a member, with explanations on our approach.

BASF does not financially support political parties. In the United States, employees at BASF Corporation have exercised their right to establish a Political Action Committee (PAC). The BASF Corporation Employee PAC is a voluntary, federally registered employee association founded in 1998. It collects donations for

political purposes and independently decides how these are used, in accordance with U.S. law.

We have a particular responsibility toward our production sites' neighbors. With the established community advisory panels, we promote open exchange between citizens and our site management and strengthen trust in our activities. Our globally binding requirements for community advisory panels are based on the grievance mechanism standards in the United Nations' Guiding Principles on Business and Human Rights. We keep track of their implementation through the existing global databank of the Responsible Care Management System.

For more information on stakeholder dialog, see basf.com/en/stakeholder-dialog

For more information on the Stakeholder Advisory Council, see basf.com/en/stakeholder-advisory-council

For more information on our guidelines for responsible lobbying, see basf.com/guidelines_political_communication

For more information on the Industry Associations Review, see basf.com/corporategovernance

Responsibility for human rights

■ New human rights position resolved by Board of Executive Directors and published

BASF acknowledges its responsibility to respect internationally recognized human rights. We have embedded this into our Code of Conduct and our human rights position. In 2019, we updated our human rights position based on the U.N. Guiding Principles on Business and Human Rights. All employees and members of management bodies are responsible for ensuring that we act in accordance with our Code of Conduct and our human rights position. We uphold our standards worldwide, even where they exceed local legal requirements. We avoid causing or contributing to adverse human rights impacts through our own operations.

From 2020 onward, our Compliance organization will steer the topic of human rights and develop binding policies. A group of internal experts from different specialist units will also meet regularly to coordinate relevant topics across units. This group will serve an advisory function for issues such as conflicting goals, will develop and implement specific training, and ensure that due diligence structures and processes are in place. To systematically incorporate external expertise, we decided to establish a Human Rights Advisory Council with independent, international human rights experts in 2020. Our Stakeholder Advisory Council also brings external perspectives to discussions with the Board of Executive Directors. We see assuming our human rights responsibilities as a continuous process. This is why we continuously review our policies and processes and update them if necessary.

We want to ensure that our actions do not have a negative impact on humans rights. We have long used monitoring and management systems such as health, safety, product stewardship or labor and social standards to identify potential and actual negative impacts. Evaluating potential human rights impacts is an integral part of risks analyses, for example for investment projects or product assessments. In 2019, we additionally conducted a comprehensive human rights compliance assessment, developed by the Danish Institute for Human Rights. This assessment covers international human rights standards as well as potential impacts on our stakeholders. We perform due diligence processes on the basis of this.

Our measures and criteria for monitoring and complying with human rights are integrated into the supplier evaluation processes; our global monitoring systems for environmental protection, safety and security, health protection and product stewardship; the evaluation of investment, acquisition and divestiture projects; assessments along the product lifecycle; training for security personnel at our sites; and systems to monitor labor and social standards.

As an internationally operating company, we are embedded in many societies and engage with partners around the world. We rely on our partners (joint venture partners, contractors, suppliers, and customers), expect them to comply with internationally recognized human rights standards and to replicate them further along the value chain with their subsequent partners. For instance, we contractually agreed with our two joint venture partners in the Chinese region of Xinjiang that the basis for joint activities is the BASF Code of Conduct and the requirements embedded in it to respect human rights and relevant labor and social standards (such as the exclusion of forced labor and discrimination in hiring, promotion and dismissal practices). We review this on a regular basis with audits. We support our partners in their efforts to meet their respective responsibilities. Together, we strive to avoid harm to human rights along our value chain. We have defined our expectations in a binding Supplier Code of Conduct.

Employees and third parties can report potential violations of laws or company guidelines to our compliance hotlines. In 2019, 228 human rights-related complaints were received by phone as well as by post and e-mail. All complaints received were reviewed and forwarded to the relevant departments for in-depth investigation. If justified, appropriate measures were taken.

For many years now, we have engaged in constructive dialog on human rights with other companies, nongovernmental organizations, international organizations and multi-stakeholder initiatives to better understand different perspectives and address conflicting goals. BASF is a founding member of the U.N. Global Compact and a member of the Global Business Initiative on Human Rights (GBI), a group of globally operating companies from various sectors. The initiative aims to ensure implementation of the U.N. Guiding Principles on Business and Human Rights. We report on our global targets, monitoring systems and measures to integrate human rights topics into our business activities in publications such as this report and online.

For more information on systems for monitoring labor and social standards, see page 126 onward

For more information on our production standards, see page 109 onward

For more information on standards in our supply chain, see page 102 onward

For more information on compliance, see page 157 onward

See basf.com/humanrights for more information on the human rights position and a comprehensive report on the implementation of due diligence in human rights in accordance with the requirements of the National Action Plan developed by the German government, and in accordance with the U.N. Guiding Principles on Business and Human Rights

Social commitment

- **BASF as a responsible neighbor**
- **Contribution to the United Nations' Sustainable Development Goals**

Our social commitment helps to achieve the U.N. SDGs. As part of our social engagement strategy, we focus on projects that will have a lasting impact on specific target groups and offer learning opportunities for participating cooperation partners and BASF. For instance, we have supported *Wissensfabrik*, an initiative of German businesses to promote education and entrepreneurship, for over 10 years.

As a responsible neighbor, we strive to create a livable community for our sites' neighbors, employees and their families. In Germany, community engagement in Ludwigshafen and the Rhine-Neckar metropolitan region includes strengthening participation and integration of disadvantaged groups as well as promoting research and discovery. It is particularly important to us that we work together with our partners to increase the effectiveness of individual measures. In the project *#WirGestaltenSchule*, for example, we are working together with partners to improve education equality. We promote cooperation between nonprofit organizations with the *Gemeinsam Neues schaffen* program.

We foster social integration, particularly of low-achieving young people and refugees, with programs such as *Start in den Beruf* and *Start Integration*. In 2019, 151 young people in the BASF Training Verbund participated in these two programs in cooperation with partner companies in the Rhein-Neckar metropolitan region. The goal is to prepare participants for an apprenticeship within one year, and ultimately secure the long-term supply of qualified employees for BASF and in the region as a whole. Since being launched at the end of 2015, BASF's *Start Integration* program has supported around 380 refugees with a high probability of being granted the right to remain in Germany, helping to integrate them into the labor market. We spent around €3.4 million on the BASF Training Verbund in 2019.

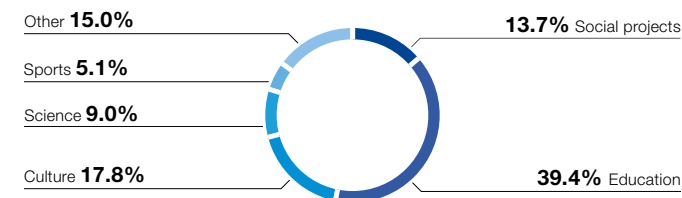
Two other examples of BASF's impact-driven social engagement are its activities in India and Indonesia. In Mauk, Indonesia, we initiated a school project in cooperation with local authorities and the nonprofit organization Habitat for Humanity. The targeted use of digital media improves teaching and learning conditions for young people and helps to modernize and improve access to education. At our Dahej and Mangalore sites in India, we support projects with a focus on clean water, sanitation and education. For example, we sponsored the construction of toilets and an accompanying educational program to strengthen community awareness. Better hygiene and sanitation help prevent the spread of disease.

We also aim to create long-term value for BASF and society with new business models and cross-industry partnerships. Our Starting Ventures program helps people with precarious livelihoods to improve their income-earning opportunities and their quality of life. At the same time, the program provides access to new markets and strengthens our contribution to reaching the SDGs.

In the area of international development work, we support the BASF Stiftung, an independent nonprofit organization, through donations to its projects with various U.N. organizations. In 2019, BASF supported a project spearheaded by the U.N. Children's Fund (UNICEF) to construct a youth center for young Rohingya refugees in Bangladesh with its annual year-end donation campaign to the BASF Stiftung. In total, €359,987.00 was raised for the UNICEF project from donations by the employees of participating German Group companies and BASF.

The BASF Group spent a total of €32.0 million supporting projects in 2019; we donated 42.5% of this amount (2018: €38.4 million, of which 39% were donations).

BASF Group donations, sponsorship and own projects in 2019^a



^a Figure relates to all consolidated companies with employees including joint operations

For more information on Starting Ventures, see basf.com/en/starting-ventures

For more information on social commitment at our sites, see ludwigshafen.basf.de/commitment

The BASF Group's Business Year

Material Investments and Portfolio Measures

In addition to innovations, investments make a decisive contribution toward achieving our ambitious growth goals. We use targeted acquisitions to supplement our organic growth.

By investing in our plants, we create the conditions for the profitable growth we strive for while constantly improving the efficiency of our production processes. For the period from 2020 to 2024, we have planned capital expenditures (capex)¹ totaling €23.6 billion worldwide.

[For more information on our investments from 2020 onward, see page 138](#)

With a world market share of more than 40%, China is today the largest chemical market and drives the growth of global chemical production. We expect China's share to increase to nearly 50% by 2030. To continue to participate in this growth in Asia in the future, we are investigating the possibility of building an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong. A framework and investment agreement for the project was signed with Guangdong Provincial Government in January 2019. We also plan to expand the site we operate together with our partner Sinopec in Nanjing, China.

In addition, we are refining our portfolio through acquisitions that promise above-average profitable growth as part of the BASF Verbund to help reach a relevant market position. A key consideration is that these are innovation-driven or offer a technological differentiation, and make new, sustainable business models possible. Investments and acquisitions alike are prepared by inter-

disciplinary teams and assessed using various criteria. In this way, we ensure that economic, environmental and social concerns are included in strategic decision-making.

Investments and acquisitions 2019

Million €

	Investments	Acquisitions	Total
Intangible assets	292	(37)	255
of which goodwill	–	(47)	(47)
Property, plant and equipment ^a	3,839	3	3,842
Total	4,131	(34)	4,097

^a Including restoration obligations, IT investments and right-of-use assets arising from leases

Investments

We invested €3,839 million in property, plant and equipment in 2019 (previous year: €3,615 million). Capex¹ accounted for €3,349 million of this amount (previous year: €3,498 million). Our investments in 2019 focused on the Chemicals, Materials, Surface Technologies and Nutrition & Care segments.

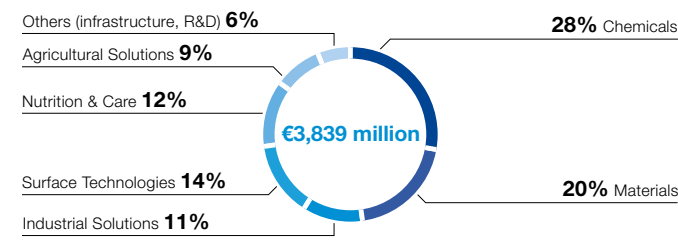
In Europe, we strengthened the Verbund by replacing our acetylene plant in Ludwigshafen, Germany, which plays a central role for many products and value chains, with a modern, highly efficient plant. We also built another production plant for special zeolites in Ludwigshafen, Germany. Special zeolites are used to produce state-of-the-art exhaust catalysts for commercial vehicles and passenger cars with diesel engines. Construction continued for another production plant for vitamin A, which is scheduled for startup in 2021. In Antwerp, Belgium, we are expanding our ethylene oxide complex.

In North America, we continued construction of a MDI synthesis unit in Geismar, Louisiana. Startup is scheduled for 2020. We are expanding the output of the ibuprofen plant in Bishop, Texas.

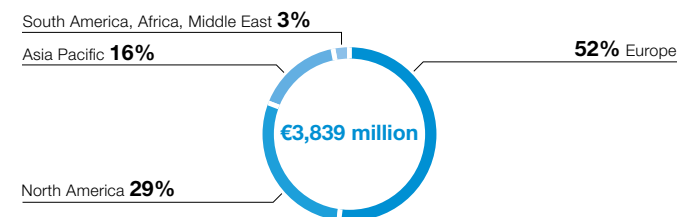
In Asia, we started construction of the first plants at the planned integrated Verbund site in Zhanjiang, China, in 2019. The first production facilities are scheduled for completion in 2022. We started up a plant for plastics additives in Shanghai, China. These investments strengthen our presence in Asia.

[For more information on investments within the segments, see page 60 onward](#)

Additions to property, plant and equipment^a by segment in 2019



Additions to property, plant and equipment^a by region in 2019



^a Including restoration obligations, IT investments and right-of-use assets arising from leases

¹ Additions to property, plant and equipment excluding acquisitions, restoration obligations, IT investments and right-of-use assets arising from leases

Acquisitions

We added €3 million worth of property, plant and equipment through acquisitions in 2019. Additions to intangible assets was negative, at minus €37 million, due to the adjustment of the purchase price allocation for the businesses acquired from Bayer.

[For more information on acquisitions, see the Notes to the Consolidated Financial Statements from page 210 onward](#)

On September 26, 2019, we acquired Isobionics B.V., Geleen, Netherlands, an innovation leader in biotechnology. The company develops and produces a wide range of natural flavors and fragrances. The acquisition strengthens the Nutrition & Health division.

Divestitures

On January 31, 2019, BASF and Solenis completed the transfer of BASF's paper and water chemicals business to Solenis as announced in May 2018. Since February 1, 2019, we have held a 49% share in Solenis, which is accounted for using the equity method. An equity-accounted interest in the amount of €590 million was added in this connection.

[For more information on this divestiture, see the Notes to the Consolidated Financial Statements from page 213 onward](#)

Following the approval of all relevant authorities, BASF and LetterOne completed the merger of Wintershall and DEA effective May 1, 2019. In September 2018, BASF and LetterOne had signed a transaction agreement to merge their respective oil and gas businesses in a joint venture. Shareholder loans were replaced by bank loans in the course of the merger. BASF and LetterOne intend to list Wintershall Dea on the stock exchange by way of an initial public offering (IPO) in the second half of 2020, provided market conditions are suitable. Since May 1, 2019, BASF's 72.7% interest in Wintershall Dea has been reported in the Consolidated Financial Statements of the BASF Group according to the equity method, with an initial valuation at fair value. The gain of €5.7 billion

from the transition from full consolidation to the equity method is included in income after taxes from discontinued operations for the second quarter of 2019.

On December 6, 2019, BASF India Limited sold its stilbene-based optical brightening agents (OBA) business for paper and powder detergent applications to Archroma India Private Limited, Mumbai, India. The production plant was part of the Performance Chemicals division and the stilbene-based OBA business was allocated to the Performance Chemicals and Care Chemicals divisions.

We completed the sale of the ultrafiltration membrane business to DuPont Safety & Construction (DuPont) on December 31, 2019. The divestiture includes the shares of inge GmbH, the business' headquarters and production site in Greifenberg, Germany, including all employees, its international sales force, and certain intangible assets. The ultrafiltration membrane business had been part of the Performance Chemicals division.

Agreed transactions

In September 2017, we signed an agreement with Solvay on the acquisition of Solvay's global polyamide business, subject to the approvals of the relevant antitrust authorities. The E.U. Commission approved the acquisition of the polyamide business, subject to certain conditions, on January 18, 2019. These conditions require the sale of parts of the original transaction volume to a third party, specifically Solvay's production plants in the engineering plastics field in Europe. Domo Chemicals, Leuna, Germany, was approved by the E.U. Commission as the buyer. The transactions between Solvay and BASF and Solvay and Domo Chemicals closed on January 31, 2020. BASF acquired the polyamide business for a purchase price of €1.3 billion (on a cash and debt-free basis) and will integrate it into the Performance Materials and Monomers divisions. In addition to eight production sites in Germany, France, China, India, South Korea, Brazil and Mexico, the acquisition includes

research and development and technical consultation centers in Asia and the Americas.

On August 29, 2019, BASF and DIC, Tokyo, Japan, reached an agreement on the acquisition of BASF's global pigments business. The purchase price on a cash and debt-free basis is €1.15 billion. The assets and liabilities to be divested were reclassified to a disposal group in the Dispersions & Pigments division as of this date. The transaction is expected to close in the fourth quarter of 2020, subject to the approval of the relevant competition authorities.

On December 21, 2019, we signed an agreement with an affiliate of Lone Star, a global private equity firm, on the sale of our construction chemicals business. The purchase price on a cash and debt-free basis is €3.17 billion. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant competition authorities. The planned sale comprises the Construction Chemicals division, including more than 7,000 employees and production sites and sales offices in more than 60 countries. The business generated sales of €2,553 million and EBITDA of €214 million in 2019. On signing of the agreements, a disposal group was established and the statement of income adjusted retroactively as of January 1, 2019, and for the comparative year 2018. Until closing, the income after taxes of the construction chemicals business will be presented in the income after taxes of BASF Group as a separate item ("Income after taxes from discontinued operations").

Economic Environment

Global economic growth in 2019 was weaker than we forecast at the beginning of the year.¹ Industrial production in particular remained well below our expectations. Against a background of high political uncertainty and mounting trade barriers, global gross domestic product (GDP) only rose by 2.6%, considerably slower than in 2018 (+3.2%). Growth in the industry as a whole declined at a much faster rate to only 1.5% (2018: +3.1%). As a result, growth in chemical production (excluding pharmaceuticals) was also considerably slower than in the previous year, at 1.8% (2018: +2.8%). The average price for a barrel of Brent crude oil decreased to \$64 per barrel (2018: \$71 per barrel).

[For the outlook on the economic environment in 2020, see page 133 onward](#)

Trends in the global economy in 2019

At 2.6%, global GDP growth was significantly below the prior-year figure but remained only slightly below expectations at the start of the year (forecast: +2.8%) thanks to a stable services sector. Industry growth declined at a much stronger pace. The escalation of the trade conflict between the United States and China and the ongoing uncertainty surrounding the timing and nature of Brexit dampened demand for investment goods, consumer durables and their intermediates from the chemical industry. An accelerated structural transformation of the automotive industry also played a role.

Gross domestic product

Real change compared with previous year

World	2019	2.6%	<div></div>
	2018	3.2%	<div></div>
European Union	2019	1.4%	<div></div>
	2018	2.0%	<div></div>
United States	2019	2.3%	<div></div>
	2018	2.9%	<div></div>
Emerging markets of Asia	2019	5.4%	<div></div>
	2018	6.1%	<div></div>
Japan	2019	0.7%	<div></div>
	2018	0.3%	<div></div>
South America	2019	0.7%	<div></div>
	2018	1.1%	<div></div>

Economic trends by region

- Weaker growth in the European Union and United States
- Volatile, weaker economic momentum in China
- Crises and low growth in South America

In the **European Union (E.U.)**, GDP growth declined from 2.0% in 2018 to only 1.4%. Growth was weaker than in the previous year in almost all E.U. countries. The decline was especially pronounced in Germany (2019: +0.6%, 2018: +1.5%). Due to its high share of value added in investment goods and vehicles, Germany was particularly affected by the cyclical economic downturn, the political trade distortions and the structural transformation in the automotive industry. In Italy, GDP was virtually flat after growing by 0.7% in the previous year. The dampening effects were not as strongly felt in France (+1.3%) and Spain (+2.0%). Despite Brexit uncertainty, growth in the United Kingdom remained largely stable (+1.4%). This was mainly attributable to solid consumer demand in the public and

private sectors; by contrast, exports and investments were weak. Despite their close integration in European value chains, the eastern E.U. countries posted much stronger growth than the rest of the E.U., at 3.7%. Rising real incomes, higher employment figures, low interest rates and increased government spending supported growth and offset the dampening effects on exports from western Europe. In **Russia**, by contrast, GDP growth slowed to only 1.3% (2018: +2.2%) against a background of restrictive monetary and fiscal policy, accordingly weak domestic demand and low export growth.

Growth in the **United States** weakened over the course of the year but remained at a comparatively high 2.3% (2018: +2.9%). The main growth driver was private consumption, supported by rising employment and higher real incomes. Industrial investment grew at a much slower pace due to lower capacity utilization. Exports stagnated amid a weak global economic environment caused by the escalating trade conflict and the resulting decline in exports to China.

Growth in the **emerging markets of Asia** was likewise slower overall than in 2018. In **China**, the GDP growth rate gradually weakened over the course of the year, due among other factors to the effects of the trade conflict with the United States, which increasingly made itself felt (2019: +6.1%, 2018: +6.6%). Growth in domestic demand was slower than in the previous year. However, in light of the stable employment figures, the Chinese government did not implement any major additional economic stimulus measures. The Chinese industry saw very mixed trends: Production in the automotive industry declined by 8.0%, while industries in the high-tech sector gained more than 8.8% overall. In India, liquidity bottlenecks negatively impacted lending and with it, demand for motor vehicles and investment goods. Overall, growth was considerably lower at 4.8% (2018: +6.1%). GDP growth in the remaining emerging markets of Asia was 3.7%, around one percentage point weaker than in the previous year.

¹ All information relating to past years in this section can deviate from the previous year's report due to statistic revisions.

Japan was able to increase growth slightly, with GDP rising by 0.7% (2018: +0.3%). Consumer spending stagnated and growth in private investment was slightly stronger than in the previous year. Private consumption was impacted by the two percentage point increase in sales tax in October 2019. Imports and exports declined amid a weaker global economic environment. Alongside the slowdown in China, developments were dampened by the trade conflict between Japan and South Korea.

Growth fell sharply in **South America**. In Argentina, the economic crisis intensified following the incumbent president's unexpectedly weak showing in local primary elections. The Argentine peso almost halved in value against the U.S. dollar and inflation jumped to more than 50%. Argentina's GDP contracted even more strongly than in the previous year (2019: -2.7%, 2018: -2.5%). The Brazilian economy was on a growth path but here, too, economic developments were curbed by the crisis in Argentina and the weak global economy (2019: +1.2%, 2018: +1.3%). Growth in Chile, Peru and Bolivia was dampened by social unrest there. Overall, GDP growth in South America slowed from 1.1% in 2018 to 0.7%.

Trends in key customer industries

- **Weak development of global industrial production**
- **Stronger declines in global automotive production**

Global industrial production grew by only 1.5% in 2019, roughly half as strongly as in 2018 (+3.1%). Production declined overall in the advanced economies (2019: -0.5%, 2018: +1.8%). Growth in the emerging markets weakened considerably (2019: +3.4%, 2018: +4.4%).

Industrial production was largely stagnant in the E.U. (2019: -0.3%, 2018: +1.4%) and the United States (2019: -0.1%, 2018: +2.7%). By contrast, this declined in Japan (2019: -1.7%, 2018: +0.8%) and South America (2019: -1.3%, 2018: +0.5%). The gradual slowdown in China continued, with industrial growth declining from 5.8%

in the previous year to 5.7%. In the remaining emerging markets of Asia, growth fell from 5.3% to only 2.6%. One of the key drivers here was below-average momentum in India (2019: +3.9%, 2018: +6.0%).

Most of the chemical industry's key customer sectors turned in a much weaker performance than in the previous year: **Global automotive production** declined by 5.4% (2018: -1.1%). Around 5.1 million fewer cars and light commercial vehicles were produced worldwide. Production declined in all major economic regions, but most notably in China (-8.0%). The downturn in the E.U. (-4.2%) and North America (-4.0%) continued as well. Alongside complications from the introduction of new emission standards, market weakness was due to the shift to electromobility, the associated higher vehicle costs and the still inadequate charging infrastructure in many places. In India, production fell by 11.0%; in South America, this declined by 4.2% overall. Only Brazil recorded weak growth of 0.8%. At 2.0%, growth in the **construction industry** was comparatively solid but still much slower than in 2018 (+2.8%). A significant contributing factor here was the drop by around 10% in the U.S. housing market. Overall, construction activity in the United States declined by 4.6% (2018: -1.3%). Higher spending on infrastructure was unable to offset the decline in housing development. In the E.U. (2019: +2.8%, 2018: +3.4%), the construction industry benefited from the low interest rate environment, tight housing markets in urban areas and growing demand for energy renovation. The eastern E.U. markets performed particularly well (+6.9%), while growth in the western E.U. countries was more subdued (+2.4%). In Asia, growth in the construction industry weakened only slightly (2019: +3.9%, 2018: +4.0%). As in 2018, the South American construction industry was largely flat. **Agricultural production** grew by 2.4%, on a level with 2018 and thus below the long-term average of around 3%. In the United States, planting was negatively impacted by unusually strong rain in the spring. The trade conflict between the United States and China also reduced agricultural exports from the United States to China, such as soybeans. In this environment, U.S. agricultural production declined by 1.5%. By contrast, production

expanded by 3.4% in South America. Argentina recorded particularly strong growth (+15.4%); however, output there had declined by 14.3% in 2018 due to drought. As in the previous year, agricultural production stagnated in Europe (2019: -0.1%, 2018: +0.0%). In Asia, the growth rate was roughly on a level with the previous year, at 3.3% (2018: +3.5%).

Growth in key customer industries

Real change compared with previous year			
	2019	2018	
Industry total	1.5%	3.1%	
Transportation	(2.6%)	0.3%	
Of which: automotive industry	(5.4%)	(1.1%)	
Energy and resources	1.2%	3.1%	
Construction	2.0%	2.8%	
Consumer goods	1.5%	2.4%	
Electronics	3.8%	8.5%	
Health and nutrition	3.0%	3.8%	
Agriculture	2.4%	2.4%	

Trends in the chemical industry

■ Global growth much weaker than in prior year and below expectations

The global chemical industry (excluding pharmaceuticals) grew by only 1.8%, well below our expectations (+2.7%) and the 2018 figure (+2.8%). Chemical production in the E.U. declined for the second year in a row (2019: -1.1%, 2018: -0.4%). We had forecast stagnation here (+0.1%).

The year-on-year change was particularly pronounced in the United States (2019: -0.4%, 2018: +4.1%). Consequently, our forecast for 2019 (+3.2%) was also significantly undershot. The drop in growth there was mainly attributable to weak domestic demand from the automotive industry, agriculture and the construction industry. In addition, U.S. chemical exports to China fell significantly as a result of the trade conflict. In South America, too, chemical production declined by 2.0% amid a weak overall economic environment (2018: -0.6%).

By contrast, chemical production in the emerging markets of Asia grew by 4.0%, slightly stronger than expected (+3.6%). This was primarily driven by continued solid growth in China (+4.7%). Chemical production in the remaining emerging markets in the region only rose by 1.1% (2018: +2.7%). By contrast, Japan saw a decline of 0.4%.

Important raw material price developments

- Lower prices for crude oil and naphtha
- Year-on-year decrease in gas prices, but with wide regional variance

Averaging around \$64 per barrel in 2019, the **oil price** for Brent crude declined by about 9% compared with the previous year (\$71 per barrel). The average monthly oil price fluctuated over the

course of the year between \$71 per barrel in April and May and \$59 per barrel in January and August.

Over the course of the year, the average monthly price for the chemical raw material **naphtha** ranged between \$447 per metric ton in August and \$563 per metric ton in April. At \$505 per metric ton, the annualized average price of naphtha in 2019 was lower than in 2018 (\$602 per metric ton).

The average **price of gas** in the United States was \$2.56 per mmBtu, below the level of the previous year (\$3.16 per mmBtu). In Europe, the average price of gas on the spot market was significantly lower than in 2018, at \$4.46 per mmBtu (2018: \$7.90 per mmBtu). Gas prices in China averaged around \$6.39 per mmBtu nationally (2018: \$6.38 per mmBtu), while the average price in the coastal provinces of Shanghai, Jiangsu, Zhejiang, Shandong and Guangdong was \$7.59 per mmBtu (2018: \$7.59 per mmBtu).

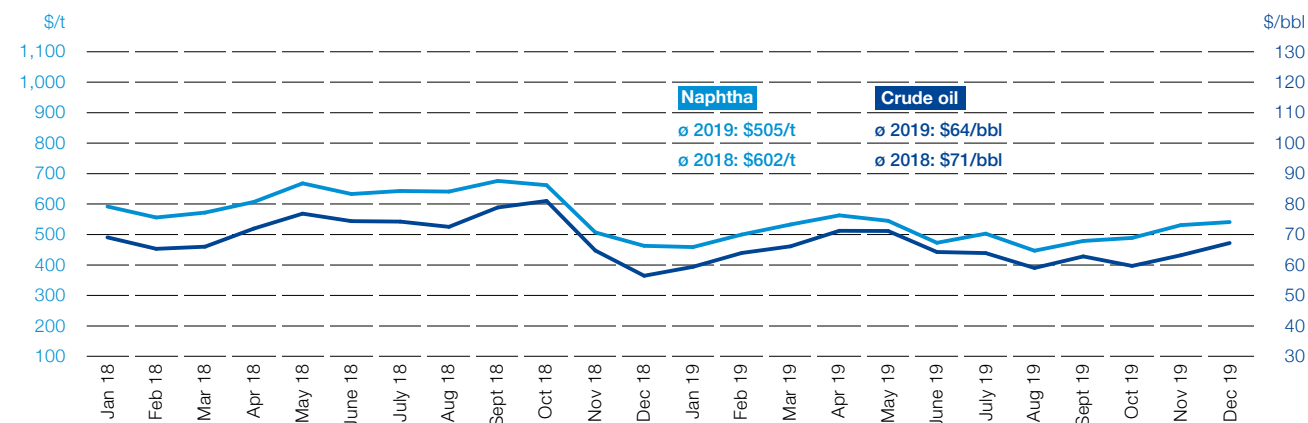
Chemical production (excluding pharmaceuticals)

Real change compared with previous year

World	2019	1.8%	
	2018	2.8%	
European Union	2019	(1.1%)	
	2018	(0.4%)	
United States	2019	(0.4%)	
	2018	4.1%	
Emerging markets of Asia	2019	4.0%	
	2018	3.8%	
Japan	2019	(0.4%)	
	2018	1.3%	
South America	2019	(2.0%)	
	2018	(0.6%)	

Price trends for crude oil (Brent) and naphtha

\$/barrel, \$/metric ton



Results of Operations

The world economy saw much weaker growth in 2019 than in 2018. Growth in global industrial production and in the global chemical industry (excluding pharmaceuticals) was also significantly below the prior-year level. In this market environment, BASF's business did not perform as well as we expected: Sales were down slightly from the prior-year figure and earnings declined considerably.

Business reviews by segment can be found from page 60 onward

Sales

■ Sales 2% lower at €59,316 million

Sales declined by €904 million to €59,316 million in 2019 due to lower volumes and prices. The Chemicals and Materials segments in particular recorded lower sales volumes. Sales development was dampened by lower prices, especially in the Materials and Chemicals segments. By contrast, prices rose significantly in the Surface Technologies segment. Offsetting effects came from the acquisition of significant businesses and assets from Bayer in the Agricultural Solutions segment, which was completed in August 2018, and positive currency effects.

Sales^{a, b}

Million €		
2019	59,316	
2018	60,220	
2017	61,223	
2016	57,550	
2015	70,449	

a Sales for 2018 were reduced by the share attributable to construction chemicals activities due to their presentation as discontinued operations. Figures for the years 2015 to 2017 have not been restated.

b Sales for 2017 were reduced by the share attributable to oil and gas activities due to their presentation as discontinued operations. Figures for the years 2015 to 2016 have not been restated.

Factors influencing sales of the BASF Group

	Change in million €	Change in %
Volumes	(1,656)	(3)
Prices	(1,500)	(3)
Currencies	1,183	2
Acquisitions	1,472	3
Divestitures	(414)	(1)
Changes in the scope of consolidation	11	0
Total change in sales	(904)	(2)

Income from operations

■ Considerable decline in EBIT before special items, EBIT and ROCE

Income from operations (EBIT) before special items decreased by €1,745 million to €4,536 million as a result of significantly lower contributions from the Materials and Chemicals segments. The Materials segment in particular recorded a considerable decline in earnings, mainly from lower isocyanate margins. The earnings decrease in the Chemicals segment was attributable to lower volumes and softer margins, especially in the Petrochemicals division due in particular to the scheduled turnarounds of our steam crackers in North America and Europe. The EBIT before special items of Other was also considerably below the 2018 figure. By contrast, we increased EBIT before special items in all other segments. This rose considerably in the Agricultural Solutions segment, primarily from sales growth as a result of the businesses acquired from Bayer. EBIT before special items was also considerably above the prior-year level in the Industrial Solutions segment due to lower fixed costs, positive currency effects and higher margins. The Surface Technologies segment likewise saw a considerable improve-

ment in EBIT before special items owing to an increase in both divisions. In the Nutrition & Care segment, EBIT before special items rose slightly due to a considerable improvement in the Care Chemicals division's contribution.

For an explanation of the indicator EBIT before special items, see page 30

EBIT before special items^{a, b}

Million €		
2019	4,536	
2018	6,281	
2017	7,645	
2016	6,309	
2015	6,739	

a EBIT before special items for 2018 was reduced by the share attributable to construction chemicals activities due to their presentation as discontinued operations. Figures for the years 2015 to 2017 have not been restated.

b EBIT before special items for 2017 was reduced by the share attributable to oil and gas activities due to their presentation as discontinued operations. Figures for the years 2015 to 2016 have not been restated.

Special items in EBIT totaled minus €484 million in 2019, compared with minus €307 million in the previous year. The increase in special items is primarily attributable to structural measures in connection with our Excellence Program. In addition, integration costs rose from €169 million to €303 million, mainly for the businesses acquired from Bayer in the Agricultural Solutions segment. The increase in net special income from divestitures and higher other income had an offsetting effect. Divestitures led to a positive earnings contribution of €286 million in 2019, in particular from the transfer of BASF's paper and water chemicals business to the Solenis group and the sale of businesses in the Agricultural Solutions segment in accordance with the conditions imposed by antitrust authorities in connection with the acquisition of the Bayer businesses. The special items recognized in other charges and income amounted to €160 million in 2019, compared with minus €63 million in the previous year, and mainly resulted from the sale of BASF's share of the Klybeck site in Basel, Switzerland. This was partly offset by a special charge from the impairment of project costs

for a planned methane-to-propylene plant on the U.S. Gulf Coast in the Chemicals segment.

[For the definition of special items, see page 30](#)

Special items

Million €	2019	2018
Restructuring measures	(627)	(95)
Integration costs	(303)	(169)
Divestitures	286	20
Other charges and income	160	(63)
Total special items in EBIT	(484)	(307)

At €4,052 million, **EBIT** for the BASF Group in 2019 was considerably below the previous year's level (2018: €5,974 million). This figure includes income from companies accounted for using the equity method, which declined from €269 million to €116 million. Since February 1, 2019, this has also included BASF's share in Solenis' net income and since May 1, 2019, BASF's share in Wintershall Dea's net income. Both shareholdings contributed losses to income from companies accounted for using the equity method. The contribution from BASF-YPC, which operates the Verbund site in Nanjing, China, also declined.

EBIT^{a, b}

Million €		
2019	4,052	
2018	5,974	
2017	7,587	
2016	6,275	
2015	6,248	

^a EBIT for 2018 was reduced by the share attributable to construction chemicals activities due to their presentation as discontinued operations. Figures for the years 2015 to 2017 have not been restated.

^b EBIT for 2017 was reduced by the share attributable to oil and gas activities due to their presentation as discontinued operations. Figures for the years 2015 to 2016 have not been restated.

We have used the indicator **return on capital employed (ROCE)** since the 2018 business year. It measures the profitability of the capital employed by the segments. ROCE was 7.7%, after 12.0% in the previous year. The decline in ROCE was primarily due to the combination of lower EBIT and higher capital employed. The increase in capital employed was largely attributable to the full-year inclusion of the assets acquired from Bayer in August 2018. Higher property, plant and equipment from the initial application of IFRS 16 also contributed to the increase.¹

[For more information on the determination of ROCE, see page 30](#)

The calculation of EBIT as part of our statement of income is shown in the Consolidated Financial Statements on page 194

ROCE

Million €	2019	2018
EBIT of BASF Group	4,052	5,974
– EBIT of Other	(667)	(506)
EBIT of the segments	4,719	6,480
Cost of capital basis of segments, average of month-end figures	60,900	53,930
ROCE %	7.7	12.0

Capital employed

Million €	2019	2018
Intangible assets	14,832	11,995
+ Property, plant and equipment	20,472	17,973
+ Investments accounted for using the equity method	1,527	1,611
+ Inventories	11,593	10,611
+ Accounts receivable, trade	10,061	9,747
+ Current and noncurrent other receivables and other assets ^a	1,913	1,716
+ Assets of disposal groups	502	277
Cost of capital basis of segments, average of month-end figures	60,900	53,930
+ Deviation from cost of capital basis at closing rates as of December 31	(1,534)	5,770
+ Assets not included in cost of capital	27,584	26,856
of which disposal groups for the oil and gas business and the construction chemicals business	2,706	16,807
Assets of the BASF Group as of December 31	86,950	86,556

^a Including customer/supplier financing and other adjustments

¹ For more information on net assets, see page 52 onward

Financial result and income after taxes

- **Financial result slightly below previous year; considerable year-on-year growth in net income**
- **Earnings per share increase from €5.12 to €9.17**

The **financial result** amounted to minus €750 million in 2019, compared with minus €741 million in the previous year.

At minus €45 million, **net income from shareholdings** was down €2 million from the previous year, mainly as a result of lower dividend income.

Higher interest expenses for financial indebtedness led to a lower **interest result** of minus €465 million (2018: minus €363 million), largely from higher U.S. dollar commercial paper during the year. In addition, interest expenses of €39 million arose in connection with leases.

This was partly offset by a €95 million improvement in the other financial result, primarily due to lower expenses from hedging of financial indebtedness.

Income before income taxes decreased from €5,233 million in the previous year to €3,302 million in 2019. Income taxes declined accordingly, from €1,117 million in the previous year to €756 million in 2019. The BASF Group tax rate amounted to 22.9% in 2019, after 21.3% in 2018. The increase was mainly attributable to taxes for prior years, especially in Germany and the United States.

Income after taxes from continuing operations declined from €4,116 million to €2,546 million. **Income after taxes from discontinued operations** rose by €5,082 million to €5,945 million. This figure included the construction chemicals business and, until the end of April, our oil and gas activities. A book gain of €5,684 million from the deconsolidation of the Wintershall companies following

the merger of the oil and gas activities of Wintershall and DEA on May 1, 2019, contributed significantly to the increase. The income after taxes of the discontinued construction chemicals business was €24 million, around €10 million below the prior-year figure. The decrease was mainly driven by special items in connection with the planned divestiture.

Noncontrolling interests declined by €202 million to €70 million, largely from the lower earnings of Shanghai BASF Polyurethane Company Ltd. due to lower margins and as a result of the above-mentioned deconsolidation of the Wintershall companies in the second quarter of 2019.

Net income amounted to €8,421 million, considerably higher than the prior-year figure of €4,707 million due to the above-mentioned book gain. **Earnings per share** were €9.17, compared with €5.12 in 2018.

For information on the items in the statement of income, see the Notes to the Consolidated Financial Statements from page 226 onward

For information on the tax rate, see the Notes to the Consolidated Financial Statements from page 233 onward

For more information on the results of operations of discontinued operations, see page 98 onward

Additional indicators for results of operations

- **Adjusted earnings per share decline from €5.87 to €4.00**
- **EBITDA before special items and EBITDA considerably below previous year**

We also use alternative performance measures (APMs) to steer the BASF Group. Investors, analysts and rating agencies use them to assess our performance. These are not defined by IFRS. As such, the methods of calculation can differ from those used by other companies. Alternative performance measures for the results of operations are EBIT before special items, EBITDA before special items, EBITDA, the EBITDA margin and adjusted earnings per share.

Other APMs are net debt,¹ free cash flow¹ and capital expenditure (capex).²

Income from operations before depreciation, amortization and special items (EBITDA before special items) and **income from operations before depreciation and amortization (EBITDA)** are indicators that describe operational performance independent of age-related depreciation and amortization of assets and any impairment or reversal of impairment. Both figures are therefore particularly useful in cross-company comparisons. EBITDA before special items is also highly useful in making comparisons over time. The **EBITDA margin** is a relative indicator and is calculated as the ratio of EBITDA to sales revenue, enabling operational performance to be compared independent of the size of the underlying business.

EBITDA before special items declined by €1,054 million year on year to €8,217 million in 2019. At €8,036 million, EBITDA was down €934 million from the prior-year figure. The EBITDA margin was 13.5% in 2019, compared with 14.9% in the previous year.

EBITDA before special items

Million €	2019	2018
EBIT	4,052	5,974
– Special items	(484)	(307)
EBIT before special items	4,536	6,281
+ Depreciation and amortization ^a	3,660	2,943
+ Impairments and reversals of impairments on intangible assets and property, plant and equipment ^a	21	47
Depreciation, amortization, impairments and reversals of impairments on intangible assets and property, plant and equipment	3,681	2,990
EBITDA before special items	8,217	9,271

^a Excluding depreciation, amortization, impairments and reversals of impairments attributable to the discontinued construction chemicals business

¹ For more information on these indicators, see the Financial Position from page 54 onward

² For more information on capex, see Value-Based Management on page 30 and Material Investments and Portfolio Measures on page 42

EBITDA

Million €	2019	2018
EBIT	4,052	5,974
+ Depreciation and amortization ^a	3,660	2,943
+ Impairments and reversals of impairments on intangible assets and property, plant and equipment ^a	324	53
Depreciation, amortization, impairments and reversals of impairments on intangible assets and property, plant and equipment	3,984	2,996
EBITDA	8,036	8,970
Sales revenue	59,316	60,220
EBITDA margin %	13.5	14.9

^a Excluding depreciation, amortization, impairments and reversals of impairments attributable to the discontinued construction chemicals business

The introduction of IFRS 16 increased capital employed by around €1 billion. At the same time, depreciation and amortization rose by around €350 million, which had a positive impact on EBITDA. Interest effects of around €39 million in the year under review led to a corresponding improvement in EBIT and EBIT before special items. The increase in capital employed and the interest effects had an offsetting impact on ROCE and slightly reduced the indicator overall.

Adjusted earnings per share

Million €	2019	2018
Income after taxes	8,491	4,979
– Special items	(484)	(307)
+ Amortization, impairments and reversals of impairments on intangible assets	652	476
– Amortization, impairments and reversals of impairments on intangible assets contained in special items	8	1
– Adjustments to income taxes	318	206
– Adjustments to income after taxes from discontinued operations	5,559	(108)
Adjusted income after taxes	3,742	5,663
– Adjusted noncontrolling interests	72	273
Adjusted net income	3,670	5,390
Weighted average number of outstanding shares (in thousands)	918,479	918,479
Adjusted earnings per share €	4.00	5.87

Compared with earnings per share, **adjusted earnings per share** is firstly adjusted for special items. Amortization, impairment and reversal of impairment on intangible assets are then eliminated. Amortization of intangible assets primarily results from the purchase price allocation following acquisitions and is therefore of a temporary nature. The effects of these adjustments on income taxes and on noncontrolling interests are also considered. This makes adjusted earnings per share a suitable measure for making comparisons over time and predicting future profitability.

In 2019, adjusted earnings per share amounted to €4.00, compared with €5.87 in the previous year.

[For information on the earnings per share according to IFRS, see the Notes to the Consolidated Financial Statements on page 226](#)

Sales and earnings

Million €	2019	2018	+/-
Sales	59,316	60,220	(1.5%)
Income from operations before depreciation, amortization and special items	8,217	9,271	(11.4%)
Income from operations before depreciation and amortization (EBITDA)	8,036	8,970	(10.4%)
EBITDA margin %	13.5	14.9	–
Depreciation and amortization ^a	3,984	2,996	33.0%
Income from operations (EBIT)	4,052	5,974	(32.2%)
Special items	(484)	(307)	(57.7%)
EBIT before special items	4,536	6,281	(27.8%)
Financial result	(750)	(741)	(1.2%)
Income before income taxes	3,302	5,233	(36.9%)
Income after taxes from continuing operations	2,546	4,116	(38.1%)
Income after taxes from discontinued operations	5,945	863	.
Net income	8,421	4,707	78.9%
Earnings per share €	9.17	5.12	79.1%
Adjusted earnings per share €	4.00	5.87	(31.9%)

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments) excluding depreciation and amortization attributable to the discontinued construction chemicals business

Sales and earnings by quarter in 2019^a

Million €	Q1	Q2	Q3	Q4	Full year
Sales	15,596	14,478	14,556	14,686	59,316
Income from operations before depreciation and amortization and special items	2,614	1,874	1,989	1,740	8,217
Income from operations before depreciation and amortization (EBITDA)	2,742	1,535	2,268	1,491	8,036
Depreciation and amortization ^b	991	1,039	923	1,031	3,984
Income from operations (EBIT)	1,751	496	1,345	460	4,052
Special items	29	(488)	280	(305)	(484)
EBIT before special items	1,722	984	1,065	765	4,536
Financial result	(195)	(203)	(168)	(184)	(750)
Income before income taxes	1,556	293	1,177	276	3,302
Income after taxes from continuing operations	1,163	243	917	223	2,546
Income after taxes from discontinued operations	277	5,686	18	(36)	5,945
Net income	1,406	5,954	911	150	8,421
Earnings per share €	1.53	6.48	1.00	0.16	9.17
Adjusted earnings per share €	1.70	0.68	0.99	0.63	4.00

Sales and earnings by quarter in 2018^a

Million €	Q1	Q2	Q3	Q4	Full year
Sales	15,156	15,119	14,960	14,985	60,220
Income from operations before depreciation and amortization and special items	2,977	2,639	2,204	1,451	9,271
Income from operations before depreciation and amortization (EBITDA)	2,961	2,575	2,131	1,303	8,970
Depreciation and amortization ^b	698	703	762	833	2,996
Income from operations (EBIT)	2,263	1,872	1,369	470	5,974
Special items	(17)	(66)	(73)	(151)	(307)
EBIT before special items	2,280	1,938	1,442	621	6,281
Financial result	(181)	(191)	(137)	(232)	(741)
Income before income taxes	2,082	1,681	1,232	238	5,233
Income after taxes from continuing operations	1,582	1,332	1,016	186	4,116
Income after taxes from discontinued operations	176	191	251	245	863
Net income	1,679	1,480	1,200	348	4,707
Earnings per share €	1.83	1.61	1.31	0.37	5.12
Adjusted earnings per share €	1.91	1.76	1.48	0.72	5.87

^a Quarterly results not audited

^b Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments) excluding depreciation and amortization attributable to the discontinued construction chemicals business

Net Assets

Assets

	December 31, 2019		December 31, 2018	
	Million €	%	Million €	%
Intangible assets	14,525	16.7	16,554	19.1
Property, plant and equipment	21,792	25.1	20,780	24.0
Investments accounted for using the equity method	15,008	17.3	2,203	2.5
Other financial assets	636	0.7	570	0.7
Deferred tax assets	2,887	3.3	2,342	2.7
Other receivables and miscellaneous assets	1,112	1.3	886	1.0
Noncurrent assets	55,960	64.4	43,335	50.0
Inventories	11,223	12.9	12,166	14.1
Accounts receivable, trade	9,093	10.5	10,665	12.3
Other receivables and miscellaneous assets	3,790	4.3	3,139	3.6
Marketable securities	444	0.5	344	0.4
Cash and cash equivalents	2,427	2.8	2,300	2.7
Assets of disposal groups	4,013	4.6	14,607	16.9
Current assets	30,990	35.6	43,221	50.0
Total assets	86,950	100.0	86,556	100.0

Assets

- Growth in total assets due to addition of equity-accounted shareholdings in Wintershall Dea and Solenis
- €1.3 billion increase in property, plant and equipment following introduction of IFRS 16

Total assets amounted to €86,950 million as of December 31, 2019, slightly above the prior-year level.

Noncurrent assets rose by €12,625 million to €55,960 million. All items except intangible assets contributed here. The main driver was investments accounted for using the equity method, which rose by €12,805 million to €15,008 million. This was largely attributable to the interest in Wintershall Dea GmbH, Kassel/Hamburg, Germany, and to a lesser extent the interest in Solenis UK International Ltd., London, United Kingdom, both of which were included for the first time.

[More information on the above transactions and disposal groups can be found on page 43 of this Management's Report and in Notes 2.4 and 2.5 to the Consolidated Financial Statements from page 210 onward](#)

Property, plant and equipment rose by €1,012 million and additionally included capitalized right-of-use assets arising from leases in the amount of around €1.3 billion as a result of the initial application of IFRS 16. Additions to property, plant and equipment exceeded depreciation and impairment for 2019 by €434 million. By contrast, the creation of the disposal groups for the construction chemicals and pigments businesses reduced property, plant and equipment by €769 million and intangible assets by €1,667 million. Amortization of intangible assets exceeded additions by €483 million; overall, intangible assets declined by €2,029 million.

Other financial assets were also above the prior-year level, rising by €66 million to €636 million. Deferred tax assets rose by €545 million to €2,887 million, primarily as a result of the increase in pension provisions. Other receivables and miscellaneous assets also rose year on year, by €226 million to €1,112 million. This was mainly due to the higher positive fair values of derivatives and interest and currency swaps used to hedge bonds in U.S. dollars.

Current assets declined by €12,231 million to €30,990 million. This was largely the result of the derecognition of disposal groups in the total amount of €14,600 million for the paper and water chemicals business in the first quarter, and for the oil and gas business in the second quarter of 2019. Offsetting effects came from the reclassification of assets to disposal groups for the pigments business in the third quarter of 2019, and for the construction chemicals business in the fourth quarter.

Trade accounts receivable declined by €1,572 million, due among other factors to reclassifications to the disposal groups. The increase in other receivables and miscellaneous assets to €3,790 million (2018: €3,139 million) is mainly attributable to higher fair values for derivatives and growth in precious metal trading items.

Inventories declined by €943 million to €11,223 million, again primarily as a result of the reclassification to the disposal groups.

Cash and cash equivalents amounted to €2,427 million, slightly above the prior-year level (2018: €2,300 million).

 For more information on the composition and development of individual asset items, see the Notes to the Consolidated Financial Statements from page 239 onward

Financial Position

Equity and liabilities

	December 31, 2019		December 31, 2018	
	Million €	%	Million €	%
Paid-in capital	4,291	4.9	4,294	5.0
Retained earnings	42,056	48.4	36,699	42.4
Other comprehensive income	(4,850)	(5.6)	(5,939)	(6.9)
Noncontrolling interests	853	1.0	1,055	1.2
Equity	42,350	48.7	36,109	41.7
Provisions for pensions and similar obligations	7,683	8.8	7,434	8.6
Tax provisions and deferred tax liabilities	2,280	2.6	2,346	2.7
Other provisions	1,340	1.5	1,301	1.5
Financial indebtedness	15,015	17.3	15,332	17.7
Other liabilities	1,678	1.9	705	0.8
Noncurrent liabilities	27,996	32.1	27,118	31.3
Accounts payable, trade	5,087	5.9	5,122	5.9
Provisions	2,938	3.4	3,252	3.8
Tax liabilities	756	0.9	695	0.8
Financial indebtedness	3,362	3.9	5,509	6.4
Other liabilities	3,427	3.9	2,998	3.5
Liabilities of disposal groups	1,034	1.2	5,753	6.6
Current liabilities	16,604	19.2	23,329	27.0
Total equity and liabilities	86,950	100.0	86,556	100.0

Equity and liabilities

- **Equity ratio of 48.7%, compared with 41.7% in previous year**
- **Net debt declines to €15,506 million**

Equity rose by €6,241 million year on year to €42,350 million. Retained earnings increased by €5,357 million to €42,056 million, mainly because income after taxes significantly exceeded dividend payments. Other comprehensive income amounted to minus €4,850 million, after minus €5,939 million in the previous year. The increase was primarily due to a positive effect in the translation adjustment following the deconsolidation of Wintershall, which more than offset the higher actuarial losses.

The equity ratio rose from 41.7% to 48.7%, mainly due to the book gain on the deconsolidation of the Wintershall companies.

Compared with the end of 2018, noncurrent liabilities increased by €878 million to €27,996 million. This was largely attributable to other liabilities. These rose by €973 million, mainly due to the inclusion of the lease liabilities recognized in connection with the initial application of IFRS 16.

In addition, provisions for pensions and similar obligations rose by €249 million, primarily as a result of significantly lower discount rates. Reclassifications to the disposal groups had an offsetting effect.

The €317 million decline in noncurrent financial indebtedness was mainly due to the reclassification of two eurobonds with an aggregate carrying amount of around €1.3 billion from noncurrent to current financial indebtedness. This was partly offset by the issue of a 10-year eurobond with a carrying amount of €247 million and two new euro-denominated loans taken out for a total of €650 million.

Current liabilities declined by €6,725 million to €16,604 million. This was mainly driven by the derecognition of the disposal group for the oil and gas business in the amount of €5,750 million in the second quarter of 2019. The reclassification of current and non-current liabilities to the disposal groups for the pigments and construction chemicals businesses had an offsetting effect.

Lower current financial indebtedness also contributed to the decline in current liabilities. The €2,147 million decrease in current financial indebtedness to €3,362 million was mainly due to the planned repayment of two eurobonds worth around €2 billion in total, as well as a reduction in U.S. dollar commercial paper. Offsetting effects included the above-mentioned reclassification of two bonds from noncurrent to current, as well as higher current liabilities to banks.

The €429 million increase in other liabilities is primarily attributable to the initial inclusion of lease liabilities in connection with the introduction of IFRS 16, as well as higher negative fair values of derivatives.

Current provisions declined by €314 million compared with the previous year, largely due to lower personnel provisions.

Tax liabilities rose by €61 million year on year to €756 million.

Net debt decreased by €2,691 million compared with December 31, 2018, to €15,506 million. This was mainly the result of the €2,464 million decline in financial indebtedness.

[For more information on the composition and development of individual equity and liability items, see the Notes to the Consolidated Financial Statements from page 251 onward](#)

[For more information on the development of the balance sheet, see the Ten-Year Summary on pages 293 to 294](#)

Net debt

Million €	December 31, 2019	December 31, 2018
Noncurrent financial indebtedness	15,015	15,332
+ Current financial indebtedness	3,362	5,509
Financial indebtedness	18,377	20,841
– Marketable securities	444	344
– Cash and cash equivalents	2,427	2,300
Net debt	15,506	18,197

Financing policy and credit ratings

- **Financing principles remain unchanged**
- **Rated A by Moody's and Standard & Poor's**

Our financing policy aims to ensure our solvency at all times, limiting the risks associated with financing and optimizing our cost of capital. We preferably meet our external financing needs on the international capital markets.

We strive to maintain a solid A rating, which ensures unrestricted access to financial and capital markets. Our financing measures are aligned with our operational business planning as well as the company's strategic direction and also ensure the financial flexibility to take advantage of strategic options.

Maturities of financial indebtedness

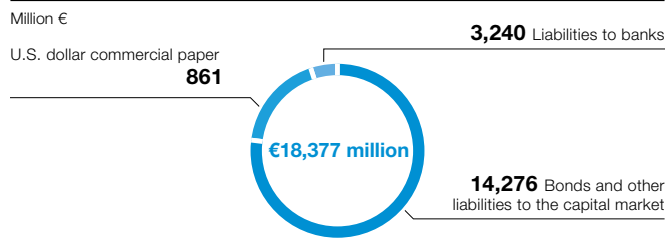
Million €	
2020	3,362
2021	1,078
2022	2,157
2023	1,223
2024	1,310
2025 and beyond	9,247

Rated A2/P-1/outlook stable by Moody's and A/A-1/outlook stable by Standard & Poor's, BASF enjoys good credit ratings, especially compared with competitors in the chemical industry. Moody's awarded its latest rating on November 4, 2019, and Standard & Poor's most recently confirmed its rating on November 13, 2019. The contract with Scope Ratings expired at the beginning of September 2019 and was not extended by BASF.

We have solid financing. Corporate bonds form the basis of our medium to long-term debt financing. These are issued in euros and other currencies with different maturities as part of our €20 billion debt issuance program. The goal is to create a balanced maturity profile, diversify our investor base and optimize our debt capital financing conditions.

For short-term financing, we use BASF SE's U.S. dollar commercial paper program, which has an issuing volume of up to \$12.5 billion. As of December 31, 2019, commercial paper with a nominal value of \$968 million was outstanding under this program, compared with \$2,922 million as of the previous year-end. A firmly committed, syndicated credit line of €6 billion was taken out in January 2019 to cover the repayment of outstanding commercial paper. It can also be used for general company purposes. This credit line was not used at any point in 2019. Our external financing is therefore largely independent of short-term fluctuations in the credit markets.

Financing instruments



Off-balance sheet financing tools are of minor importance to us. BASF Group's most important financial contracts contain no side agreements with regard to specific financial ratios (financial covenants) or compliance with a specific rating (rating trigger).

For more information on the financing tools used, see Note 24 from page 261 onward and Note 27 from page 266 onward in the Notes to the Consolidated Financial Statements

To minimize risks and leverage internal optimization potential within the Group, we bundle the financing, financial investments and foreign currency hedging of BASF SE's subsidiaries within the BASF Group where possible. Foreign currency risks are primarily hedged centrally using derivative financial instruments in the market.

Our interest risk management generally pursues the goal of reducing interest expenses for the BASF Group and limiting interest risks. Interest rate hedging transactions are therefore conducted with banks in order to turn selected liabilities to the capital market from fixed to variable interest rates or vice versa.

Statement of cash flows

■ Cash flows from operating activities and free cash flow lower year on year

Cash flows from operating activities amounted to €7,474 million, €465 million below the 2018 figure. The decrease was mainly due to lower net income after accounting for the reclassification of disposal gains from divestitures in the amount of €5,874 million to cash flows from investing activities. This was partly offset by the contribution from the change in net working capital, which improved by €1,940 million. This development was driven by the cash released from the €1,208 million reduction in trade accounts receivable in 2019, compared with cash tied up of €188 million in the previous year. In addition, inventories were reduced in 2019, after significant inventory growth in the previous year.

Cash flows from investing activities amounted to minus €1,190 million in 2019, compared with minus €11,804 million in 2018. Payments made for intangible assets and property, plant and equipment amounted to €3,824 million, only slightly lower than in the previous year. The change mainly resulted from acquisitions and divestitures. Payments received for divestitures in 2019 were €2,493 million higher than in the previous year. This

was primarily attributable to the total inflow of €2,393 million from the merger of Wintershall and DEA's oil and gas businesses, largely due to the repayment of internal loans and the implementation of capital measures. Payments made for acquisitions amounted to €239 million in 2019, compared with €7,362 million in the previous year. In the previous year, these mainly related to the purchase price payment to Bayer, which amounted to €7,208 million including liquid funds assumed.

For more information on investments and acquisitions, see page 42 onward

Cash released from changes in financial assets and miscellaneous items amounted to €273 million in 2019, after cash tied up of €655 million in 2018. This was mainly attributable to higher disposals of intangible assets and property, plant and equipment, as well as of other financing-related receivables compared with the previous year.

Cash flows from financing activities amounted to minus €6,405 million in 2019, after minus €52 million in 2018. The net cash outflow from the change in financial and similar liabilities was €3.3 billion in 2019. This was largely due to the €1.7 billion reduction in U.S. dollar commercial paper by BASF SE and the repayment of bonds in the amount of €2.0 billion. The net cash inflow of €3.0 billion in the previous year was mainly from the issue of U.S. dollar commercial paper by BASF SE with a carrying amount of around €2.5 billion. In 2019, dividends of €2,939 million were paid to shareholders of BASF SE and €125 million to noncontrolling interests, on a level with the previous year overall.

Cash and cash equivalents amounted to €2,455 million as of December 31, 2019. They declined by a cash-effective amount of €121 million in 2019.

Statement of cash flows

Million €

	2019	2018
Net income	8,421	4,707
Depreciation and amortization of intangible assets and property, plant and equipment	4,218	3,750
Changes in net working capital	1,410	(530)
Miscellaneous items	(6,575)	12
Cash flows from operating activities	7,474	7,939
Payments made for intangible assets and property, plant and equipment	(3,824)	(3,894)
Acquisitions/divestitures	2,361	(7,255)
Changes in financial assets and miscellaneous items	273	(655)
Cash flows from investing activities	(1,190)	(11,804)
Capital increases/repayments and other equity transactions	1	3
Changes in financial and similar liabilities	(3,342)	2,966
Dividends	(3,064)	(3,021)
Cash flows from financing activities	(6,405)	(52)
Changes in cash and cash equivalents affecting liquidity	(121)	(3,917)
Cash and cash equivalents at the beginning of the period and other changes	2,576	6,436
Cash and cash equivalents at the end of the year^a	2,455	2,519

^a In 2019 and 2018, cash and cash equivalents presented in the statement of cash flows deviate from the figures in the balance sheet due to the reclassification of cash and cash equivalents to disposal groups: for the construction chemicals business (€21 million) and the pigments business (€7 million) in 2019, and for the oil and gas business (€219 million) in 2018.

Free cash flow, which remains after deducting payments made for intangible assets and property, plant and equipment from cash flows from operating activities, represents the financial resources remaining after investments. It declined to €3,650 million compared with €4,045 million in the previous year due to the decrease in cash flows from operating activities.

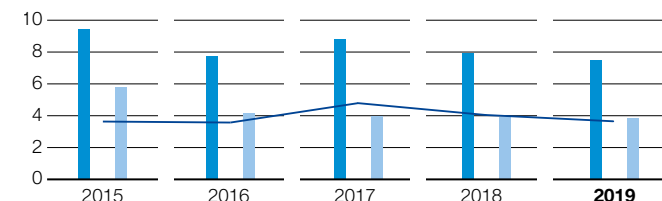
Free cash flow

Million €

	December 31, 2019	December 31, 2018
Cash flows from operating activities	7,474	7,939
– Payments made for intangible assets and property, plant and equipment	3,824	3,894
Free cash flow	3,650	4,045

Cash flow

Billion €



■ Cash flows from operating activities
■ Payments made for intangible assets and property, plant and equipment
— Free cash flow

Actual Development Compared with Outlook for 2019

BASF Group sales declined slightly in 2019, contrary to our forecast of slight growth. Sales development in the Materials and Chemicals segments in particular was weaker than expected at the beginning of the year. Contrary to our forecast of higher sales volumes, we recorded a slight decline in volumes for the BASF Group as a whole. Above all, the trade conflict between the United States and China did not ease. Consequently, income from operations (EBIT) before special items declined considerably, rather than increasing slightly as we had assumed. Earnings development in the Chemicals segment in particular did not meet our expectations. The BASF Group's return on capital employed (ROCE) declined considerably rather than slightly compared with 2018. ROCE was also considerably below the cost of capital percentage; we had expected it to be slightly above this at the beginning of 2019. We adjusted our outlook in July 2019 due to the continued difficult global economic environment, forecasting a slight decline in sales and a considerable decline in EBIT before special items and ROCE.

Sales in the **Chemicals segment** declined considerably. At the beginning of 2019, we expected sales to reach the prior-year level. Contrary to expectations, the lower volumes projected as a result of the scheduled turnarounds of our steam crackers in North America and Europe could not be offset by higher volumes in the other business areas. We recorded slightly lower volumes for plasticizers and oxo alcohols in the Petrochemicals division, as well as for amines and polyalcohols in the Intermediates division; sales volumes for styrenes in the Petrochemicals division remained at prior-year level. Lower capacity utilization of the condensate splitter in Port Arthur, Texas, had a negative impact on volumes development in North America. EBIT before special items did not increase slightly as assumed, but declined considerably. In both divisions, we were unable to improve overall margins. The expected margin growth in the butanediol value chain in the Intermediates division, and in

Forecast/actual comparison^a

	Sales		EBIT before special items		ROCE	
	2019 forecast	2019 actual	2019 forecast	2019 actual	2019 forecast	2019 actual
Chemicals	at prior-year level	considerable decline	slight increase	considerable decline	slight decline	considerable decline
Materials	slight increase	considerable decline	considerable decline	considerable decline	considerable decline	considerable decline
Industrial Solutions	slight decline	considerable decline	considerable increase	considerable increase	considerable increase	considerable increase
Surface Technologies ^b	slight increase	considerable increase	considerable increase	considerable increase	slight increase	slight increase
Nutrition & Care	considerable increase	slight increase	considerable increase	slight increase	slight increase	considerable decline
Agricultural Solutions	considerable increase	considerable increase	considerable increase	considerable increase	slight increase	slight increase
Other	considerable increase	slight increase	considerable decline	considerable decline	–	–
BASF Group	slight increase^c	slight decline	slight increase^c	considerable decline	slight decline^c	considerable decline

^a For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%). At a cost of capital percentage of 10% for 2019, we define a change in ROCE of 0.1 to 1.0 percentage points as "slight," a change of more than 1.0 percentage points as "considerable" and no change (+/–0 percentage points) as "at prior-year level."

^b Our forecast for the Surface Technologies segment at the beginning of the year still included the construction chemicals business. In determining actual development, we took into account the fact that, retroactively as of January 1, 2019, the sales and earnings of the Construction Chemicals division are no longer included in the sales, EBIT before special items or ROCE of the Surface Technologies segment.

^c We most recently updated our outlook in July 2019, forecasting a slight decline in sales and a considerable decline in EBIT before special items and ROCE.

acrylic monomers in the Petrochemicals division did not materialize. Earnings development was also negatively impacted by lower sales volumes in both divisions. As a result, ROCE did not just decline slightly, but considerably.

Contrary to our forecast, the **Materials segment** saw a considerable decline in sales, rather than a slight increase. Price levels in the Performance Materials division were slightly below the prior-year level due to lower raw materials prices for methylene diphenyl diisocyanates (MDI), and were thus unable to compensate for the expected decline in isocyanate prices in the Monomers division. Sales volumes in the Performance Materials division also fell short of our expectations as a result of weak demand from key industries, especially the automotive industry. The acquisition of Solvay's integrated polyamide business was only completed on January 31, 2020, meaning that the acquisition did not lead to a positive contribution in 2019. EBIT before special items and ROCE declined considerably as expected.

Sales in the **Industrial Solutions segment** declined considerably and were thus below our forecast of a slight decline. As expected, we were able to increase sales volumes in the Performance Chemicals division's remaining businesses following the transfer of BASF's paper and water chemicals business to the Solenis group. However, contrary to our assumptions, we recorded lower volumes in the Dispersions & Pigments division and lower prices in both divisions, mainly as a result of lower raw materials prices. Nevertheless, we increased the segment's EBIT before special items considerably as forecast. Driving factors here were lower fixed costs, positive currency effects and higher margins. ROCE was considerably above the prior-year level, as expected.

Our forecast for the **Surface Technologies segment** at the beginning of the year still included the construction chemicals business. In determining actual development, we took into account the fact that, retroactively as of January 1, 2019, the sales and earnings of the Construction Chemicals division are no longer included in the sales, EBIT before special items or ROCE of the Surface Technologies segment. We considerably improved sales in the Surface Technologies segment, outperforming our forecast of a slight increase even though sales in the Coatings division did not increase as we had anticipated, but remained at the prior-year level. This was primarily attributable to considerably higher sales in the Catalysts division on the back of higher precious metal prices. As expected, we considerably improved EBIT before special items and slightly increased ROCE.

In the **Nutrition & Care segment**, sales rose only slightly instead of considerably. Contrary to our forecast, sales in the Care Chemicals division declined due to a difficult market environment. The Nutrition & Health division recorded considerable volumes growth, but not as strong as expected. Consequently, EBIT before special items also only improved slightly instead of considerably. Rather than increasing slightly as expected, ROCE declined considerably, mainly as a result of an impairment in connection with the optimization of production sites within the Nutrition & Health division.

We considerably increased sales and EBIT before special items in the **Agricultural Solutions segment**, as forecast. ROCE rose slightly as expected.

Sales in **Other** were only slightly – instead of considerably – above the prior-year level. This was attributable to lower prices in raw materials trading. EBIT before special items declined considerably as expected.

In 2019, we invested a total of €3.3 billion in capital expenditures (capex), excluding additions from acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases. The figure forecast at the beginning of 2019 was approximately €3.8 billion. Capex in the Surface Technologies segment and Other in particular was below the planned values.

[For information on our expectations for 2020, see page 136 onward](#)

[For information on investments, see page 42](#)

Business Review by Segment¹

Segment overview

Million €

	Sales		Income from operations before depreciation and amortization (EBITDA)		Income from operations (EBIT) before special items	
	2019	2018	2019	2018	2019	2018
Chemicals	9,532	11,694	1,545	2,234	791	1,587
Materials	11,466	13,270	1,691	2,993	1,003	2,400
Industrial Solutions	8,389	9,120	1,327	1,076	820	668
Surface Technologies	13,142	11,199	1,120	953	722	617
Nutrition & Care	6,075	5,940	1,189	1,107	793	736
Agricultural Solutions	7,814	6,156	1,647	985	1,095	734
Other	2,898	2,841	(483)	(378)	(688)	(461)
BASF Group	59,316	60,220	8,036	8,970	4,536	6,281

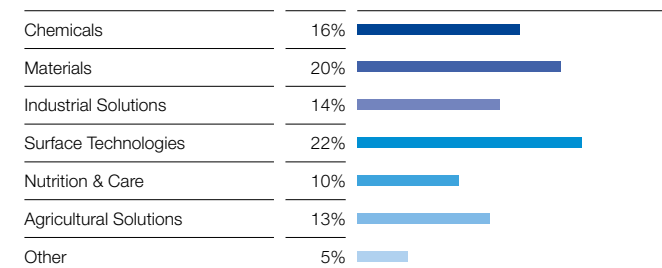
Segment overview

Million €

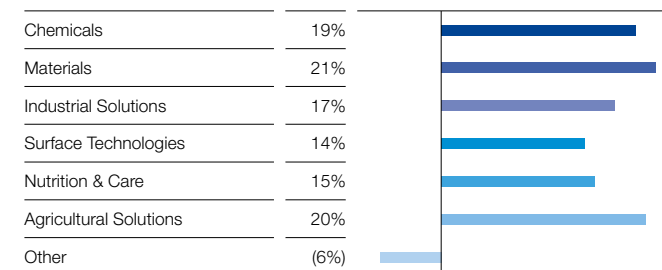
	Income from operations (EBIT)		Assets		Investments including acquisitions ^a	
	2019	2018	2019	2018	2019	2018
Chemicals	622	1,573	8,978	8,947	1,108	962
Materials	973	2,374	8,782	9,005	784	639
Industrial Solutions	889	653	6,903	7,464	426	436
Surface Technologies	663	574	11,773	11,062	565	531
Nutrition & Care	644	715	6,399	6,230	595	298
Agricultural Solutions	928	591	16,530	16,992	320	7,110
Other	(667)	(506)	27,585	26,856	299	759
BASF Group	4,052	5,974	86,950	86,556	4,097	10,735

^a Additions to property, plant and equipment (of which from acquisitions: €3 million in 2019 and €1,425 million in 2018) and intangible assets (of which from acquisitions: minus €37 million in 2019 and €5,540 million in 2018)

Contributions to total sales by segment



Contributions to EBITDA by segment



¹ The segment data for 2018 has been restated to reflect the new segment structure. Figures do not include the construction chemicals activities presented as discontinued operations.

Sales^a

Million €

	Q1		Q2		Q3		Q4	
	2019	2018	2019	2018	2019	2018	2019	2018
Chemicals	2,548	2,945	2,180	2,792	2,429	3,129	2,375	2,828
Materials	2,931	3,460	2,961	3,506	2,894	3,321	2,680	2,983
Industrial Solutions	2,186	2,240	2,141	2,348	2,130	2,325	1,932	2,207
Surface Technologies	3,022	2,641	3,161	2,844	3,325	2,629	3,634	3,085
Nutrition & Care	1,561	1,568	1,495	1,439	1,519	1,469	1,500	1,464
Agricultural Solutions	2,649	1,728	1,796	1,501	1,561	1,243	1,808	1,684
Other	699	574	744	689	698	844	757	734
BASF Group	15,596	15,156	14,478	15,119	14,556	14,960	14,686	14,985

^a Quarterly results not audited**Income from operations (EBIT) before special items^a**

Million €

	Q1		Q2		Q3		Q4	
	2019	2018	2019	2018	2019	2018	2019	2018
Chemicals	306	475	119	457	251	398	115	257
Materials	323	816	334	765	266	664	80	155
Industrial Solutions	264	230	243	213	205	164	108	61
Surface Technologies	151	159	129	143	206	115	236	200
Nutrition & Care	222	254	220	214	225	189	126	79
Agricultural Solutions	740	423	121	278	73	(5)	161	38
Other	(284)	(77)	(182)	(132)	(161)	(83)	(61)	(169)
BASF Group	1,722	2,280	984	1,938	1,065	1,442	765	621

^a Quarterly results not audited**Contributions to EBIT before special items by segment**

Chemicals	17%	
Materials	22%	
Industrial Solutions	18%	
Surface Technologies	16%	
Nutrition & Care	18%	
Agricultural Solutions	24%	
Other	(15%)	

Contributions to EBIT by segment

Chemicals	15%	
Materials	24%	
Industrial Solutions	22%	
Surface Technologies	16%	
Nutrition & Care	16%	
Agricultural Solutions	23%	
Other	(16%)	

Income from operations (EBIT)^a

Million €

	Q1		Q2		Q3		Q4	
	2019	2018	2019	2018	2019	2018	2019	2018
Chemicals	302	470	(37)	450	248	398	109	255
Materials	321	811	319	757	262	659	71	147
Industrial Solutions	407	248	228	207	207	156	47	42
Surface Technologies	144	155	125	137	192	108	202	174
Nutrition & Care	124	248	207	212	224	186	89	69
Agricultural Solutions	772	417	29	259	43	(39)	84	(46)
Other	(319)	(86)	(375)	(150)	169	(99)	(142)	(171)
BASF Group	1,751	2,263	496	1,872	1,345	1,369	460	470

^a Quarterly results not audited

Chemicals

The Chemicals segment consists of the Petrochemicals and Intermediates divisions. It supplies the other segments with basic chemicals and intermediates, contributing to the organic growth of our key value chains. Alongside internal transfers, our customers mainly come from the chemical and plastics industries. We aim to expand our competitiveness through technological leadership and operational excellence.

Divisions

Petrochemicals

Broad portfolio of high-quality basic chemicals and specialties tailored to the needs of internal and external customers from industries such as chemicals and plastics

Intermediates

Comprehensive portfolio of intermediates and specialties, which are used as precursors for products such as coatings, plastics, textile fibers, pharmaceuticals and crop protection products



Sales

Intermediates €2,862 million
Change: **-9%**
Percentage of sales: **30%**

2019:
€9,532 million
Change:
-18%

2018:
€11,694 million

Petrochemicals €6,670 million
Change: **-22%**
Percentage of sales: **70%**

Factors influencing sales

Volumes	(11%)	
Prices	(9%)	
Portfolio	0%	
Currencies	2%	
Sales	(18%)	

Income from operations before special items

Million €

2019	791	
2018	1,587	
		Change: -€796 million

Strategy

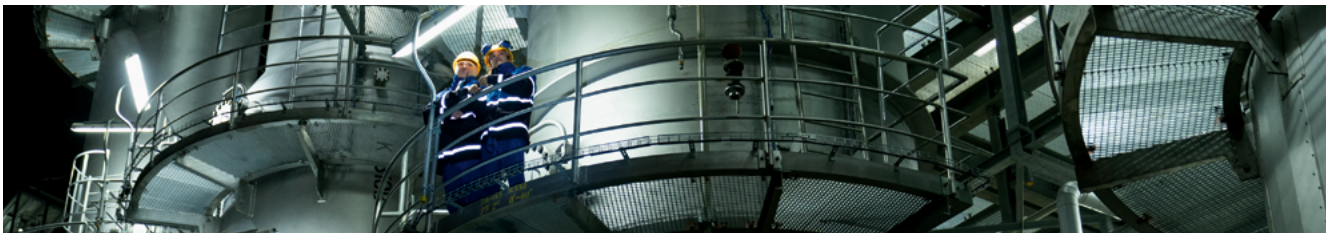
- Integrated production facilities form core of Verbund
- Technological leadership and operational excellence provide most important competitive edge

The Chemicals segment is at the heart of the Verbund. Its production facilities supply BASF's segments with basic chemicals and intermediates for the production of higher value-added products. In this way, the segment makes a significant contribution to BASF's organic growth. The Chemicals segment is also a reliable supplier and provides chemicals of consistently high quality and markets them to customers in downstream industries.

We create value through process and product innovation and invest in research and development to implement new, sustainable technologies and to make our existing technologies even more efficient. Technological leadership, operational excellence and a clear focus on individual value chains are among our most important competitive advantages. We concentrate on the critical success factors of the classic chemicals business: leveraging economies of scale and the advantages of our Verbund, high asset reliability, continuous optimization of access to raw materials, lean and energy efficient processes – including reducing greenhouse gas emissions – and reliable, cost-effective logistics. Furthermore, we are constantly improving our global production structures and aligning these with regional market requirements. We continuously improve our value chains and are expanding our market position – especially in Asia – with investments and collaborations in growth markets.

Alongside the planned construction of an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong, we are evaluating a joint investment in a chemical complex in Mundra, India, together with our partners the Abu Dhabi National Oil Company (ADNOC), Abu Dhabi, United Arab Emirates; the Adani group (Adani), Ahmedabad, India; and Borealis AG (Borealis), Vienna, Austria. The parties signed a memorandum of understanding to undertake a joint

How we create value – an example



New acetylene plant in Ludwigshafen, Germany

More energy-efficient production of an intermediate essential to many value chains

Value for BASF

Annual contribution margin along the value chain

up to **€1 billion**

In Ludwigshafen, Germany, BASF has started up a replacement acetylene plant with a capacity of 90,000 metric tons. The new plant offers extensive digital features such as augmented reality and a reliability center, which help improve process efficiency and ensure higher plant availability. This safeguards the site's supply of this important intermediate and further strengthens the long-term competitiveness of the Ludwigshafen site. Around 20 plants use acetylene as a versatile component of downstream products. These are essential to many value chains, including plastics, solvents and electronic chemicals. BASF customers use these products in the automotive, pharmaceutical, construction, consumer goods and textiles industries. The new plant supplies and safeguards value chains with a total annual contribution margin of up to €1 billion.

Value for the environment

Fossil resource use

around **-10%**

BASF has developed a proprietary, multi-stage chemical process to produce acetylene and a mixture of hydrogen and carbon monoxide, which is used as syngas, from natural gas and oxygen. Compared with the old plant, the new plant uses around 10% less fossil feedstock (such as natural gas) for this process per metric ton of end product. In addition, the new plant also generates less by-product (such as naphthalene and acetylene coke) per metric ton of end product. Energy is also saved since transportation logistics are no longer required for these by-products.

feasibility study in October 2019. BASF's main focus is the investment in the acrylics value chain. In line with BASF's stated goal of CO₂-neutral growth until 2030, the partners are evaluating a globally unique concept to fully power the site with renewable energy.

In October 2018, BASF and Sinopec signed a memorandum of understanding to expand the existing 50-50 joint venture, BASF-YPC Company Limited (BYC), at the Verbund site in Nanjing, China. The aim is to further strengthen the joint production of chemical products in China.

In 2020, we will expand production capacities for neopentyl glycol at the Nanjing site to continue to support our Chinese customers' growth.

At our Verbund site in Antwerp, Belgium, we are planning a significant capacity expansion of our ethylene oxide plant. The project also includes several downstream plants, for example for the production of surfactants.

In Ludwigshafen, Germany, we further strengthened our Verbund by replacing our acetylene plant with a modern, highly efficient plant. The multi-stage startup process was completed in 2019.

Products, customers and applications

Division	Products	Customer industries and applications
Petrochemicals	Ethylene, propylene, butadiene, benzene, alcohols, solvents, plasticizers, alkylene oxides, glycols, acrylic monomers, styrene and polystyrene, styrenic foams, superabsorbents	Use in the BASF Verbund Chemical and plastics industry, construction, detergent, hygiene, automotive, packaging and textile industries; production of paints, coatings, cosmetics, oilfield and paper chemicals
Intermediates	Basic products: butanediol and derivatives, alkylamines and alkanolamines, neopentyl glycol, formic and propionic acid Specialties: specialty amines such as tertiary butylamine and polyetheramine, gas treatment chemicals, vinyl monomers, acid chlorides, chloroformates, chiral intermediates	Use in the BASF Verbund Chemical, plastics, coatings, construction, automotive, textile, pharmaceutical and agricultural industries Production of detergents and cleaners as well as crop protection products and textile fibers

Material investments

Location	Project	Additional annual capacity through expansion (metric tons)	Total annual capacity (metric tons)	Startup
Antwerp, Belgium	Expansion: ethylene oxide plant	n/a	n/a	2022
	Feedstock flexibilization of steam cracker	–	1,080,000	2019
Ludwigshafen, Germany	Replacement: acetylene plant	15,000	90,000	2019
Nanjing, China	Construction: specialty amines plant	21,000	n/a	2019
	Expansion: propionic acid plant ^a	30,000	69,000	2019
	Expansion: neopentyl glycol plant ^a	40,000	80,000	2020
	Expansion: tertiary butylamine plant	30% increase	–	2022

^a Operated by a joint venture with Sinopec

Production capacities of significant products^a

Product	Sites				Annual capacity (metric tons)
	Europe	North America	Asia Pacific	South America, Africa, Middle East	
Acrylic acid	■	■	■	■	1,510,000
Alkylamines	■	■	■		250,000
Formic acid	■	■	■		305,000
Benzene	■	■	■		910,000
Butadiene	■	■	■		680,000
Butanediol equivalents	■	■	■		670,000
Ethanolamines and derivatives	■		■		430,000
Ethylene	■	■	■		3,480,000
Ethylene oxide	■	■	■		1,445,000
Neopentyl glycol	■	■	■		205,000
Oxo-C4 alcohols (calculated as butyraldehyde)	■	■	■		1,625,000
PolyTHF®	■	■	■		350,000
Propionic acid	■		■		180,000
Propylene	■	■	■		2,610,000
Styropor®/Neopor®	■		■		545,000
Superabsorbents	■	■	■	■	590,000
Plasticizers	■	■			595,000

^a All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Business review

- **Sales down 18% to €9,532 million due to lower volumes and prices**
- **EBIT before special items declines 50% to €791 million as a result of considerably lower contributions from both divisions**

Sales to third parties in the Chemicals segment declined by €2,162 million year on year to €9,532 million in 2019. This was mainly due to the considerable sales decrease in the Petrochemicals division of €1,891 million to €6,670 million. Sales also declined considerably in the Intermediates division by €271 million to €2,862 million.

Factors influencing sales – Chemicals

	Chemicals	Petrochemicals	Intermediates
Volumes	(11%)	(13%)	(5%)
Prices	(9%)	(10%)	(6%)
Portfolio	0%	0%	0%
Currencies	2%	1%	2%
Sales	(18%)	(22%)	(9%)

Sales development was attributable to lower volumes and prices in both divisions, but especially in the Petrochemicals division. Here, sales volumes declined significantly as a result of the scheduled turnarounds of our steam crackers in North America and Europe. In addition, lower capacity utilization of the condensate splitter in Port Arthur, Texas, had a negative impact on volumes development in North America. The slight decline in volumes in the Intermediates division was largely attributable to lower sales volumes for butanediol and derivatives, especially in the businesses serving the automotive and textile industries.

Segment data – Chemicals

Million €	2019	2018	+/-
Sales to third parties	9,532	11,694	(18%)
of which Petrochemicals	6,670	8,561	(22%)
Intermediates	2,862	3,133	(9%)
Intersegment transfers	3,428	3,611	(5%)
Sales including transfers	12,960	15,305	(15%)
Income from operations before depreciation, amortization and special items	1,574	2,245	(30%)
Income from operations before depreciation and amortization (EBITDA)	1,545	2,234	(31%)
EBITDA margin	16.2	19.1	–
Depreciation and amortization ^a	923	661	40%
Income from operations (EBIT)	622	1,573	(60%)
Special items	(169)	(14)	.
EBIT before special items	791	1,587	(50%)
Return on capital employed (ROCE)	6.8	17.7	–
Assets	8,978	8,947	0%
Investments including acquisitions ^b	1,108	962	15%
Research and development expenses	108	114	(5%)

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^b Additions to intangible assets and property, plant and equipment

Prices also decreased significantly overall, particularly in the Petrochemicals division. Prices declined in all regions and business areas here, largely following the decrease in raw materials prices for naphtha and butane, our most important feedstocks. Prices were also pushed down by new ethylene capacities in the United States as well as the trade conflict between the United States and China and the resulting market uncertainty. Price levels declined considerably in the Intermediates division, likewise in all regions and especially in the acids and polyalcohols business.

Positive currency effects in both divisions had a slight offsetting effect.

Petrochemicals – Sales by region

Location of customer

South America, Africa, Middle East **5%**

Asia Pacific **10%**

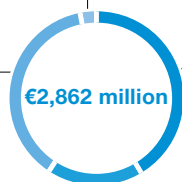
North America **26%**

59% Europe

€6,670 million

Intermediates – Sales by region

Location of customer

South America, Africa, Middle East **3%**Asia Pacific **38%****42%** EuropeNorth America **17%**

The construction of the new acetylene plant in Ludwigshafen, Germany, went according to plan and was started up on schedule in late 2019. In Nanjing, China, BASF built a plant for the production of several specialty amines. Our 50-50 joint venture there, BASF-YPC Company Limited, completed a capacity expansion for propionic acid.

[See page 137 for the outlook for 2020](#)

Income from operations (EBIT) before special items decreased by €796 million compared with the previous year to €791 million. The considerable decline in EBIT before special items affected both divisions, but especially Petrochemicals, and was the result of lower volumes and margins.

In particular, earnings from steam cracker products in the Petrochemicals division declined over the course of the year due to lower volumes, mainly owing to the scheduled turnarounds of our steam crackers in Europe and North America. Higher product availability on the market of ethylene, ethylene glycols and styrene monomers also contributed to the decrease in margins and earnings. In addition, fixed costs rose. In the previous year, we had received insurance refunds; in addition, maintenance expenses, especially for our steam crackers, were above the 2018 figure.

Margins in the Intermediates division declined slightly overall. In the acids and polyalcohols business, margins were significantly lower due to higher product availability on the market.

EBIT declined by €951 million to €622 million. EBIT includes a special charge from the impairment of project costs for a planned methane-to-propylene plant on the U.S. Gulf Coast.

Materials

The Materials segment is composed of the Performance Materials division and the Monomers division. The Materials segment's portfolio comprises advanced materials and their precursors for new applications and systems. These include isocyanates and polyamides as well as inorganic basic products and specialties for the plastics and plastics processing industries. We want to focus primarily on organic growth through differentiation via specific technological expertise, industry know-how and customer proximity to maximize value in the isocyanate and polyamide value chains.

Divisions

Performance Materials

Polyurethanes, thermoplastics and foam specialties for sectors such as the transportation, construction and consumer goods industries, as well as for industrial applications

Monomers

Isocyanates and polyamides as well as inorganic basic products and specialties for sectors such as the plastics, automotive and construction industries



Sales

Monomers €5,402 million
Change: **-20%**
Percentage of sales: **47%**

2019:
€11,466 million
Change:
-14%

2018:
€13,270 million

Performance Materials €6.064 million
Change: **-7%**
Percentage of sales: **53%**

Factors influencing sales

Volumes	(3%)	
Prices	(12%)	
Portfolio	0%	
Currencies	1%	
Sales	(14%)	

Income from operations before special items

Million €

2019	1,003	
2018	2,400	
Change: -€1,397 million		

Strategy

- **Industry-leading portfolio of high-performance materials and their precursors, leveraging two integrated value chains**
- **Differentiated products and solutions for the automotive, construction and consumer goods industries**

The Materials segment provides a toolbox of high-performance materials that is unique in the industry. Our major integrated isocyanate and polyamide value chains are complemented by a number of specialties for the plastics and plastics processing industries. The Materials segment offers specially developed polymers and solutions to major customer industries such as automotive, construction, electrical and electronics, and consumer goods.

We cater to the growing needs of consumers in all key markets by developing new applications, high-performance materials, systems and digital solutions. Application know-how, industry knowledge and customer proximity are key differentiators. BASF's competence in this field is extended by advanced material simulation capabilities, which are a unique selling proposition in the industry.

Additional differentiators, which continue to gain importance, are our product portfolio of bio-based material solutions and our sustainable production approaches. Such differentiated service and product offerings enable us to continuously expand the application horizon of our portfolio, thus generating innovative use cases and ultimately broadening markets. The segment's global production network allows us to operate close to our customers.

The new MDI synthesis unit in Geismar, Louisiana, is a major milestone toward increasing MDI production capacity in North America. This investment supports the growth of our MDI customers in the North American market.

How we create value – an example

ecovio®

Certified soil-biodegradable plastic for mulch films

Value for BASF

Annual volume of relevant market in Europe

> 100,000 metric tons

BASF has offered ecovio®, a biodegradable plastic for agricultural mulch films, since 2012. In 2019, ecovio® films became the first material to be certified as soil-biodegradable according to the European standard DIN EN 17033. Unlike the conventional polyethylene (PE) films used in many countries, ecovio® films do not have to be laboriously collected after the harvest. Instead, farmers can plough them into the soil. Naturally occurring micro-organisms in the soil recognize the structure of the film as food they can metabolize. This means that the film fully biodegrades in the soil and does not remain there as microplastic like thin PE film does. The European market for mulch films exceeds 100,000 metric tons per year, and the global market exceeds 2 million metric tons per year. If tighter legislation is implemented to protect soils from microplastics, this could provide additional sales opportunities for ecovio®.

Value for the environment

Reduction in greenhouse gas emissions

up to **60%**

An independently reviewed life cycle assessment of agriculture in China shows that soil-biodegradable ecovio® mulch films can reduce the carbon footprint of crop production by up to 60% compared with thin PE mulch films (thickness ≤25 micrometers). While PE microplastic residues block access of nutrients to the plant roots, ecovio® films do not accumulate in the soil. As a result, they do not inhibit the uptake of nutrients to the plant root and enable more efficient use of fertilizers and irrigation water. ecovio® films thus help to sustain soil health, even in the production of vegetables and other crops aimed at increasing yields.

In September 2017, BASF signed an agreement with Solvay on the acquisition of Solvay's integrated polyamide business. The E.U. Commission approved the acquisition on January 18, 2019 subject to certain conditions, including the sale of Solvay's polyamide 6.6 (PA6.6) production facilities in Europe. Domo Chemicals was approved by the E.U. Commission as the buyer. The transactions

between Solvay and Domo Chemicals and Solvay and BASF closed on January 31, 2020.

[For more information on the transaction with Solvay, see page 43](#)

In late November 2019, the official groundbreaking ceremony was held for the first plants at the planned integrated Verbund chemical production site in Zhanjiang in the southern Chinese province of Guangdong. The plants will produce engineering plastics and thermoplastic polyurethane (TPU) to serve the growing demand in various growth industries in the southern Chinese market and throughout Asia.

Products, customers and applications

Division	Products	Customer industries and applications
Performance Materials	Engineering plastics, biodegradable plastics, foam specialties, polyurethanes	Automotive manufacture, electrical engineering, packaging, games, sports and leisure, household, mechanical engineering, construction, agriculture, medical technology, sanitation and water industry, solar thermal energy and photovoltaics
Monomers	Isocyanates (MDI, TDI), ammonia, caprolactam, adipic acid, chlorine, urea, glues and impregnating resins, caustic soda, polyamides 6 and 6.6, standard alcoholates, sulfuric and nitric acid	Use in the BASF Verbund Industries such as plastics, woodworking, furniture, packaging, textile, construction and automotive

Production capacities of selected products^a

Product	Sites				Annual capacity (metric tons)
	Europe	North America	Asia Pacific	South America, Africa, Middle East	
Ammonia	■	■			1,765,000
Chlorine	■				385,000
Urea	■				545,000
Isocyanates	■	■	■		2,610,000
Polyamides 6 and 6.6	■	■	■		820,000
Polyamide precursors	■	■			910,000
Propylene oxide	■				675,000
Sulfuric acid	■				920,000

^a All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Material investments

Location	Project	Startup
Altamira, Mexico	Capacity expansion: engineering plastics	2019
Dahej, India	Capacity expansion: Cellasto®	2019
Geismar, Louisiana	Construction: MDI synthesis unit	2020
Zhanjiang, China	Construction: engineering plastics plant	2022

Business review

- Sales 14% below previous year at €11,466 million, mainly as a result of lower prices
- EBIT before special items of €1,003 million; 58% year-on-year decrease primarily due to lower isocyanate margins

Sales to third parties in the Materials segment declined by €1,804 million compared with the previous year to €11,466 million. This was mainly attributable to the Monomers division, where sales decreased considerably by €1,351 million year on year to €5,402 million. The Performance Materials division also recorded a considerable sales decrease of €453 million to €6,064 million.

Factors influencing sales – Materials

	Materials	Performance Materials	Monomers
Volumes	(3%)	(6%)	0%
Prices	(12%)	(3%)	(21%)
Portfolio	0%	0%	0%
Currencies	1%	2%	1%
Sales	(14%)	(7%)	(20%)

The sales decrease was primarily driven by significantly lower prices for isocyanates in the Monomers division due to higher market supply. Price levels for polyamides also declined. In the Performance Materials division, sales were slightly reduced by lower sales prices as a result of lower raw materials prices for methylene diphenyl diisocyanate (MDI).

Sales volumes also declined in the Performance Materials division. The sales decrease here was driven by significantly lower demand for our products from key industries, particularly the automotive industry. In the Monomers division, volumes were at the prior-year

Segment data – Materials

Million €	2019	2018	+/-
Sales to third parties	11,466	13,270	(14%)
of which Performance Materials	6,064	6,517	(7%)
Monomers	5,402	6,753	(20%)
Intersegment transfers	849	962	(12%)
Sales including transfers	12,315	14,232	(13%)
Income from operations before depreciation, amortization and special items	1,719	3,020	(43%)
Income from operations before depreciation and amortization (EBITDA)	1,691	2,993	(44%)
EBITDA margin	% 14.7	22.6	–
Depreciation and amortization ^a	718	619	16%
Income from operations (EBIT)	973	2,374	(59%)
Special items	(30)	(26)	(15%)
EBIT before special items	1,003	2,400	(58%)
Return on capital employed (ROCE)	% 10.7	26.1	–
Assets	8,782	9,005	(2%)
Investments including acquisitions ^b	784	639	23%
Research and development expenses	193	194	(1%)

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^b Additions to intangible assets and property, plant and equipment

level. Higher isocyanate volumes were offset by lower polyamide volumes due to weaker demand from key industries.

Currency effects had a slightly positive impact in both divisions.

In the Performance Materials division, sales to the **automotive industry** were considerably below the previous year due to lower volumes, primarily reflecting the significant drop in automotive manufacturers' production figures. Sales volumes were also negatively impacted by tighter environmental protection requirements in our growth markets in Asia and political uncertainty. Sales in the **consumer goods industry** were likewise down from the

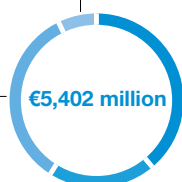
prior-year level. The main driver was weak demand caused by political uncertainty in Europe and Asia, which dampened developments in our thermoplastic polyurethanes business in particular. By contrast, our biodegradable plastics business developed positively on the back of stronger demand and the favorable regulatory environment. Sales to the **construction industry** were considerably lower compared with the previous year, mainly due to lower sales prices, especially in Europe and Asia. Sales volumes also declined, largely as a result of lower demand for polyurethane systems in Europe, Asia and North America.

Performance Materials – Sales by region

Location of customer

South America, Africa, Middle East **4%**Asia Pacific **31%****39%** EuropeNorth America **26%****Monomers – Sales by region**

Location of customer

South America, Africa, Middle East **7%**Asia Pacific **29%****43%** EuropeNorth America **21%**

In addition, fixed costs in the Monomers division were slightly higher than in the previous year. This was primarily attributable to the insurance refunds received in the third quarter of 2018.

EBIT declined by €1,401 million year on year to €973 million. Special charges arose in 2019, mainly from preparations for the integration of the Solvay businesses acquired on January 31, 2020, and in connection with the Excellence Program.

[See page 137 for the outlook for 2020](#)

At €1,003 million, **income from operations (EBIT) before special items** was €1,397 million below the prior-year level. Both divisions contributed to the considerable decline in EBIT before special items, but in particular Monomers. The decrease in the Monomers division was mainly due to lower isocyanate margins. Lower volumes and prices in the polyamide value chain also had a negative effect. Volumes also declined in the Performance Materials division.

Industrial Solutions

The Industrial Solutions segment consists of the Dispersions & Pigments and the Performance Chemicals divisions. The segment develops and markets ingredients and additives for industrial applications, such as fuel and lubricant solutions, polymer dispersions, pigments, resins, electronic materials, antioxidants, light stabilizers, oilfield chemicals, and mineral processing and hydrometallurgical chemicals. We aim to drive organic growth in key industries such as automotive, plastics, electronics, and energy and resources, and expand our position in value-enhancing additives and solutions by leveraging our comprehensive industry expertise and application know-how.

Divisions

Dispersions & Pigments

Raw materials used to formulate products in the coatings, construction, paper, printing and packaging, adhesives and electronics industries

Performance Chemicals

Customized products for various customer industries such as chemicals, plastics, consumer goods, energy and resources, as well as automotive and transportation



Sales

Performance Chemicals €3,211 million
Change: **-16%**
Percentage of sales: **38%**

2019:
€8,389 million

Change:
-8%

2018:
€9,120 million

Dispersions & Pigments €5,178 million
Change: **-2%**
Percentage of sales: **62%**

Factors influencing sales

Volumes	(1%)	
Prices	(1%)	
Portfolio	(8%)	
Currencies	2%	
Sales	(8%)	

Income from operations before special items

Million €

2019	820	
2018	668	
Change: €152 million		

Strategy

- **Tailor-made products and solutions improve our customers' applications and processes**
- **Global presence ensures reliable supply to customers in all regions**

We take on the challenges posed by important future issues, especially population growth: scarce resources, environmental and climatic stressors, greater demand for food and the desire for better quality of life. In doing so, we focus on research and development and maintain close relationships with leading companies in our customer industries. We position ourselves globally to reliably supply customers in all regions. We invest in the development of innovations that enable our products and processes – as well as our customers' applications and processes – to make a contribution to sustainability: for example, by allowing resources to be used more efficiently.

Our products create additional value for our customers and enable market differentiation. We develop new solutions together with our customers and strive for long-term partnerships that create profitable growth opportunities for both parties. Efficient production set-ups, backward integration in our Production Verbund's value chains, capacity management, and technology and cost leadership are essential here.

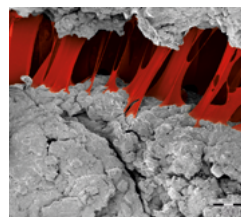
We support our customers by serving as a reliable supplier with consistently high product quality, good value offerings and lean processes. We draw on our in-depth application knowledge and technological innovations to strengthen customer relationships in key industries.

We are increasing global production capacity for the antioxidant Irganox® 1010 by 40% through production increase projects at our sites in Jurong, Singapore, and Kaisten, Switzerland. With the start of production in Kaisten in 2019 and Jurong in early 2021, BASF

How we create value – an example

Alcotac®

Use of organic binders reduces inorganic betonite binder usage in iron ore pelletization



Value for BASF

Expected annual sales growth

> 25%

Value for the environment

Reduction of sulfur dioxide emissions

up to 25%

The market for binders used in the agglomeration of mineral substrates, for example to create iron ore pellets, has a current total volume of around €600 million. Betonite-based binders currently make up more than 90% of the entire market. As part of its Alcotac® product line, BASF has now developed novel polymer binding agents that offer better dose efficiency and can be used as co-binders together with conventional betonite binders. BASF strengthens its market presence with the organic Alcotac® binders and aims to generate annual sales growth of more than 25% over the coming years.

Iron ore pellets are still usually made using conventional betonite binders. However, this produces undesirable contaminants such as silicon dioxide and sulfur. The use of only small quantities of Alcotac® products as co-binders can reduce betonite usage by up to 60%. The organic binder leaves virtually no residues in the firing process. This increases the quality and thus the value of the iron ore and can reduce sulfur dioxide emissions by up to 25%.

aims to better serve the growing demand from customers in Asia and Europe, the Middle East and Africa.

We launched our Glystantin® branded engine coolant products in the North American automotive market in January 2020. Capital investments at our production site in Cincinnati, Ohio, are underway, adding to our global footprint, which includes sites in Europe, Asia and South America.

In 2019, we doubled the production capacity for the adhesive raw material acResin® with the startup of a second production facility in Ludwigshafen, Germany.

To provide a reliable supply of high-quality dispersions solutions in the growing ASEAN, Australian and New Zealand markets, we plan to double the production capacity for acrylics dispersions in Pasir Gudang, Malaysia. The new line will be operational in 2020.

On January 31, 2019, BASF and Solenis completed the transfer of BASF's paper and water chemicals business to Solenis as

announced in May 2018. Since February 1, 2019, we have held a 49% share in Solenis, which is accounted for using the equity method.

[For more information on the transaction with Solenis, see page 43](#)

On August 29, 2019, BASF and DIC, Tokyo, Japan, reached an agreement on the acquisition of BASF's global pigments business. The assets and liabilities to be divested were reclassified to a disposal group in the Dispersions & Pigments division as of this date. The transaction is expected to close in the fourth quarter of 2020, subject to the approval of the relevant competition authorities.

[For more information on the transaction with DIC, see page 43](#)

Products, customers and applications

Division	Products	Customer industries and applications
Dispersions & Pigments	Polymer dispersions, resins, additives, pigments, electronic materials	Coatings, construction, paper, printing and packaging, adhesives and electronics industries
Performance Chemicals	<p>Antioxidants, light stabilizers and flame retardants for plastic applications</p> <p>Fuel and refinery additives, polyisobutene, brake fluids and engine coolants, lubricant additives and basestocks, components for metalworking fluids and compounded lubricants</p> <p>Process chemicals for the extraction of oil, gas, metals and minerals; chemicals for enhanced oil recovery</p> <p>Kaolin minerals</p>	Chemicals, plastics, consumer goods, automotive and transportation industries, as well as energy and resources

Production capacities of significant products^a

Product	Sites				Annual capacity (metric tons)
	Europe	North America	Asia Pacific	South America, Africa, Middle East	
Acrylics dispersions	■	■	■	■	1,740,000
Formulation additives	■	■	■		57,000
Polyisobutene	■		■		265,000

^a All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Material investments

Location	Project	Startup
Cincinnati, Ohio	Construction: production plant for engine coolants	2020
Jurong, Singapore	Capacity expansion: antioxidants (Irganox®)	2021
Kaisten, Switzerland	Capacity expansion: antioxidants (Irganox®)	2019
Ludwigshafen, Germany	Capacity expansion: production plant for UV acrylic hotmelts	2019
Pasir Gudang, Malaysia	Capacity expansion: production plant for acrylics dispersions	2020
Pontecchio, Italy	Capacity expansion: light stabilizers (Tinuvin® NOR® 356)	2020
Shanghai, China	Construction: production plant for plastic additives	2019

Business review

- **Sales 8% lower at €8,389 million, mainly due to the transfer of the paper and water chemicals business to the Solenis group**
- **EBIT before special items €152 million higher as a result of considerable earnings growth in both divisions**

At €8,389 million, **sales to third parties** in the Industrial Solutions segment were €731 million below the prior-year figure in 2019. This was primarily attributable to considerably lower sales in the Performance Chemicals division, where sales decreased by €617 million to €3,211 million. Sales in the Dispersions & Pigments division declined slightly by €114 million to €5,178 million.

Factors influencing sales – Industrial Solutions

	Industrial Solutions	Dispersions & Pigments	Performance Chemicals
Volumes	(1%)	(3%)	2%
Prices	(1%)	(1%)	(1%)
Portfolio	(8%)	0%	(19%)
Currencies	2%	2%	2%
Sales	(8%)	(2%)	(16%)

The sales decrease largely reflected the transfer of BASF's paper and water chemicals business, which was previously reported under the Performance Chemicals division, to the Solenis group as of January 31, 2019.

Volumes were also lower overall. Slightly higher sales volumes in the Performance Chemicals division, especially for fuel and lubricant solutions, were unable to offset the slightly lower volumes in the Dispersions & Pigments division.

Segment data – Industrial Solutions

Million €	2019	2018	+/-
Sales to third parties	8,389	9,120	(8%)
of which Dispersions & Pigments	5,178	5,292	(2%)
Performance Chemicals	3,211	3,828	(16%)
Intersegment transfers	524	525	(0%)
Sales including transfers	8,913	9,645	(8%)
Income from operations before depreciation, amortization and special items	1,249	1,090	15%
Income from operations before depreciation and amortization (EBITDA)	1,327	1,076	23%
EBITDA margin %	15.8	11.8	–
Depreciation and amortization ^a	438	423	4%
Income from operations (EBIT)	889	653	36%
Special items	69	(15)	.
EBIT before special items	820	668	23%
Return on capital employed (ROCE) %	12.5	8.7	–
Assets	6,903	7,464	(8%)
Investments including acquisitions ^b	426	436	(2%)
Research and development expenses	192	224	(14%)

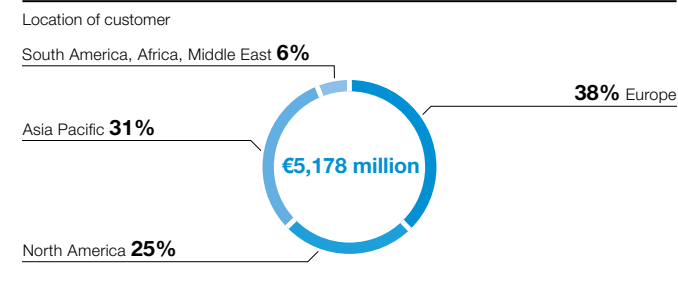
^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^b Additions to intangible assets and property, plant and equipment

The slight decline in prices in both divisions, mainly as a result of lower raw materials prices, also contributed to the sales decrease.

Positive currency effects in both divisions, especially relating to the U.S. dollar, had an offsetting impact.

Dispersions & Pigments – Sales by region



Performance Chemicals – Sales by region

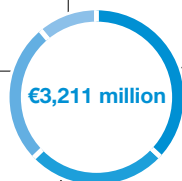
Location of customer

South America, Africa, Middle East **11%**

Asia Pacific **26%**

37% Europe

North America **26%**



Income from operations (EBIT) before special items rose by €152 million to €820 million. This was mainly the result of lower fixed costs, positive currency effects and higher margins. In both divisions, we considerably improved earnings compared with the previous year.

The earnings improvement in the Performance Chemicals division was attributable to lower fixed costs and positive currency effects.

The slight margin growth in the Dispersions & Pigments division was due to positive currency effects and lower raw materials prices. In addition, fixed costs were below the prior-year level thanks to cost optimization measures.

Compared with 2018, **EBIT** rose by €236 million to €889 million. EBIT included special income of €185 million in the Performance Chemicals division from the transfer of BASF's paper and water chemicals business to the Solenis group.

[See page 137 for the outlook for 2020](#)

Surface Technologies

The Surface Technologies segment comprises the Catalysts and Coatings divisions. The segment bundles the chemical surface solution businesses. Its portfolio includes coatings, surface treatments, catalysts and battery materials for the automotive and chemical industries. The aim is to drive organic growth by leveraging our portfolio of technologies and establishing BASF as a leading and innovative solution provider in fields such as battery materials.

Divisions

Catalysts

Automotive and process catalysts, battery materials, precious metal trading, recycling

Coatings

Coatings solutions, surface treatments, decorative paints



Sales

Coatings €3,746 million
Change: **0%**
Percentage of sales: **29%**

2019:
€13,142 million
Change:
17%

Catalysts €9,396 million
Change: **26%**
Percentage of sales: **71%**

2018:
€11,199 million

Factors influencing sales

Volumes	1%	
Prices	13%	
Portfolio	0%	
Currencies	3%	
Sales	17%	

Income from operations before special items

Million €

2019	722	
2018	617	

Change: **€105 million**

Strategy

- Development of chemical solutions for surfaces in close collaboration with our customers
- Targeting organic growth and a leading market position in battery materials

In the Surface Technologies segment, our focus is on the protection, modification and development of surfaces. We develop innovative products and technologies in close collaboration with our customers from the catalysts, coatings, battery materials and surface treatments sectors. Our aim is to drive organic growth by leveraging our portfolio of technologies to find the best solution for our customers in terms of functionality and cost. This helps our customers to drive forward innovation in their industries and contribute to sustainable development.

Key growth drivers for us are the positive medium-term development of the automotive market, especially in Asia, the trend toward sustainable, low-emission mobility in the automotive industry, and the associated rise in demand for battery materials for electromobility. Together with our customers, we are developing customized, sustainable solutions in these growth areas for battery materials, emission control, lightweight engineering concepts and coatings. Our specialties and system solutions enable customers to stand out from their competition.

We aim to establish BASF as a leading and innovative provider of battery materials and benefit from the strong growth in this specific market segment. A global production network for battery materials is crucial here. In 2018, we started construction of a plant in Harjavalta, Finland, to produce battery material precursors for the European automotive market. The production plant is being built next to the nickel and cobalt refinery owned by Norilsk Nickel (Nornickel). BASF and Nornickel have signed a long-term, market-based supply agreement for nickel and cobalt from Nornickel's metal refinery. With the investment, BASF will be present in all major

How we create value – an example

Oxsilan®

Eco-friendly thin-film technology for metal pretreatment

Value for BASF

Number of cars in which Oxsilan® was used in 2019

around **2 million**

Metal pretreatment provides long-term corrosion protection and ensures optimal paint adhesion in manufacturing processes in the automotive, appliance and packaging industries. In our Oxsilan® process, the same degree of corrosion protection is achieved with a thin layer of polysiloxanes as with the zinc-phosphating layers in traditional phosphating processes, which are around 10 times thicker. Oxsilan®, which we added to our portfolio with the acquisition of the Chemetall business, was used in around two million cars in 2019. We have recently gained additional approvals from automotive manufacturers, especially in Asia. We are continuously developing the technology to further improve the anti-corrosion performance and are currently undergoing approval processes at original equipment manufacturers for our latest Oxsilan® technology.

Value for our customers

Process costs reduced by

up to **20%**

The Oxsilan® technology not only reduces materials consumption in metal pretreatment due to thinner layers. Oxsilan® additionally offers process cost savings of up to 20% in existing plants resulting from shorter pre-treatment times and higher productivity compared with traditional phosphating processes. It also enables water savings of up to 50% and energy cost savings of up to 40%.

regions with local battery materials production and increased customer proximity. Another focus area is the continuous optimization of our product and services portfolio and our structures according to different regional market requirements as well as trends in our customer industries.

On December 21, 2019, BASF and an affiliate of Lone Star, a global private equity firm, signed an agreement on the sale of BASF's

construction chemicals business. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant competition authorities. The Construction Chemicals division was previously reported under the Surface Technologies segment.

[For more information on the agreement with Lone Star, see page 43](#)

Products, customers and applications

Division	Products	Customer industries and applications
Catalysts	Automotive catalysts, process catalysts and technologies Battery materials Precious and base metal services	Automotive and chemical industries, refineries, battery manufacturers, solutions for the protection of air quality as well as the production of fuels, chemicals, plastics and battery materials
Coatings	Coatings solutions for automotive applications, technology and system solutions for surface treatments, decorative paints	Automotive industry, body shops, steel industry, aviation, aluminum applications in the architecture and construction industries, household appliances, painting businesses and private consumers

Material investments

Location	Project	Startup
Caojing, China	Capacity expansion: resin plant	2020
Greenville, Ohio	Capacity expansion: resin plant	2020
Jiangmen, China	Capacity expansion: automotive refinish coatings plant	2022
Langelsheim, Germany	Capacity expansion: for Naftoseal® aircraft sealants	2019
Ludwigshafen, Germany	Construction: specialty zeolites plant for mobile emissions catalysts	2019
Münster, Germany	Construction: plant for functional films	2020
	Construction: laboratory building for automotive coatings	2021
	Replacement: small can filling and packaging system	2020
	Construction: cathodic dip coating line	2021
Pinghu, China	New surface treatment site	2021
Shanghai, China	Construction: plant for mobile emissions catalysts	2019/2020
Środa Śląska, Poland	Capacity expansion: plant for mobile emissions catalysts	2020
Tultitlán, Mexico	Capacity expansion: automotive coatings plant	2019

Business review

- **Sales growth of 17% to €13,142 million, primarily as a result of significantly higher precious metal prices in the Catalysts division**
- **EBIT before special items 17% higher at €722 million due to increases in both divisions**

Sales to third parties in the Surface Technologies segment rose by €1,943 million to €13,142 million. This was due to considerably higher sales in the Catalysts division, which was up €1,927 million from the previous year at €9,396 million. At €3,746 million, sales in the Coatings division were at prior-year level.

Factors influencing sales – Surface Technologies

	Surface Technologies	Catalysts	Coatings
Volumes	1%	4%	(3%)
Prices	13%	18%	2%
Portfolio	0%	0%	0%
Currencies	3%	4%	1%
Sales	17%	26%	0%

Sales growth was largely driven by the significant increase in precious metal prices in the Catalysts division. We also achieved slightly higher prices overall in the Coatings division. Prices rose in the automotive refinish coatings and decorative paints businesses in particular.

Positive currency effects, mainly relating to the U.S. dollar, increased sales slightly in both divisions.

Segment data – Surface Technologies

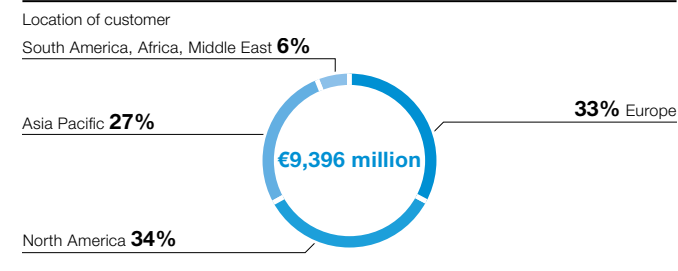
Million €	2019	2018	+/-
Sales to third parties	13,142	11,199	17%
of which Catalysts	9,396	7,469	26%
Coatings	3,746	3,730	0%
Intersegment transfers	212	192	10%
Sales including transfers	13,354	11,391	17%
Income from operations before depreciation, amortization and special items	1,173	995	18%
Income from operations before depreciation and amortization (EBITDA)	1,120	953	18%
EBITDA margin %	8.5	8.5	–
Depreciation and amortization ^a	457	379	21%
Income from operations (EBIT)	663	574	16%
Special items	(59)	(43)	(37%)
EBIT before special items	722	617	17%
Return on capital employed (ROCE) %	5.7	5.3	–
Assets	11,773	11,062	6%
Investments including acquisitions ^b	565	531	6%
Research and development expenses	214	217	(1%)

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^b Additions to intangible assets and property, plant and equipment

Volumes also increased slightly overall. This was attributable to higher volumes in the Catalysts division for mobile emissions catalysts, in precious metal trading, and for battery materials and refining catalysts. By contrast, sales volumes declined for chemical catalysts. In precious metal trading, sales rose to €4,585 million, mainly due to higher prices (2018: €3,190 million). Volumes development in the Coatings division was dampened slightly by weaker demand from the automotive industry.

Catalysts – Sales by region



Coatings – Sales by region

Location of customer

South America, Africa, Middle East **14%**

Asia Pacific **26%**

North America **24%**

36% Europe



In the Coatings division, we significantly increased sales of decorative paints in South America, mainly as a result of higher volumes and prices. We recorded slightly lower sales in the automotive OEM coatings business. Lower volumes on the back of a slowdown in the automotive market could only be partly offset by positive currency effects and higher sales prices. By contrast, we slightly increased sales of automotive refinish coatings: Higher sales prices in all regions more than offset lower sales volumes in North America in particular. Sales remained at the prior-year level in the surface treatments business. Higher prices in all regions and positive currency effects, especially in North America, were offset by lower volumes, particularly in Asia Pacific and Europe.

We considerably increased **income from operations (EBIT) before special items** by €105 million to €722 million. This was mainly attributable to considerable growth in the Coatings division, largely driven by lower fixed costs and higher margins as a result of higher prices and the positive development of raw materials costs. We slightly increased EBIT before special items in the Catalysts division, primarily from volumes growth. Higher fixed costs, mainly due to the startup of new plants, had an offsetting effect.

We improved **EBIT** by €89 million year on year to €663 million. This includes special charges from efficiency programs.

[See page 137 for the outlook for 2020](#)

Nutrition & Care

In the Nutrition & Care segment – consisting of the Care Chemicals and Nutrition & Health divisions – we serve the growing and increasingly sophisticated demands for fast-moving consumer goods. Our customers include food and feed producers as well as the pharmaceutical, cosmetics, detergent and cleaner industries. We strive to expand our position as a leading provider of ingredients and solutions for consumer applications in the areas of nutrition, home and personal care. Our goal is to drive organic growth by focusing on emerging markets, new business models and sustainability trends in consumer markets, supported by targeted acquisitions.

Divisions

Care Chemicals

Ingredients for the cosmetics, detergent and cleaner industries, agrochemical and technical applications

Nutrition & Health

Products for the food and feed industries, the flavor and fragrance industry, the pharmaceutical industry and the ethanol industry



Sales

Nutrition & Health €1,957 million
Change: **15%**
Percentage of sales: **32%**

2019:
€6,075 million
Change:
2%

2018:
€5,940 million

Care Chemicals €4,118 million
Change: **-3%**
Percentage of sales: **68%**

Factors influencing sales

Volumes	2%		
Prices	(2%)		
Portfolio	0%		
Currencies	2%		
Sales	2%		

Income from operations before special items

Million €

2019	793	
2018	736	

Change: **€57 million**

Strategy

- Organic growth driven by sustainable solutions for emerging markets, new business models and targeted acquisitions
- Efficient production structures through strong integration of standard products into the Verbund

In the Nutrition & Care segment, we strive to expand our position as a leading provider of nutrition and care ingredients for consumer applications. We aim to enhance our technology capabilities in fields such as biotechnology and broaden our product portfolio with bio-based and biodegradable innovations. We focus on emerging markets, new business models and sustainability trends in consumer markets – supported by targeted acquisitions. A strong integration of various standard products such as surfactants and vitamins into the Verbund enables efficient production structures and cost leadership.

Consumer demands and the markets for our products are constantly changing. In the future, growth in these markets will be driven by natural and organic ingredients, traceability of ingredients, sustainable solutions and a growing consumer base. In addition, the trend toward individualization and local production supports new players and business models. To better meet these dynamic consumer demands, we aim to enhance and broaden our technology and product portfolio.

Innovation will be the key driver here, which is why we offer our customers tailor-made solutions and new functionalities via product and process innovation. Research platforms focusing on bio-based and biodegradable products have been established to complement our existing portfolio. We are working on innovative approaches beyond the existing purely chemical solutions with research and development in white biotech and fermentation technologies. Our enzymes unit, founded in 2018, centrally steers the research, technology and production of the enzyme businesses at BASF. In addition,

How we create value – an example

Sokalan® HP 20

Effective washing at low temperatures



Value for BASF

Average annual sales growth expected in Europe until 2022

around **6%**

Sokalan® HP 20 is a high-performance ingredient for liquid detergent. It supports the trend toward machine washing at low temperatures with concentrated single-dose detergent pods. The BASF solution enables a significant reduction in anionic surfactant use. We expect Sokalan® HP 20 to generate average annual sales growth of around 6% in Europe until 2022 – twice as high as the market growth forecast for detergents in the European home care industry.

Value for the environment and society

Energy savings by reducing washing temperatures from 40°C to 20°C

>50%

Sokalan® HP 20 delivers outstanding washing performance even at low temperatures, especially in combination with the protein-splitting enzyme Laverge® Pro 104. By reducing washing temperatures from 40°C to 20°C, consumers can achieve energy savings of over 50%, lower their electricity costs and improve their carbon footprint.

tion, this business unit markets enzymes directly. This allows us to focus and accelerate existing enzyme business in various industries.

In September 2019, BASF entered the market for natural flavors and fragrance ingredients with the acquisition of Isobionics, an innovation leader in biotechnology serving the global market for natural flavors and fragrances, and through a cooperation agreement with Conagen, Bedford, Massachusetts, a leader in biotechnology research.

For standard products such as vitamins or surfactants, we focus on backward integration in our Production Verbund's value chains and cost leadership.

We are expanding our existing ibuprofen production capacities in Bishop, Texas. Our expanded vitamin A production facilities in Ludwigshafen, Germany, are scheduled to begin operation in early 2021. BASF will also expand its integrated complex for ethylene oxide and derivatives such as surfactants at the Verbund site in Antwerp, Belgium.

By the end of 2021, BASF will increase its capacities for methane sulfonic acid by around 65% to better meet growing cross-industry demand and strengthen its position as a leading global producer. This involves an investment to construct a new methane sulfonic acid plant at the Ludwigshafen site in Germany. Methane sulfonic acid is a strong organic acid used in numerous applications ranging from chemical and biofuel synthesis to industrial cleaning and metal surface treatment in the electronics industry.

After expanding capacities in North America in 2018, BASF also expanded production capacities for alkyl polyglycosides (APGs) in China in 2019. APGs, which are used as surfactants in formulations for industries such as cosmetics, detergents and cleaners, are made completely from renewable raw materials and are biodegradable.

Products, customers and applications

Division	Products	Customer industries and applications
Care Chemicals	<p>Ingredients for skin and hair cleansing and care products, such as emollients, cosmetic active ingredients, polymers and UV filters</p> <p>Ingredients for detergents and cleaners in household, institution or industry, such as surfactants, enzymes, chelating agents, water-soluble polymers, biocides and products for optical effects</p> <p>Chemical ingredients and processing additives, for example for crop protection, excipients for chemical processes such as emulsion polymerization, metal surface treatments or textile processing, as well as products for concrete additives, biofuels and other industrial applications</p>	Cosmetics industry, detergent and cleaner industry, agrochemical industry, technical applications for various industries
Nutrition & Health	<p>Additives for the food and feed industries, such as vitamins, carotenoids, sterols, enzymes, emulsifiers, omega-3 fatty acids, human milk oligosaccharides</p> <p>Industrial enzymes for ethanol production</p> <p>Natural and synthetic flavors and fragrances, such as citral, geraniol, citronellol, L-menthol and linalool, vanillin, valencene and nootkatone</p> <p>Excipients for the pharmaceutical industry and selected, high-volume active pharmaceutical ingredients, such as ibuprofen and omega-3 fatty acids</p>	Food and feed industries, flavor and fragrance industry, pharmaceutical industry and ethanol industry

Production capacities of significant products^a

Product	Sites				Annual capacity (metric tons)
	Europe	North America	Asia Pacific	South America, Africa, Middle East	
Anionic surfactants	■	■	■	■	600,000
Citral	■		■		78,000
Chelating agents	■	■		■	170,000
Methane sulfonic acid	■				30,000
Nonionic surfactants	■	■	■		635,000

^a All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Material investments

Location	Project	Startup
Antwerp, Belgium	Gradual capacity expansion: alkoxyates	2018–2021
Bishop, Texas	Capacity expansion: production plant for ibuprofen	2020
Düsseldorf, Germany	Gradual upgrade of production plants in accordance with the Good Manufacturing Practice Standard issued by the European Federation for Cosmetic Ingredients (EFFCI)	2022
Jinshan, China	Capacity expansion: production plant for alkyl polyglycosides	2019
Ludwigshafen, Germany	Capacity expansion: production plant for methane sulfonic acid	2021
	Construction: production plant for vitamin A	2021

Business review

- Sales growth of 2% to €6,075 million largely driven by higher volumes in the Nutrition & Health division
- Slight increase in EBIT before special items by €57 million to €793 million due to significant improvement in the Care Chemicals division

Sales to third parties in the Nutrition & Care segment amounted to €6,075 million in 2019, €135 million above the prior-year figure. This was the result of considerable sales growth of €261 million to €1,957 million in the Nutrition & Health division. By contrast, sales were slightly lower in the Care Chemicals division, declining by €126 million compared with 2018 to €4,118 million.

Factors influencing sales – Nutrition & Care

	Nutrition & Care	Care Chemicals	Nutrition & Health
Volumes	2%	(3%)	16%
Prices	(2%)	(2%)	(3%)
Portfolio	0%	0%	0%
Currencies	2%	2%	2%
Sales	2%	(3%)	15%

The sales increase was mainly attributable to significantly higher volumes in the Nutrition & Health division, especially of citral-based products from our plants in Ludwigshafen, Germany, and Kuantan, Malaysia. This more than offset lower volumes in the Care Chemicals division.

Segment data – Nutrition & Care

Million €	2019	2018	+/-
Sales to third parties	6,075	5,940	2%
of which Care Chemicals	4,118	4,244	(3%)
Nutrition & Health	1,957	1,696	15%
Intersegment transfers	490	470	4%
Sales including transfers	6,565	6,410	2%
Income from operations before depreciation and amortization and special items	1,214	1,128	8%
Income from operations before depreciation and amortization (EBITDA)	1,189	1,107	7%
EBITDA margin	% 19.6	18.6	–
Depreciation and amortization ^a	545	392	39%
Income from operations (EBIT)	644	715	(10%)
Special items	(149)	(21)	.
EBIT before special items	793	736	8%
Return on capital employed (ROCE)	% 10.0	11.8	–
Assets	6,399	6,230	3%
Investments including acquisitions ^b	595	298	100%
Research and development expenses	161	152	6%

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^b Additions to intangible assets and property, plant and equipment

Consistently positive currency effects in both divisions also lifted sales slightly.

By contrast, sales were weighed down by slightly lower prices in both divisions. In the Care Chemicals division, price levels declined in the oleo surfactants and alcohols business in particular. In the Nutrition & Health division, the animal nutrition business saw the biggest decline in prices.

Care Chemicals – Sales by region

Location of customer

South America, Africa, Middle East **9%**

Asia Pacific **20%**

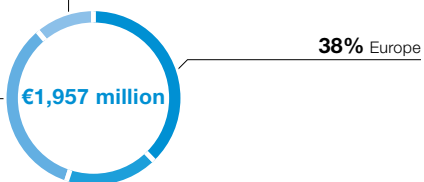
North America **19%**

52% Europe

€4,118 million

Nutrition & Health – Sales by region

Location of customer

South America, Africa, Middle East **11%**Asia Pacific **34%**North America **17%**

We produce citral, citronellol and menthol at our new aroma ingredients complex in Kuantan, Malaysia. We entered the market for natural flavors and fragrance ingredients with the acquisition of Isobionics, an innovation leader in biotechnology, and through a cooperation agreement with Conagen, a leader in biotechnology research.

[See page 137 for the outlook for 2020](#)

We improved our **income from operations (EBIT) before special items** slightly by €57 million year on year to €793 million thanks to a significantly higher contribution from the Care Chemicals division. The increase in EBIT before special items in the Care Chemicals division was largely driven by higher margins, especially in the oleo surfactants and alcohols business and in the home care, industrial and institutional cleaning and industrial formulators business, and one-off contractual income in the personal care solutions business.

EBIT before special items in the Nutrition & Health division decreased considerably compared with 2018. This was mainly attributable to higher fixed costs. In 2018, fixed costs were partly offset by insurance refunds for production outages. Higher margins due to improved product availability in 2019 had an offsetting effect.

EBIT declined by €71 million year on year to €644 million. This included impairments in connection with the optimization of production sites within the Nutrition & Health division.

Agricultural Solutions

In the Agricultural Solutions segment, we aim to further strengthen our market position as an integrated provider of crop protection products, seeds and digital solutions. The portfolio comprises fungicides, herbicides, insecticides and biological crop protection products, as well as seeds and seed treatment products. Our strategy is based on innovation-driven organic growth, targeted portfolio expansion and leveraging synergies from acquisitions. Customer needs, societal expectations and regulatory requirements are our innovation drivers for the segment.

Indications and sectors

Fungicides

Protecting crops against harmful fungal diseases

Herbicides

Reducing competition from weeds for nutrients, water and sunlight

Insecticides

Combating insect pests in agriculture and beyond

Seed Treatment¹

Biological and chemical crop protection, functional coatings and colorants

Seeds & Traits

Optimization and development of seeds and new traits



Sales

Seeds & Traits €1,454 million

Change: **385%**

Percentage of sales: **19%**

Seed Treatment €639 million

Change: **38%**

Percentage of sales: **8%**

Insecticides €800 million

Change: **19%**

Percentage of sales: **10%**

2019:
€7,814 million

Change:
27%

2018:
€6,156 million

Fungicides €2,305 million

Change: **1%**

Percentage of sales: **30%**

Herbicides €2,616 million

Change: **7%**

Percentage of sales: **33%**

Factors influencing sales

Volumes	(1%)	
Prices	3%	
Portfolio	24%	
Currencies	1%	
Sales	27%	

Income from operations before special items

Million €		
2019	1,095	
2018	734	
Change: €361 million		

¹ Functional Crop Care has been renamed Seed Treatment.

Strategy

- **Innovation-driven strategy for profitable future growth in selected markets**
- **Stronger customer orientation with a focus on strategic, regional crop systems**
- **A stronger portfolio with more sustainable solutions**

The world's population is expected to increase by 25%¹ from 2020 to 2050. Its growing demand for food must be reconciled with limited natural resources such as arable land and water. As a result, farmers around the world face the challenge of increasing agricultural productivity in a sustainable way by about 50%² by 2050 compared with baseline 2012 to meet the needs of a growing population.

In mid-2019, we completed the integration of a range of businesses and assets acquired from Bayer. With this, we achieved our goal of ensuring business continuity from day one and created a solid foundation for growth. This acquisition has transformed our position in the agricultural industry: We now connect seeds and traits, crop protection and digital solutions. This enables us to optimize farm yields and profitability, and better address environmental and societal demands.

With our innovation-based strategy in agriculture, we put the farmer's business at the center of everything we do. As one of the world's leading agricultural solutions companies, we focus our activities on four major strategic customer segments and selected crop combinations, known as crop systems: soy, corn (maize) and cotton in the Americas; wheat, canola (oilseed rape) and sunflowers in North America and Europe; rice in Asia; and fruit and vegetables globally. With a deep understanding of the way individual growers manage their farms and crop systems, we can better serve them with a connected offer based on our expanded portfolio and practical, down-to-earth advice.

How we create value – an example

e3® Sustainability Cotton Program

Complete field-to-retail traceability of cotton in the fashion industry



Value for BASF

Expected share of the U.S. cotton seed market by 2025

35%

Value for customers

Higher market price for participating growers of

up to **\$159/acre**

e3® is BASF's program for sustainable cotton in the United States. e3® helps to better manage the production of sustainable cotton and to promote demand throughout the entire textiles supply chain. Verification and certification through independent audits increase the recognition of sustainably produced cotton and enable further reductions in the environmental footprint. Demand for our FiberMax® and Stoneville® cotton seed brands, which are part of the program, is high. We expect a steady increase in U.S. market share for cotton seed through 2025, from 11% to 35%.

The e3® Sustainability Cotton Program helps farmers meet downstream customer demand for more traceable and sustainable supply chains in the fashion industry. They commit to growing cotton more efficiently and to reducing the impact on the environment. e3® cotton can be traced from the farmer to the retailer and shows end consumers that their clothes have been produced in a fair, economically viable and environmentally responsible way. BASF is the only company providing this level of traceability. This has increased demand for fiber meeting e3® standards, creating a higher market price for the grower of up to \$159/acre.

The success of our customers depends on many factors such as weather, plant health, soil conditions and prices for agricultural produce. Farmers today have to analyze more and more data of increasing complexity to make the right agronomic decisions. BASF's innovative digital products, marketed under the xarvio® Digital Farming Solutions brand, help our customers to use this data to their advantage, supporting better decision-making and ensuring more efficient and sustainable resource allocation.

We actively steer our offer for farmers and the agricultural industry toward sustainable solutions by integrating sustainability into all

business and portfolio decisions. Sustainability criteria are firmly embedded in our entire research and development process. We invest continually in our well-stocked innovation pipeline to identify and further develop compounds that benefit both farmers and the environment. We align our research approach and investments with our strategic crop systems to support the success of our customers with innovations.

¹ Source: UN World Population Prospects 2019

² Source: Food and Agriculture Organization of the United Nations (fao.org/3/a-i6583e.pdf)

Investments

Major projects included the expansion and modernization of production and filling capacities for our fungicide Revyso[®] in Europe and the United States. We expanded breeding capacities for our vegetable seeds business at the Nunhem site in the Netherlands. We also invested in the modernization of site infrastructure and in the digitalization of process control systems in the Americas and Europe. To meet the continuing high demand for our innovative solutions in the future, we will invest around €1,230 million in developing and expanding our infrastructure and in our production and formulation capacities for active ingredients between 2020 and 2024.

Research and development

In 2019, we invested €879 million in research and development in the Agricultural Solutions division, representing around 11% of sales for the segment. Our well-stocked innovation pipeline now has an even stronger focus on sustainable solutions. It comprises products to be launched between 2019 and 2029. With a peak sales potential¹ of more than €7.5 billion, our pipeline includes innovations from all business areas. More than 30 pipeline products will be launched worldwide by 2029. These will enable higher yields and quality and even more sustainable production. The expanded research and development activities in the Agricultural Solutions division range from seeds, including traits, research and breeding capacities, to solutions that protect plants against fungal diseases, insect pests and weeds, and improve soil management and plant health.

Our biotechnology activities and our research and development capabilities comprise advanced breeding techniques, analytics, technology platforms, trait validation and specific research expertise. These are closely aligned with further activities in the field of biotechnology, which are part of BASF's Bioscience Research unit. Research and development expenses, sales, earnings and all other

data for BASF's Bioscience Research unit are not reported in the Agricultural Solutions segment; they continue to be reported under Other.

Our seeds and traits research and development activities in field crops and vegetables enable us to leverage even greater innovation potential, and position us to seize future market opportunities and increase our competitiveness.

At BASF, we believe in finding the right balance for success. We believe that with our connected offer, we can achieve this for the environment, society and agriculture alike.

We have a strong, global network of research sites, an outstanding research pipeline and a wide range of products and solutions. These help farmers meet the demand for increased agricultural productivity and better nutrition for a growing population on limited arable land. Our aim is to improve crops and their cultivation, and to develop products and digital solutions for safe, field-specific application. From a sustainability perspective, this enables us to help farmers use resources efficiently, optimize crop cultivation and protection, and achieve greater and more secure yields in an increasingly challenging environment. Reconciling the production of nutritious food with environmental and climate demands requires a holistic approach. In the future, agriculture must be able to respect and balance the needs of nature and society, and take an open view in evaluating all the available technologies. The work of our research platform on gene identification focuses on the discovery and development of plant characteristics that enable higher yields and better quality, disease resistance, and tolerance of negative environmental factors such as drought. We apply all recognized scientific methods, including genetic engineering and selective genome editing.

Our innovative products and services help farmers to use natural resources more efficiently and promote biodiversity. We are involved

with numerous scientific and public organizations and initiatives. Together, we are working on solutions for sustainable agriculture that meet long-term economic, ecological and social needs. For instance, in 2013 we established the Farm Network in Europe together with external conservation and environmental experts to increase biodiversity across intensively farmed land. In Germany, for example, there are currently 53 farms in the network. These show on 63,000 hectares of land how modern agriculture and biodiversity can go hand in hand.

¹ Peak sales describes the highest sales value to be expected in one year. For more information, see the Glossary on page 299.

Products, customers and applications

Indications and sectors	Applications	Selected products
Fungicides	Protecting crops against harmful fungal diseases; improving plant health and securing yield and harvest quality	Boscalid, dimethomorph, F500®, Initium®, metiram, metrafenone, Revysol®, Serifel®, Xemium®
Herbicides	Reducing competition from weeds for nutrients, water and sunlight to secure yield and harvest quality	Basta®, Clearfield®, dimethenamid-p, Engenia®, Finale®, imazamox, Kixor®, Liberty®, pendimethalin, topramezone
Insecticides	Combating insect pests in agriculture and beyond, such as in the fields of public health, professional pest control and landscape maintenance	Alpha-cypermethrin, chlorfenapyr, fipronil, Inscalis®, Interceptor®, Nealta®, teflubenzuron, Termidor®
Seed Treatment	Biological and chemical crop protection, functional coatings and colorants	Flo Rite®, ILeVO®, Integral®, Nodulator® PRO, PONCHO®, Serifel®, Systiva®, Vault® HP, Velondis®, VOTIVO®
Seeds & Traits	Seeds and traits for key field crops such as canola (oilseed rape), cotton, soybean and wheat, as well as vegetable seeds	Credenz®, FiberMax®, InVigor®, LibertyLink®, Nunhems®, Stoneville®

Business review

- Sales improve by 27% to €7,814 million, mainly due to portfolio effects
- EBIT before special items 49% higher at €1,095 million, primarily from sales growth

The Agricultural Solutions segment increased sales to third parties considerably by €1,658 million to €7,814 million in 2019. This was driven by the strongly positive contribution from the businesses and assets acquired from Bayer in August 2018.¹ A slightly higher price level and currency effects also contributed to the positive year-on-year sales development. In a continuing difficult market environment, sales volumes in North America and Europe were lower than in the previous year.

Factors influencing sales – Agricultural Solutions

Volumes	(1%)
Prices	3%
Portfolio	24%
Currencies	1%
Sales	27%

In **Europe**, we improved sales by €98 million to €2,120 million. This was largely attributable to portfolio effects from the acquired businesses. In addition, we recorded a slightly higher price level. Sales development was dampened by lower volumes, especially for herbicides and fungicides, and negative currency effects, particularly in Turkey.

We increased sales in **North America** by €942 million to €3,108 million. The sales increase was mainly the result of portfolio effects from the acquired businesses. In addition, we recorded positive currency effects and a higher price level. Sales volumes were significantly lower than in the previous year, particularly for herbicides and fungicides. This was attributable to distributor destocking and challenges

Segment data – Agricultural Solutions

Million €	2019	2018	+/-
Sales to third parties	7,814	6,156	27%
Intersegment transfers	197	58	240%
Sales including transfers	8,011	6,214	29%
Income from operations before depreciation, amortization and special items	1,809	1,128	60%
Income from operations before depreciation and amortization (EBITDA)	1,647	985	67%
EBITDA margin	21.1	16.0	–
Depreciation and amortization ^a	719	394	82%
Income from operations (EBIT)	928	591	57%
Special items	(167)	(143)	(17%)
EBIT before special items	1,095	734	49%
Return on capital employed (ROCE)	5.3	5.1	–
Assets	16,530	16,992	(3%)
Investments including acquisitions ^b	320	7,110	(95%)
Research and development expenses	879	679	29%

^a Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

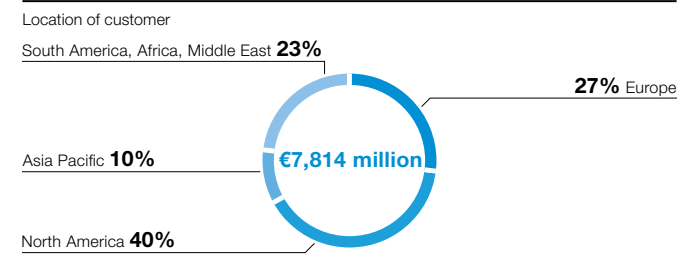
^b Additions to intangible assets and property, plant and equipment

relating to weather conditions and the trade conflicts, especially in the first half of 2019.

Sales in **Asia** rose by €140 million to €785 million. This was mainly due to portfolio effects from the acquired businesses. Higher volumes, especially for herbicides, and currency effects also contributed to sales growth.

In the region **South America, Africa, Middle East**, sales rose by €478 million to €1,801 million. This was primarily due to significantly higher volumes, particularly for fungicides and herbicides. Sales volumes rose significantly, particularly in Brazil. A higher price level and portfolio effects from the acquired businesses also contributed to the sales increase. Currency effects had an offsetting impact.

Agricultural Solutions – Sales by region



¹ Until August 2019, the sales contribution from the acquired businesses is still reported as a portfolio effect in our analysis of sales effects, as the acquisition of significant businesses and assets from Bayer was closed in August 2018. For the period thereafter, the sales contribution is included in the explanations of the volumes, price and currency effects described here.

Income from operations (EBIT) before special items was €1,095 million, €361 million above the 2018 figure. The increase was largely attributable to considerably higher sales.

At €928 million, **EBIT** was €337 million higher than in the previous year. Special charges primarily arose from the integration of the acquired Bayer businesses. This was offset by special income from divestitures in accordance with the conditions imposed by the authorities in connection with the acquisition.

[🔗 See page 137 for the outlook for 2020](#)

Other

Sales in Other rose by €57 million compared with 2018 to €2,898 million. This was mainly due to the remaining activities of BASF's paper and water chemicals business, which were not part of the transfer to Solenis and are reported under Other.

At minus €688 million, **income from operations before special items** in Other was down €227 million from the prior-year figure. This was largely attributable to valuation effects for our long-term incentive program.

Financial data – Other^a

Million €

	2019	2018	+/-
Sales	2,898	2,841	2%
Income from operations before depreciation and amortization and special items	(521)	(335)	(56%)
Income from operations before depreciation and amortization (EBITDA)	(483)	(378)	(28%)
Depreciation and amortization ^b	184	128	44%
Income from operations (EBIT)	(667)	(506)	(32%)
Special items	21	(45)	.
EBIT before special items	(688)	(461)	(49%)
of which costs for cross-divisional corporate research	(397)	(414)	4%
costs of corporate headquarters	(231)	(249)	7%
other businesses	73	25	192%
foreign currency results, hedging and other measurement effects	(89)	324	.
miscellaneous income and expenses	(44)	(147)	70%
Assets ^c	27,585	26,856	3%
Investments including acquisitions ^d	299	759	(61%)
Research and development expenses	411	414	(1%)

^a Information on the composition of Other can be found in the Notes to the Consolidated Financial Statements from page 220 onward.

^b Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and reversals of impairments)

^c Contains assets of businesses recognized under Other as well as reconciliation to assets of the BASF Group including the disposal groups for the oil and gas business and the construction chemicals business

^d Additions to intangible assets and property, plant and equipment

Oil and gas business

The price of a barrel of Brent crude oil averaged \$64 in 2019 (previous year: \$71). Gas prices on the European spot markets declined significantly compared with the previous year.

Discontinued oil and gas business until April 30, 2019

Wintershall's earnings were presented in income after taxes from discontinued operations until the merger of Wintershall and DEA on May 1, 2019. This figure included the income after taxes of the former Wintershall companies (€237 million) and the deconsolidation gain of €5,684 million.

Until April 30, 2019, Wintershall produced 19 million barrels of oil equivalent (BOE) and condensate, and around 44 million BOE of gas. Most of this was produced in Russia (around 36 million BOE) and Norway (around 12 million BOE). In Norway, production was expanded at the Aasta Hansteen gas field, which is operated by Equinor. Wintershall was awarded new exploration licenses in Norway and Argentina in early 2019. In the first four months of 2019, one successful exploration well was drilled in Norway.

Equity-accounted oil and gas business from May 1, 2019

Since May 1, 2019, BASF has reported its share of Wintershall Dea's adjusted net income in EBIT before special items and in EBIT of the BASF Group, presented under Other. Adjustments include, in particular, effects from the remeasurement of the assets and liabilities of the former Wintershall. Adjustments will be made for additional depreciation charges and the results of any asset sales. The company contributed minus €86 million to the BASF Group's EBIT in the period from May 1, 2019, to December 31, 2019.

Wintershall Dea conducts production, development and exploration activities in the following countries:

- Egypt (production, development, exploration)
- Algeria (production, development)
- Argentina (production, development, exploration)
- Brazil (exploration)
- Denmark (production, exploration)
- Germany (production, development, exploration)
- Libya (production, exploration)
- Mexico (production, development, exploration)
- Netherlands (production, exploration)
- Norway (production, development, exploration)
- Russia (production, development)
- United Arab Emirates (development, exploration)
- United Kingdom (production, development, exploration)

Between the merger on May 1, 2019, and December 31, 2019, Wintershall Dea produced 151 million BOE,¹ of which around 109 million BOE of gas.¹

In the second quarter of 2019, Wintershall Dea sold its German oil storage activities. In the fourth quarter of 2019, Wintershall Dea sold shares in the Aguada Federal and Bandurria Norte blocks in Argentina, as well as its shares in the Polarled pipeline and the Nyhamna terminal in Norway.

Investment projects that were already underway continued as planned. These include, in particular, the Nova and Dvalin projects operated by Wintershall Dea in Norway. The two fields are being developed by means of a subsea tieback, with production facilities on the seabed connected to existing platforms. The drilling phase commenced for Dvalin and production is expected to start in 2020. In Russia, the Achim Development joint venture operated with Gazprom, in which Wintershall Dea holds a 25.01% interest, started the field development of blocks 4A and 5A in the Achimov Formation. Another investment focus is Egypt, especially the Nile Delta.

The Achimgaz joint venture with Gazprom drilled the last of a total of 108 production wells. The company can now produce at a plateau rate of 10 billion cubic meters of gas per year as planned.

Wintershall Dea drilled 18 exploration wells¹ in the period from May to December 2019. Of these, 12¹ were dry wells and were written off.

Wintershall Dea is also active in gas transportation. This includes interests in GASCADE Gastransport GmbH, OPAL Gastransport GmbH & Co. KG, and Nord Stream AG. Wintershall Dea is involved in the financing of the Nord Stream 2 pipeline project but does not hold an interest in the company.

In September 2019, Wintershall Dea placed its inaugural bonds worth €4 billion.

¹ Includes companies accounted for by Wintershall Dea in full and using the equity method

Discontinued construction chemicals business

On December 21, 2019, BASF and an affiliate of Lone Star, a global private equity firm, signed an agreement on the sale of BASF's construction chemicals business. The signing of the agreement has an immediate effect on the reporting of BASF Group. Retroactively as of January 1, 2018, sales and earnings of the former Construction Chemicals division are no longer included in sales, EBITDA, EBIT and EBIT before special items of the BASF Group. Until closing, the income after taxes of the construction chemicals business will be presented in the income after taxes of BASF Group as a separate item ("Income after taxes from discontinued operations"). The assets and liabilities of the construction chemicals business were reclassified to a disposal group as of the end of the fourth quarter of 2019, and will be presented under Other until closing of the transaction, which is expected in the third quarter of 2020, subject to the approval of the relevant competition authorities.

Sales in the construction chemicals business rose by €98 million compared with 2018 to €2,553 million. The increase was attributable to positive currency effects and higher prices, especially for the former construction systems business. This was partly offset by slightly lower sales volumes due to a decrease in the construction systems business.

In North America, sales rose considerably due to positive currency effects and higher prices. Sales rose slightly in Europe, primarily as a result of higher prices. We also improved sales slightly in Asia Pacific. This was driven by favorable currency developments and higher sales volumes. Sales in South America, Africa, Middle East rose slightly. Higher prices and positive currency effects more than offset the significant decline in volumes.

Income from operations (EBIT) before special items was €130 million, €57 million above the 2018 figure. This was mainly attributable to margin growth on the back of higher prices. EBIT declined by €7 million to €52 million. Income after taxes of the discontinued construction chemicals business decreased by around €10 million to €24 million. The decrease was mainly driven by special items in connection with the planned divestiture.

[For more information on the earnings contribution from the discontinued construction chemicals business, see Note 2.5 to the Consolidated Financial Statements from page 215 onward](#)

Regional Results

Regions

Million €

	Sales by location of company			Sales by location of customer			Income from operations by location of company		
	2019	2018	+/-	2019	2018	+/-	2019	2018	+/-
Europe	25,706	27,526	(7%)	23,827	25,589	(7%)	1,976	3,210	(38%)
of which Germany	14,049	17,767	(21%)	6,123	6,687	(8%)	418	1,146	(64%)
North America	16,420	15,900	3%	15,948	15,388	4%	692	794	(13%)
Asia Pacific	13,384	13,454	(1%)	14,203	14,210	(0%)	1,082	1,793	(40%)
South America, Africa, Middle East	3,806	3,340	14%	5,338	5,033	6%	302	177	71%
BASF Group	59,316	60,220	(2%)	59,316	60,220	(2%)	4,052	5,974	(32%)

Europe

- Sales down 7% compared with 2018 at €25,706 million
- EBIT declines 38% to €1,976 million

Sales at companies located in Europe declined by 7% year on year to €25,706 million. This was mainly due to considerably lower sales in the Chemicals and Materials segments. The Industrial Solutions segment also posted a considerable sales decrease, while Other and the Nutrition & Care segment saw slight declines. By contrast, sales rose considerably in the Surface Technologies and Agricultural Solutions segments.

Sales developments were driven by lower volumes and prices. Sales volumes declined in the Chemicals segment in particular due to the scheduled turnarounds of our steam crackers. The Materials segment also recorded lower volumes on the back of weaker demand from key industries. Price levels softened, mainly in the Chemicals segment due to lower raw materials prices for naphtha and butane, and in the Materials segment as a result of lower isocyanate prices. By contrast, prices in the Surface Technologies

segment were well above the prior-year level. Sales were also positively impacted by portfolio effects in the Agricultural Solutions segment, while sales development in the Industrial Solutions segment was dampened by the transfer of BASF's paper and water chemicals business to the Solenis group. Currency effects had a positive impact.

EBIT declined by €1,234 million compared with the previous year to €1,976 million. Almost all segments and Other recorded lower contributions, but especially Materials and Chemicals. EBIT improved considerably in the Industrial Solutions segment.

We further strengthened our position in the European market with investments, including the replacement of the acetylene plant in Ludwigshafen, Germany, with a modern, highly efficient plant and the feedstock flexibilization of our steam cracker in Antwerp, Belgium.

North America

- Sales growth of 3% to €16,420 million
- EBIT declines 13% to €692 million

Sales at companies located in North America rose by 3% compared with 2018 to €16,420 million. Growth was driven by the Agricultural Solutions and Surface Technologies segments. In local currency terms, sales declined by 2%.

The development was primarily attributable to portfolio effects in the Agricultural Solutions segment and positive currency effects in all segments. Prices were slightly higher overall: Price levels rose significantly in the Surface Technologies segment but declined markedly in the Chemicals and Materials segments in particular. Sales were negatively impacted by significantly lower volumes, especially in the Chemicals and Agricultural Solutions segments.

EBIT was down €102 million from the 2018 figure, at €692 million. Considerable earnings growth in the Agricultural Solutions, Surface Technologies and Industrial Solutions segments was unable to offset the considerable decline in the Chemicals, Materials and Nutrition & Care segments. EBIT includes a special charge from the impairment of project costs for a planned methane-to-propylene plant on the U.S. Gulf Coast.

We further strengthened our position in the region with the acquisition of significant businesses from Bayer in the areas of seeds and non-selective herbicides. We invest strategically in our production plants. For example, we are constructing a new MDI synthesis unit in Geismar, Louisiana. We started up a new production plant for engine coolants in Cincinnati, Ohio, and expanded our production capacities for automotive coatings in Tultitlán, Mexico. We are also expanding our capacities for ibuprofen in Bishop, Texas, and for resins in Greenville, Ohio.

Sales by region

Location of company

South America, Africa, Middle East 6%

43% Europe

Asia Pacific 23%

North America 28%



Income from operations by region

Location of company

South America, Africa, Middle East 7%

49% Europe

Asia Pacific 27%

North America 17%



Asia Pacific

- Sales 1% below previous year at €13,384 million
- EBIT declines 40% to €1,082 million

Sales at companies headquartered in the Asia Pacific region declined by 1% to €13,384 million in 2019. In local currency terms, sales were down 3% from the prior-year level. This was mainly due to lower sales in the Materials segment. Sales also decreased considerably in the Industrial Solutions and Chemicals segments. Considerable sales growth in the Surface Technologies, Nutrition & Care and Agricultural Solutions segments was unable to compensate for this.

The decline in sales was due to lower prices in almost all segments, but especially in the Materials segment. By contrast, prices in the Surface Technologies segment were well above the prior-year level. Currency effects had a positive impact across the board. We increased volumes slightly with higher sales volumes in the Nutrition & Care, Surface Technologies and Agricultural Solutions segments. Overall, portfolio measures did not have any impact. The transfer of BASF's paper and water chemicals business to the Solenis group dampened developments in the Industrial Solutions segment, while the acquisition in the Agricultural Solutions segment had a positive impact on sales.

EBIT in the region declined by €711 million year on year to €1,082 million. This was primarily due to the considerable decrease in EBIT in the Materials segment. The contribution from the Chemicals segment was also significantly lower, while EBIT in the Agricultural Solutions segment was at the prior-year level. By contrast, EBIT rose considerably in the Industrial Solutions, Surface Technologies and Nutrition & Care segments.

We aim to further increase the share of local production in Asia Pacific. We again made progress toward this goal: In Nanjing, China, for example, we expanded the production capacity for intermediates. Our investments in production facilities as well as in research and development serve to bring products to market for our local and global customers in this fast-growing region. In late November 2019, the official groundbreaking ceremony was held for the first plants at the planned integrated Verbund chemical production site in Zhanjiang in the southern Chinese province of Guangdong. The first plants will produce engineering plastics and thermoplastic polyurethane (TPU) to serve the growing demand in various growth industries in Asia, including in the southern Chinese market. We are also evaluating the construction of a chemical complex in Mundra, India, in cooperation with ADNOC, Adani and Borealis.

South America, Africa, Middle East

- Sales growth of 14% to €3,806 million
- EBIT 71% higher at €302 million

Sales at companies located in the region South America, Africa, Middle East increased by 14% compared with 2018 to €3,806 million. In local currency terms, sales exceeded the prior-year figure by 18%. This was mainly due to considerable sales growth in the Agricultural Solutions segment. The Surface Technologies, Nutrition & Care and Chemicals segments also posted higher sales. Negative sales developments in the Industrial Solutions and Materials segments had an offsetting effect.

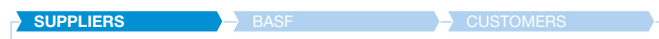
In South America, 2019 was a year dominated by economic and political challenges. Nevertheless, BASF increased sales volumes in all segments, especially in the Agricultural Solutions segment. This was primarily attributable to the positive contribution from the seed businesses acquired from Bayer. In the Nutrition & Care and Materials segments, sales volumes were likewise considerably above the prior-year level. A higher price level in all segments except Materials and Chemicals, particularly in the Agricultural Solutions segment, also contributed to sales growth. Portfolio effects had a positive impact on sales. This more than offset negative currency effects.

Companies in Africa and in the Middle East posted a slight sales decrease overall. Higher volumes could not completely offset lower prices and negative portfolio effects.

At €302 million, EBIT in the region South America, Africa, Middle East exceeded the prior-year figure by €125 million. We considerably improved earnings in almost all segments, especially in the Agricultural Solutions segment as a result of higher sales volumes, and in the Chemicals and Surface Technologies segments.

Responsible Conduct Along the Value Chain

Supplier Management



Our objective is to secure competitive advantages for BASF through professional procurement structures. Our suppliers are an important part of our value chain. Together with them, we aim to create value and minimize risks.

Strategy

- Sustainability-oriented supply chain management
- New goals for sustainability evaluations of relevant spend

Our partnerships with suppliers are based on mutual value creation, as well as a reliable supply of raw materials, technical goods and services at competitive prices.¹ We work together in an open and transparent way to generate long-term benefits for both sides. In doing so, we create value added that goes above and beyond procurement alone. For example, we develop solutions to target market-specific customer requirements together with our suppliers. Our sustainability-oriented supply chain management contributes to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our requirements. We count on reliable supply relationships and want to make our suppliers' contribution to sustainable development transparent to us.

Due to the size and scale of our supplier portfolio, our suppliers are evaluated based on risk, including both country and industry-specific risks. We actively promote sustainability in the supply chain and have set ourselves ambitious targets for this: By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend² and will develop action plans where improvement is necessary. We will work towards having 80% of suppliers improve their sustainability performance upon re-evaluation. In 2019, 81% of the relevant spend had been evaluated. Of the suppliers re-evaluated in 2019, 52% had improved. The global targets are embedded in the personal goals of persons responsible for procurement.

2025 target

Share of relevant spend covered by sustainability evaluations

90%

2025 target

Percentage of suppliers with improved sustainability performance upon re-evaluation

80%

Worldwide procurement

Our more than 75,000 Tier 1 suppliers play a significant role in value creation at our company. We work in long-term partnership with companies from different industries around the world. They supply us with raw materials, chemicals, investment goods and consumables, perform a range of services and are innovation partners. We acquired raw materials, goods and services for our own production worth approximately €34.5 billion in 2019. There were no substantial changes to our supplier structure.

What we expect from our suppliers

■ Global Supplier Code of Conduct

New suppliers are selected and existing suppliers are evaluated not only on the basis of economic criteria, but also environmental, social and corporate governance standards. Our Supplier Code of Conduct is founded on internationally recognized guidelines, such as the principles of the United Nations' Global Compact, the U.N. Guiding Principles on Business and Human Rights, the International Labor Organization (ILO) conventions and the topic areas of the Responsible Care initiative. The Code of Conduct covers compliance with human rights, labor and social standards, and antidiscrimination and anticorruption policies in addition to protecting the environment.

A registration portal incorporating our Supplier Code of Conduct was introduced in 2019 for all suppliers of technical goods, services and investment goods. In 2019, 1,596 new suppliers committed to our values via the portal. We specifically ask new raw materials suppliers to commit to the values of our Supplier Code of Conduct. Companies that do not accept our values are not taken on as new suppliers.

¹ BASF considers all direct suppliers of the BASF Group in the business year concerned as Tier 1 suppliers. These are suppliers that provide us with raw materials, investment goods, consumables and services.

Suppliers can be natural persons, companies or legal persons under public law.

² We understand relevant spend as procurement volumes with relevant suppliers. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices and our purchasers' assessments. We also use further sources of information to identify relevant suppliers such as evaluations from Together for Sustainability (TfS), a joint initiative of chemical companies for sustainable supply chains.

Training and partnerships

In Brazil, we trained employees from 81 suppliers on topics such as how the United Nations' Sustainable Development Goals (SDGs) can be implemented. We trained employees from 49 suppliers in 2019 as part of a local partnership with the East China University of Science and Technology in Shanghai.

BASF is one of 11 founding members of the econchain – German Business Initiative for Sustainable Value Chains initiative coordinated by the German sustainability network econsense. As part of this initiative, we help suppliers to improve their sustainability performance through training. Following successful pilot supplier training, which we started in 2018 in China and Mexico and completed in 2019, the concept was enhanced and refined to roll out the training further in 2020.

In addition, we instructed 229 BASF employees with procurement responsibility on sustainability-oriented supplier management and responsible procurement. This strengthens employee awareness to identify and minimize potential risks in the supply chain.

[For more information on decent work in global supply chains, see page 40](#)

[For more information on supplier training from econsense, see econchain.de/en](#)

Evaluating our suppliers

- **Together for Sustainability initiative aims to harmonize and standardize supplier assessments and audits**
- **Risk-based approach with clearly defined internal follow-up processes**

BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. With the help of TfS, we promote sustainability in the supply chain. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. The evaluation process is simplified for both suppliers and TfS member companies by a globally uniform questionnaire. The 22 members of the initiative conducted a total of 4,197 sustainability assessments – including both initial and follow-up assessments – and 309 audits in 2019. TfS has developed training for suppliers that already have a sustainability rating but have potential for improvement in environmental, social and corporate governance. In 2019, more than 200 participants attended training on this topic in China.

Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. A total of 81 raw material supplier sites were audited on sustainability standards on our behalf in 2019. We also received sustainability assessments for 537 suppliers from an external service provider. If we identify potential for improvement, we support suppliers in developing measures to fulfill our standards, such as providing training on environmental, social and corporate governance topics. We conduct

another review according to a defined timeframe based on the sustainability risk measured. BASF reserves the right to discontinue any business relationship for non-adherence to international principles, failure to correct violations, or for displaying patterns of non-compliance with these standards. This did not occur in any case in 2019. We use this approach to evaluate suppliers with a potential sustainability risk at least every five years. The approach itself is regularly reviewed to identify possibilities for optimization.

[For more information on raw materials, see page 105](#)

[For more information on Together for Sustainability, see basf.com/en/together-for-sustainability](#)


Audit results

The audits conducted over the past few years have identified some deviations with respect to environmental, social and corporate governance standards, for example in waste and wastewater management, deviations in occupational safety measures and standards under labor law. Follow-up assessments in 2019 found, for example, that hazardous materials were stored correctly, wastewater was treated properly, there were sufficient emergency exits and trained emergency teams, and that labor laws were complied with. In 2019, none of our audits identified any instances of child labor or dangerous work and overtime performed by persons under 18. Further audits will be conducted at two suppliers due to lack of documentation.

BASF reviewed and assessed the issues raised at the platinum supplier Lonmin Plc,¹ London, United Kingdom, in connection with the events in Marikana, South Africa. Lonmin was acquired by Sibanye-Stillwater on June 10, 2019. BASF initiated a dialog with Sibanye-Stillwater at an early stage on the results of the two audits

¹ In 2012, an extended strike at a mine formerly operated by Lonmin Plc, London, UK, in Marikana, South Africa, culminated in a violent confrontation between mine workers and armed South African police. Employees of the platinum supplier Lonmin were among the fatalities. Ownership of the Marikana mine was transferred to Sibanye-Stillwater with its acquisition of Lonmin.

of Lonmin in 2015 and 2017 and the measures arising from these. In January 2020, a full mining-specific re-audit was performed in accordance with the standards of the chemical industry's "Together for Sustainability" (TfS) initiative to re-evaluate the situation and identify current need for action. Sibanye-Stillwater is a member and supporter of the International Platinum Group Metals Association (IPA) sustainability initiative that was co-founded by BASF. Under this initiative, the most important platinum mines and fabricators in South Africa and their customers – like BASF – are working to improve local living and working conditions. Measures include conducting comprehensive sustainability audits in the South African platinum group metals sector and exchanging factors for success. BASF continued its regular dialog with local stakeholder groups in 2019.

 For more information on the supplier relationship with the Sibanye-Stillwater mine, see [basf.com/en/marikana](https://www.basf.com/en/marikana)

Raw Materials

SUPPLIERS

BASF

CUSTOMERS

Responsible resource management is an integral part of our strategy. It is applied within the company through our Verbund concept, our innovative products and the use of renewable raw materials. In the search for alternative raw materials, we employ solutions that contribute to sustainability.

Strategy

We strive to procure responsibly and use raw materials efficiently. That is why we take an interest in our suppliers, their products and the entire supply chain. The Verbund system is an important component of our resource efficiency concept: The by-products of one plant often serve as feedstock elsewhere, helping us to use raw materials more efficiently. We also contribute to the circular economy with our ChemCycling™ project (see box on the right).

In 2019, BASF purchased a total of around 30,000 different raw materials from more than 7,000 suppliers. Important raw materials (based on volume) include naphtha, liquid gas, natural gas, benzene and caustic soda. In addition to fossil resources, we also employ renewable raw materials. We use these to manufacture products that either cannot be made with fossil resources, or only at significantly greater effort, for example. In addition, our biomass balance approach enables us to allocate renewable raw materials to many of the products in our portfolio. Independent certification confirms that we have replaced the fossil feedstock needed for the sold biomass balance product with renewable resources. Products manufactured using this approach are indistinguishable from those produced solely from fossil raw materials. As for fossil raw materials, we also consider how renewable raw materials impact sustainability topics along the value chain. As well as positive effects like saving greenhouse gas emissions, these can also have negative effects on areas such as biodiversity, land use or working conditions, depending on

The ChemCycling™ project

Recycling is becoming increasingly important due to the growing sustainability requirements in the markets and regulatory developments. The ChemCycling™ project launched by BASF in 2018 aims to manufacture products from chemically recycled plastic waste on an industrial scale.

To do this, our partners use thermochemical processes to transform plastic waste into secondary raw materials such as pyrolysis oil. We can feed these into our production Verbund at the beginning of the value chain, reducing the use of fossil raw materials. The percentage of recycled materials can be allocated to certain products manufactured in the Verbund using a mass balance approach and we can offer our customers certified products. These are indistinguishable from products manufactured from fossil feedstock.

In the pilot phase of the ChemCycling™ project, BASF presented – together with customers from various industries – prototypes made from chemically recycled materials, including mozzarella packaging, transparent refrigerator elements and insulation boxes.

In 2019, BASF invested €20 million in Quantafuel AS, a start-up based in Oslo, Norway, that specializes in the pyrolysis of mixed plastic waste and the purification of the resulting oil. BASF is providing technical support in the startup of Quantafuel's commercial plant in Skive, Denmark. Together, the partners are also developing further the chemical recycling technology used by Quantafuel – an integrated pyrolysis and purification process. The aim is to optimize the products for use as raw materials in the chemical industry.

In the future, chemical recycling can help to reduce the amount of plastic waste that is disposed of in landfill or burned to produce energy. Chemical recycling complements mechanical recycling and is particularly suited to recycling mixed plastics or plastics with residues.

For more information, see basf.com/en/chemcycling

the raw material. We aim to minimize these raw material-specific risks with measures, projects and targeted involvement in sustainability initiatives in the relevant value chains.

At a workshop in Ludwigshafen, Germany, we discussed with more than 90 recycling and standardization experts how the mass balance approach can be standardized to drive forward circular economy models. The starting point for discussions was a white paper from the CE100 (Circular Economy 100) initiative of the Ellen MacArthur Foundation, to which BASF sustainability experts had also contributed.

Renewable resources

■ Numerous projects and cooperative ventures to improve sustainability along the value chain

In 2019, around 5.3% of the raw materials we purchased worldwide were from renewable resources. To make the use of these materials more competitive, we work on product innovations based on renewable raw materials as well as on enhancing production processes. We also further established our biomass balance approach on the market in 2019. This approach aims to replace natural gas and naphtha at the beginning of the value chain with biomethane and bio-naphtha from certified sustainable production. Should a customer select a biomass balanced product, the proportion of

renewable feedstock to be used is calculated based on the formulation. The calculation model is certified by an independent third party (TÜV Süd). In June 2019, BASF switched from TÜV Süd to the chemical industry's REDcert2 standard for the certification of its biomass balanced products.

Our Verbund production ensures that the characteristics and quality of all end products remain unchanged and that our customers can use them as usual. This method has already been applied to more than 80 BASF products – for example, for superabsorbents, dispersions, plastics such as polyamides and polyurethanes, and for intermediates available on the market as “drop-in products.” These can be used in place of previously employed products in the production process without having to change the process itself.

Palm oil, palm kernel oil, and their derivatives are some of our most important renewable raw materials. We aim to ensure that these raw materials come from certified sustainable sources, and actively support the Roundtable on Sustainable Palm Oil (RSPO). In 2019, we published our third progress report – the BASF Palm Progress Report – for greater transparency in the value chain. Based on our voluntary commitment to sustainably source palm oil products, we purchased 140,400 metric tons of certified palm kernel oil in 2019. This represents around 83.5% of our total volume of palm kernel oil.

Demand for certified products increased significantly again. As a result, in 2019 we increased sales volumes of certified palm oil and palm kernel oil-based products for the cosmetics and detergent and cleaning industries by more than 40% compared with the previous year. We are expanding our offering of certified sustainable products in accordance with the RSPO's Mass Balance supply chain model. This helps our customers to meet their obligations to customers, consumers and stakeholders. BASF continues to drive forward the RSPO supply chain certification of our sites for cosmetic ingredients. In 2019, 24 production sites worldwide were RSPO certified. Our goal is to only source RSPO certified palm oil and palm kernel oil by 2020, provided it is available on the market. By 2025, this voluntary

commitment will be expanded to include the most important intermediate products based on palm oil and palm kernel oil; these include fractions and primary oleochemical derivatives as well as edible oil esters.

In addition, our BASF Palm Sourcing Policy addresses the requirements for protecting and preserving forests and peatland, as well as the involvement of local communities. At the same time, we are stepping up our efforts to improve transparency and traceability in the supply chain. We were most recently able to trace 90% of our overall oil palm exposure.

BASF and Henkel have cooperated with the development organization Solidaridad since 2016 to more closely involve smallholder farmers in Indonesia and improve their living conditions. Smallholders complete farming and environmental training as part of the Farmer Field School initiative, with a focus on efficient and sustainable growing practices and health and safety standards. Between the start of the project in 2016 and June 2019, a total of more than 2,000 smallholders have completed a training program as part of the Farmer Field School initiative.

BASF, The Estée Lauder Companies and the RSPO have also partnered with Solidaridad to promote sustainable palm oil and palm derivatives production in the Indonesian province of Lampung. The project supports around 1,000 independent smallholders to improve their livelihoods and their sustainable production of palm oil and palm kernel oil. The project's target is that a minimum of one-third of the supported smallholder farmers become certified according to the RSPO Smallholder Standard in three years.

BASF cooperates with Cargill, Procter & Gamble and the German governmental agency for international cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) in a development partnership under the develoPPP.de program commissioned by the German Federal Ministry for Economic Cooperation and Development to establish a certified coconut oil supply chain and

improve the livelihood of coconut farmers in the Philippines and Indonesia. Thanks to the initiative, the first certified sustainable coconut oil was produced in the Philippines in 2018. Between November 2015 and October 2019, more than 4,100 coconut farmers were trained in Good Agricultural and Practices and farm management. About 1,600 farmers received additional training and were certified according to the Rainforest Alliance Sustainable Agriculture Standard. Farmers who were trained and certified earn 47% more on average than farmers who did not participate in the program.

There is a growing demand for sustainably produced castor oil, but there are no standards defined and adopted across the globe that can certify the same. Castor beans are mainly grown by Indian smallholders and there are few incentives for the producers to comply with the generally accepted quality standards. The Sustainable Castor Initiative – Pragati, a joint initiative established by BASF together with Arkema, Jayant Agro and Solidaridad, made further progress in 2019. With the initiative, the project members aim to improve the economic situation of castor oil farmers and their workers in India. Smallholders are trained and audited based on a sustainability code to optimize their yields, reduce the impact on the environment and be able to offer certified sustainable castor oil on the global market. BASF can start procuring sustainably produced, certified castor oil from 2020 onward. Based on the total volume required, we want to increase the share of sustainably produced castor oil over the long term. Since the project was initiated, more than 3,000 smallholders and over 5,000 hectares of land have been certified for sustainable castor cultivation. The smallholders certified under the program have been able to increase their yields by at least 50% compared with the 2016 baseline. The project has been extended for another three years, from 2019 to 2022.

For more information on renewable resources, see basf.com/renewables

For more information on our voluntary commitment to palm oil products and the Palm Progress Report, see basf.com/en/palm-dialog

Mineral raw materials

Sourcing mineral raw materials responsibly is important to BASF. We procure a number of mineral raw materials, such as precious metals, which we use to produce mobile and process emissions catalysts and battery materials. We support our customers by tracking the origins of minerals as defined in the Dodd-Frank Act – including tin, tantalum, tungsten, their ores and gold – to see if they come from mines in conflict regions in suspicious cases. We reserve the right to have suppliers audited and, if necessary, terminate our business relationship. Our suppliers have confirmed to us that they do not source minerals matching this definition of conflict minerals from the Democratic Republic of Congo or its neighboring countries. We intend to implement the E.U. Conflict Minerals Regulation published in 2017 by the 2021 deadline. The E.U. regulation defines supply chain due diligence for importers and processors of certain mineral raw materials originating from conflict regions and high-risk areas. In addition to responsible procurement of “conflict minerals,” BASF is committed to a responsible and sustainable global supply chain for cobalt and mica.

BASF does not purchase cobalt from artisanal mines in the Democratic Republic of Congo and aims to avoid this in the supply chain as well. In accordance with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, we have analyzed our supply chains for cobalt for battery materials and conduct audits based on a specific risk assessment. BASF and Nornickel have signed a long-term supply agreement for nickel and cobalt from Nornickel's metal refinery in Finland. The agreement ensures locally sourced and secure supply of raw materials for battery production in Europe.

BASF continues to be actively involved in the World Economic Forum's Global Battery Alliance (GBA), which it co-founded in 2017. The GBA has around 70 members, who are committed to creating a socially responsible, ecological, economically sustainable and innovative value chain for batteries.

The Responsible Cobalt Initiative (RCI) was re-established in 2019 with a focus on China. It remains an important partner for us. BASF joined the Responsible Minerals Initiative in December 2019 to systematically promote supply chain transparency for conflict materials and cobalt. We also continue to be involved in Cobalt for Development, a joint pilot project launched in 2018 with BMW, Samsung SDI, Samsung Electronics and the German governmental agency for international cooperation (Gesellschaft für Internationale Zusammenarbeit, or GIZ). The companies tasked GIZ with setting up a three-year pilot mining project to identify how to improve working conditions in artisanal mines, as well as living conditions in the surrounding communities in the Democratic Republic of Congo. Together with authorities in the province of Lualaba, the project has selected a legal artisanal mine site 20 kilometers south of Kolwezi to pilot the approach. GIZ is working together with the international nongovernmental organizations IMPACT and Good Shepherd International Foundation/Bon Pasteur on the first activities in Lualaba.

BASF uses raw mica as well as mica-based effect pigments. Our demand is largely met with mica from our own mine in Hartwell, Georgia. Some of our businesses source exclusively from this mine. We require our mica suppliers to comply with internationally recognized standards, including the prohibition of child labor. As a member of the Responsible Mica Initiative, BASF is actively working to ban child labor in the mica business. The initiative aims to eradicate child labor and unacceptable working conditions in the mica supply chain in India.

Automotive catalytic converters contain valuable precious metals like platinum, palladium and rhodium. They help to eliminate engine emissions such as carbon monoxide. The recycling of spent automotive catalysts is a complex process that enables the re-use of their precious metals. BASF recycles the platinum group metals (PGMs) contained in scrap automotive catalytic converters and chemical catalysts. All of the metal we recover is used to supply our mobile emissions catalysts and chemical and process catalysts businesses.

[For more information on BASF's agreement with Nornickel, see page 81](#)

[For more information on the Cobalt for Development project, see basf.com/cobalt-initiative](https://www.basf.com/cobalt-initiative)

Environmental Protection, Health and Safety

Responsible Care Management System

SUPPLIERS

BASF

CUSTOMERS

The protection of people and the environment is our top priority. Our core business – the development, production, processing and transportation of chemicals – demands a responsible approach. We systematically address risks with a comprehensive Responsible Care Management System, which is continually being further developed. We expect our employees and contractors to know the risks of working with our products, substances and plants and handle these responsibly.

Responsible Care Management System

- Global directives and standards for safety, security, health and environmental protection
- Regular audits to monitor performance and progress

BASF's Responsible Care Management System comprises the global directives, standards and procedures for safety, security, health and environmental protection for the various steps along our value chain. Our regulations cover the transportation of raw materials, activities at our sites and warehouses, and distribution of our products as well as our customers' application of the products. Specifications for implementing these measures are laid out in binding directives that are introduced in consultation with employee representatives. These describe the relevant responsibilities, requirements and assessment methods. Our policies and requirements are constantly updated. We also maintain a dialog with government institutions, associations and other international organizations.

We set ourselves ambitious goals for safety and security, and health and environmental protection. We regularly conduct audits to monitor our performance and progress. We assess the potential risks and weaknesses of all our activities – from research and production to logistics – and the effects of these on the safety and security of our employees, the environment or our surroundings. In our databases, we document accidents, near misses and safety-related incidents at our sites as well as along our transportation routes to learn from these; appropriate measures are derived according to specific cause analyses.

For more information on Responsible Care®, see basf.com/en/responsible-care

Audits

■ 152 safety, security, health and environmental protection audits performed

Regular audits help ensure that standards are met for safety, security, health and environmental protection. We conduct regular audits every three to six years at all BASF sites and at companies in which BASF is a majority shareholder. We use an audit database to ensure that all sites and plants worldwide are audited. Sites and companies acquired as part of acquisitions are audited in a timely manner to bring these into line with our standards and directives as necessary. After the integration phase is complete, they are generally audited within one to two years, depending on complexity and size. We have defined our regulations for Responsible Care audits in a global Group requirement. During our audits, we create a safety and environmental profile that shows if we are properly addressing the existing hazard potential. If this is not the case, we agree on measures and monitor their implementation, for example, with follow-up audits.

Our Responsible Care audit system complies with the ISO 19011 standard and is certified according to ISO 9001. Worldwide, 183 BASF production sites are certified in accordance with ISO 14001 and EMAS (Eco-Management and Audit Scheme) (2018: 181). In addition, 53 sites worldwide are certified in accordance with OHSAS 18001 (2018: 53).

In the BASF Group in 2019, 137 environmental and safety audits were conducted at 90 sites (2018: 126 audits at 84 sites). The focus was on auditing sites based on the level of risk. For production plants with a medium and high hazard potential, we additionally conducted 42 short-notice audits at 33 sites (2018: 44 audits at 38 sites). We audited 15 sites with respect to occupational medicine and health protection in 2019 (2018: 22). In addition, 15 health performance control visits were conducted at sites with low to medium health risks (2018: 34). The new sites from the businesses acquired from Bayer in 2018 will be evaluated in 2020 using a simplified audit process following a risk assessment.]

For more information on occupational safety and health protection, see page 109 onward

Costs and provisions for environmental protection in the BASF Group

Million €	2019	2018
Operating costs for environmental protection	1,035	1,077
Investments in new and improved environmental protection plants and facilities ^a	328	277
Provisions for environmental protection measures and remediation ^b	654	639

a Investments comprise end-of-pipe measures as well as integrated environmental protection measures.
b Values shown refer to December 31 of the respective year.

For more information, see the Notes to the Consolidated Financial Statements on pages 230 and 260

Safety in production

SUPPLIERS

BASF

CUSTOMERS

For occupational and process safety as well as health and environmental protection and corporate security, we rely on comprehensive preventive measures and expect the cooperation of all employees and contractors. Our global safety and security concepts serve to protect our employees, contractors and neighbors, to prevent property and environmental damage, and to protect information and company assets.

Strategy

- **Global safety standards**
- **Strengthening risk awareness**
- **Comprehensive incident analyses and global experience and information exchange**

The safety of our employees, contractors and neighbors, and protecting the environment is our top priority. This is why we have set ourselves ambitious goals for occupational and process safety as well as health protection.

We stipulate mandatory global standards for safety, security, and environmental and health protection. A worldwide network of experts ensures these are implemented. As part of our continuous improvement process, we regularly monitor progress toward our goals.

We promote risk awareness for every individual with measures such as systematic hazard assessments, specific and ongoing qualification measures and global safety initiatives.

We analyze accidents, incidents and their causes in detail at a global level to learn from these. Hazard analyses and the risk minimization measures derived from them are an important prevention tool. We

also promote regular dialog across different sites to strengthen risk awareness among our employees and contractors, to learn from examples of good practice and in this way, continually develop our safety culture.

By 2022, we will introduce digital solutions and applications at more than 350 of our plants to further increase the safety, security, planning capability and availability of our plants. For example, augmented reality solutions will support daily operations by providing direct, fast access to the required information with mobile end devices and apps. Other digital solutions will enable us to perform predictive maintenance or efficiently simulate maintenance and production processes in digital plant models.

Based on our corporate values, leaders serve as safety role models for our employees. Environmental protection, health, safety and security are discussed with newly appointed senior executives. Senior executives with a particular responsibility for such topics, for example in production, also receive specific further training to be able to meet their responsibilities.

Global safety initiative

- **Focus of Global Safety Days: "Safe choices become safe habits"**

Our global safety initiative was established in 2008 and plays a key role in the ongoing development of our safety culture. With around 1,000 events at 325 sites, the focus of our Global Safety Days in 2019 was "Safe choices become safe habits." Around the globe, 80,000 participants took the opportunity to learn about practical examples and gain valuable insights around risk-aware behavior and conscious decision-making. Around 7,500 employees and contractors registered to participate at the Ludwigshafen site alone. The events offered centrally were therefore 90% booked out. This

involvement and lively discussion make a major contribution to the safety culture.

For more information on the global safety initiative, see basf.com/global-safety-initiative

Occupational safety

- **New tools to prevent work-related accidents**
- **Employees and contractors worldwide instructed on safe behavior**

Our aim is to reduce the worldwide lost-time injury rate to no more than 0.1 per 200,000 working hours¹ by 2025. To prevent work-related accidents, we encourage and promote risk-conscious behavior and safe working practices for every individual, learning from incidents and regular exchange of experiences. We are constantly refining and enhancing our requirements.

2025 target

Reduction of worldwide
lost-time injury rate
per 200,000 working hours

≤ 0.1

In addition to the legally required briefings, we also held training courses on safe procedures in 2019 to strengthen risk awareness among our employees and contractors and prevent work-related accidents.

Furthermore, our training center at the Ludwigshafen site in Germany has offered continual further education on diverse safety and security topics for employees and contractors since 2010. Some 11,800 participants received training there in 2019.

¹ Hours worked by BASF employees, temporary employees and contractors



Improving health and safety with digitalization

Digitalization and the associated innovative technologies open up numerous new opportunities for us to improve occupational safety, make safety training more realistic and effective, and better link medical care around the world. In 2019, we therefore held workshops to enable internal safety experts from various disciplines to brainstorm ideas together and develop solutions. The remarkable number of suggestions – around 300 – shows the enormous potential of digitalization for health and safety. Many of the ideas are feasible and we are working on their implementation. Examples include projects to detect whether a person is wearing personal protective equipment, to locate missing persons in an emergency, virtual reality training for the fire department or telemedicine applications. Since 2018, Digital Lunch@EHS events have been held several times a year to keep experts and employees from the business units up to date with the latest developments, present progress made, inspire new applications and strengthen dialog.

In 2019, 0.3 work-related accidents per 200,000 working hours¹ occurred at BASF sites worldwide (2018: 0.3). The proportion of chemical-related accidents rose slightly to 7% (2018: 6%). Unfortunately, there was one fatal work-related accident in 2019 (2018: 3). In October, an employee of BASF Polska Sp. z o.o. succumbed to injuries sustained from falling down the stairs during a business event outside of company premises. BASF is supporting the relevant authorities in their investigation into the circumstances and cause of the accident. We use the findings to take appropriate measures to prevent this from happening again. Such measures include regular information and awareness campaigns.

For more information on occupational safety, see basf.com/occupational_safety

Process safety

- **Regular review of plant safety concepts and performance of implementation checks and safety-related measures**
- **Global initiatives to reduce process safety incidents**
- **Network of experts and global training methods foster dialog**

Process safety is a core part of safe, effective and thus sustainable production. We meet high safety standards in the planning, construction and operation of our plants around the world. These meet and, in some cases, go beyond local legal requirements.

Our global process safety standards provide the framework for the safe construction and operation of our plants as well as the protection of people and the environment. Our experts have developed a plant safety concept and implementation check for every plant that considers the key aspects of safety, health and environmental protection – from conception to startup – and stipulates specific protection measures.

In order to maintain the highest level of safety at our plants across their entire life cycles, we verify that our protection concepts, safety reviews and resulting safety measures have been carried out in all our plants at timely intervals based on risk potential. We regularly update our plants' safety and security concepts in line with changing technologies and as necessary.

2025 target

Reduction of worldwide process safety incidents per 200,000 working hours

≤ 0.1

We use the number of process safety incidents (PSI) per 200,000 working hours¹ as a reporting indicator. We have set ourselves the goal of reducing process safety incidents to a rate of no more than 0.1 per 200,000 working hours by 2025. In 2019, we recorded 0.3 process safety incidents per 200,000 working hours worldwide (2018: 0.3). We pursue continual improvement by investigating every incident in detail, analyzing causes and using the findings to derive suitable measures. In addition, training methods are continually refined and enhanced to increase risk awareness.

We are constantly working to increase the availability of our plants and determine the right point in time for maintenance measures and revamping/refurbishment. The aim is to further reduce unscheduled shutdowns. To achieve this, we launched a digitalization project in 2017, which was first implemented in 2018 at a number of plants in Ludwigshafen, Germany, and then extended in 2019 to further plants in Ludwigshafen as well as in Schwarzheide, Germany, and Antwerp, Belgium. We want to roll the project out worldwide in 2020.

¹ Hours worked by BASF employees, temporary employees and contractors

Around the world, we promote the reduction of process safety incidents and improve risk awareness with a culture of dealing openly with mistakes and initiatives to foster dialog around potential safety risks. At the Ludwigshafen site in Germany, the PSI reduction initiative was held for the fifth time in 2019. In the past, this initiative mainly focused on the implementation of technical measures, such as introducing a tool to visualize safety measures during maintenance work and startup processes for production plants, for example. In 2019, discussions centered for the first time on specific events and their behavior-based causes. Another topic was the competencies needed to prevent such events from happening again. This new approach involves targeted training and is initially being tested by three plants. Further plants will adopt the proven concept on a step-by-step basis. Bolstered by a cultural shift in risk awareness, North America again made avoiding and detecting all leaks a key priority in 2019.

We play an active role in improving process safety around the world in a global network of experts, through our involvement in organizations such as the International Council of Chemical Associations (ICCA), and by fostering dialog with government institutions.

For more information on process safety, see basf.com/process_safety

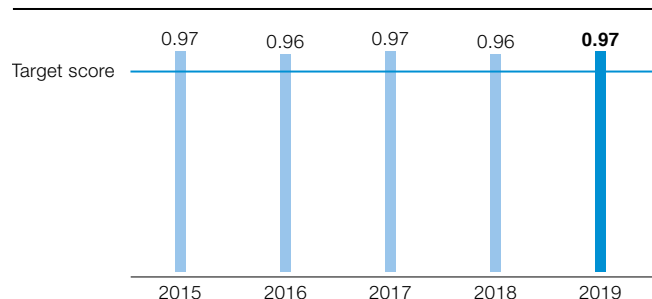
Health protection

- **Global standards for corporate health management**
- **2019 Global Health Campaign “moment_to_moment” focuses on mindfulness**

Our global corporate health management serves to promote and maintain the health and productivity of our employees. Our worldwide standards for occupational health are specified in a directive that is implemented by a global network of experts. This was once again supported by numerous emergency drills and health promotion measures in 2019.

We measure our performance in health protection using the Health Performance Index (HPI). The HPI comprises five components: recognized occupational diseases, medical emergency preparedness, first aid, preventive medicine and health promotion. Each component contributes a maximum of 0.2 to the total score, meaning that the highest possible score is 1.0. We aim to reach a value of more than 0.9 every year. With an HPI of 0.97, we once again reached this ambitious goal in 2019 (2018: 0.96).¹

Development of the Health Performance Index (HPI)



Our 2019 Global Health Campaign “moment_to_moment” focused on mindfulness. The aim was to sensitize our employees to conscious and safe behavior in their everyday working and personal lives. Over 500 sites worldwide took part in the health campaign with activities such as mindfulness workshops, courses, talks and exercises.

We raise employee awareness of health topics through offers tailored to specific target groups. The BASF health checks form the foundation of our global health promotion program and are offered to employees at regular intervals.

For more information on occupational medicine, health campaigns and the HPI, see basf.com/health

Emergency response, corporate security and cybersecurity

- **Regular review of emergency systems and crisis management structures**
- **Comprehensive protection measures against third-party interference**

We are well prepared for crisis situations thanks to our global crisis management system. In the event of a crisis, our global, regional or local emergency response plans and crisis management structures are engaged, depending on the impact scope. We involve situation-related partners and suppliers as well as cities, communities and neighboring companies. A new IT system to support emergency response was introduced in 2018/2019 to speed up communication between the relevant actors in the event of a crisis and maintain the best possible overview of the situation. The crisis management team can now record and process events around the world better and in more detail.

We regularly check our emergency systems, crisis management structures and drill procedures with employees, contractors, local authorities and emergency rescue workers. For example, in 2019 we conducted 277 drills and simulations in Ludwigshafen, Germany, to instruct participants on our emergency response measures.

We analyze the potential safety and security risks associated with investment projects and strategic plans, and define appropriate safety and security concepts. Our guiding principle is to identify risks for the company at an early stage, assess them properly and derive appropriate safeguards.

We protect our employees, sites, plants and company know-how against third-party interference. This includes, for example, analyzing potential security risks in the communities surrounding our production sites and addressing in depth the issue of cybersecurity. BASF has a comprehensive program in place to continually improve its

¹ Our updated corporate strategy realigns our goals from 2019 onward. In this connection, the global Health Performance Index target was converted into a reporting indicator. For more information on our strategy and goals, see page 24 onward.

ability to prevent, detect and react to cybersecurity incidents. By establishing a global Cyber Security Defense Center, BASF significantly expanded the availability of its cybersecurity experts to ensure around-the-clock protection. We cooperate closely with a global network of experts and partners to ensure that we can protect ourselves against cyberattacks as far as possible. Our IT security system is certified according to ISO 27001.

Around the world, we work to sensitize employees about protecting information and know-how. For example, we further strengthened our employees' awareness of risks in 2019 with mandatory online training for all employees and other offerings such as seminars, case studies and interactive training. We have defined mandatory information protection requirements to ensure compliance with our processes for protecting sensitive information and perform audits to monitor this.

Our worldwide network of information protection officers comprises around 650 employees. They support the implementation of our uniform requirements and hold events and seminars on secure behaviors. We provided information protection instruction to more than 96,000 participants in 2019. Our standardized Group-wide recommendations for the protection of information and knowledge were expanded to include additional guidance for employees and updated in line with current developments.

We inform business travelers and transferees about appropriate protection measures prior to and during travel in countries with elevated security risks. After any major incident, we can use a standardized global travel system to locate and contact employees in the affected regions.

Aspects of human rights related to site security, such as the right to liberty and security of person, are a component of the global qualification requirements of our security personnel. Respect for human rights is a mandatory element of any contract with service providers of the BASF Group who are active in this area.

🔗 [For more information on emergency response, see basf.com/emergency_response](https://www.basf.com/emergency_response)

Product stewardship



We review the safety of our products from research and development through production and all the way to our customers' application. We continuously work to ensure that our products pose no risk to people or the environment when they are used responsibly and in the manner intended.

Strategy

■ Global directives with uniformly high standards for product stewardship

We are committed to continuously minimizing the negative effects of our products on the environment, health and safety along the value chain – from development to disposal. This commitment to product stewardship is enshrined in our Responsible Care® charter and the initiatives of the International Council of Chemical Associations (ICCA). We also ensure uniformly high standards for product stewardship worldwide. In some cases, we have committed to voluntary initiatives that go beyond the local legal requirements.

We maintain and evaluate environmental, health and safety data for our substances and products in a global database. This information is updated continuously. The database forms the basis for our safety data sheets, which we make available to our customers in around 40 languages. Our global emergency hotline network enables us to provide information around the clock. We train and support our customers in fulfilling their industry or application-specific product requirements. In associations and together with other manufacturers, BASF is pushing for the establishment of voluntary global commitments to prevent the misuse of chemicals.

BASF supports the implementation of initiatives such as the Global Product Strategy (GPS) of the ICCA. GPS is establishing worldwide standards and best practices to improve the safety management of chemical substances and to support governments in the introduction of local chemical regulations. We are also involved in initiatives such as workshops and training seminars in developing countries and emerging markets. In 2019, these included the ASEAN (Association of Southeast Asian Nations) workshop on regulatory cooperation in Vietnam and a Responsible Care workshop in Argentina.

For more information on GPS, see basf.com/en/gps

Global chemicals regulations

Based on the E.U. chemicals regulation, REACH, similar chemicals regulations are being introduced around the world, for example in South Korea and Turkey. We reached important milestones in both countries in 2019. In South Korea, BASF successfully completed the pre-registration phase by the end of June. In Turkey, we submitted several thousand pre-registrations during the pre-registration phase, which is still ongoing. In Europe, our REACH activities continue to be determined by E.U. authorities' decisions on dossier evaluations. We are also required to continually update our registration dossiers. BASF is working together with the European Chemicals Agency (ECHA) on a project to improve the quality of REACH dossiers. BASF was one of the first companies to join this industry-wide initiative.

We continue to see a rise in both regulatory requirements for agrochemicals and the number of additional studies required to obtain or extend approval for crop protection products. Potential risks for people and the environment are carefully assessed and minimized throughout the research, development and registration process for crop protection products. We perform a large number of scientific studies every year to ensure that, as far as possible, our registration dossiers leave no questions unanswered.

Environmental and toxicological testing

■ Use of alternative methods for animal studies

Before launching products on the market, we subject them to a variety of environmental and toxicological testing. We apply state-of-the-art knowledge in the research and development phase of our products. For instance, we only conduct animal studies when they are required by law and approved by respective authorities. Animal studies are at times stipulated by REACH and other national legislation outside the European Union in order to obtain more information on the properties and effects of chemical products.

We adhere to the specifications laid down by the German Animal Welfare Act as well as the requirements of the Association for Assessment and Accreditation of Laboratory Animal Care – the highest standard for laboratory animals in the world. We are continually developing and optimizing alternative methods, and we use them wherever it is possible and accepted by the authorities. We use alternative methods in more than a third of our toxicological tests. Currently, 33 alternative methods are being used in our labs and another 22 are in the development stage. BASF spent €3.5 million toward this purpose in 2019. The development of alternative methods for testing the potential of substances to induce developmental toxicity has been a focus area of our research since 2017.

Since 2016, BASF SE's Experimental Toxicology and Ecotoxicology department has been working together with a total of 39 partners on one of the largest European collaborative projects for alternative methods. The project, planned to run for six years, aims to develop alternative methods to the point that chemical risk assessments can be efficiently conducted largely without animal testing.

For more information on alternative methods, see basf.com/alternative_methods

Management of new technologies

■ Continual safety research on nano- and biotechnology

Nanotechnology and biotechnology offer solutions for key societal challenges – for example, in the areas of climate protection or health and nutrition.


Safe handling of nanomaterials is stipulated in our Nanotechnology Code of Conduct. In recent years, we have conducted over 250 scientific studies and participated in numerous Verbund projects related to the safety of nanomaterials in Germany and around the world. The results were published in more than 130 scientific articles.

In 2018, we concluded laboratory and evaluation work on the Nano-in-Vivo research project. The project was conducted in cooperation with German governmental bodies over a period of more than five years and examined the toxicological effects of long-term exposure to nanoparticles. We communicated the first findings at industry conferences in 2019. We will publish further data and results together with the German governmental bodies in the final report and in scientific papers. The insights delivered by the research project complement our previous findings that toxicity is determined not by the size of the particles but by the intrinsic properties of the substance.

OECD testing and implementation guidelines must be developed for the new requirements for nanomaterials under REACH, the European chemicals regulation. We support this process by contributing our expertise in various working groups of the European Chemicals Agency (ECHA) and the OECD's Business and Industry Advisory Group (BIAC).

Together with partners from academia and government authorities, we are working on E.U.-funded projects to validate alternative testing methods for evaluating and grouping nanomaterials with a view to regulatory acceptance. Many of the methods developed for nanoparticles could, in our view, also be used to evaluate solid particles in the future, an approach we bring up in regulatory discussions.

BASF makes successful use of biotechnology. We produce a range of established products with the help of biotechnological methods. This provides us with extensive experience in the safe use of biotechnological methods in research and development as well as in production. When employing biotechnology, we adhere to all local standards and legal regulations governing production and marketing. We are also guided by the code of conduct set out by EuropaBio, the European biotechnology association.

 For more information on nanotechnology and the Nanotechnology Code of Conduct, see basf.com/nanotechnology

Transportation and storage

SUPPLIERS

BASF

CUSTOMERS

Our regulations and measures for transportation and warehouse safety cover the delivery of raw materials, the storage and distribution of chemical products among BASF sites and customers, and the transportation of waste from our sites to the disposal facilities.

Strategy

■ Risk minimization along the entire transportation chain

We want our products to be safely loaded, transported, handled and stored. This is why we depend on reliable logistics partners, global standards and an effective organization. Our goal is to minimize risks along the entire transportation chain – from loading and transportation to unloading. Some of our guidelines for the transportation of dangerous goods go above and beyond national and international dangerous goods requirements. We have defined global guidelines and requirements for the storage of our products and regularly monitor compliance with these.

Accident prevention and emergency response

■ Risk assessments for transportation and storage

We regularly assess the safety and environmental risks of transporting and storing raw materials and sales products with high hazard potential using our global guideline. This is based on the guidelines of the European Chemical Industry Council (CEFIC). We also have binding global standards for load safety.

We stipulate worldwide requirements for our logistics service providers and assess them in terms of safety and quality. Our experts use our own evaluation and monitoring tools as well as internationally approved schemes.

Transportation incidents

We are systematically implementing our measures to improve transportation safety. We report in particular on goods spillages that could lead to significant environmental impacts such as dangerous goods leaks of BASF products in excess of 200 kilograms on public traffic routes, provided BASF arranged the transport.

We recorded three incidents in 2019 with spillage of more than 200 kilograms of dangerous goods¹ (2018: 3). None of these transportation incidents had a significant impact on the environment (2018: 0).

Securing raw materials supply via the Rhine River

At the Verbund site in Ludwigshafen, Germany, around 40% of incoming volumes are transported to the site by ship under normal conditions. In 2018, logistics were impacted by the low water levels on the Rhine River caused by the hot and dry summer. We are implementing various measures to make the site more resilient to extended low water events. For instance, we are involved in creating an early warning system for low water, have chartered ships that can navigate low water levels, are investing in making loading stations more flexible, and are additionally developing our own type of ship together with partners. BASF is also a co-signatory of the German Federal Ministry of Transport's "Low water on the Rhine" action plan, which aims to improve shipping conditions on the Rhine over the coming years with various measures. We recorded no extended low water events in 2019.

Activities in external networks

We are actively involved in external networks, which quickly provide information and assistance in emergencies. These include the International Chemical Environmental (ICE) initiative and the German Transport Accident Information and Emergency Response System (TUIS), in which BASF plays a coordinating role. In 2019, we provided assistance to other companies in 165 cases worldwide (2018: 145). We apply the experience we have gathered to set up similar systems in other countries. Since 2019, external experts such as the public fire services or other emergency responders can consult our systems for information on the detection of chemical substances in the human body. This "human biomonitoring" can be used to determine and evaluate whether and what amount of chemical substances have been absorbed by the human body during a rescue operation. It can be used to test and verify the efficacy of safety measures taken and of safety equipment, which is of particular importance for the health protection of emergency responders. Our experts provide assistance in evaluating whether human biomonitoring is feasible in a specific case, and in selecting the target substances to be tested, as well as appropriate sampling methods including transport and storage of samples.

For more information on transportation safety, see basf.com/distribution_safety

For more information on emergency response, see basf.com/emergency_response

¹ Hazardous goods are classified in accordance with national and international hazardous goods regulations.

Energy and climate protection

SUPPLIERS

BASF

CUSTOMERS

As an energy-intensive company, we are committed to energy efficiency and global climate protection. We want to reduce emissions along the value chain. To achieve this, we rely on efficient technologies for generating steam and electricity, increased use of renewable energies, energy-efficient production processes and comprehensive energy management, among other things. Our climate protection products make an important contribution toward helping our customers avoid emissions.

Strategy

- **New climate protection target: CO₂-neutral growth until 2030**
- **Carbon management bundles measures to reduce greenhouse gas emissions**

Climate protection is very important to us. As a leading chemical company, we want to achieve CO₂-neutral¹ growth until 2030: We aim to keep total greenhouse gas emissions from our production sites and our energy purchases stable at the 2018 level while growing production volumes. Sharp increases due to the startup of large-scale plants will be progressively offset. When deciding on investments and acquisitions, we systematically consider the effects on greenhouse gas emissions.

We want to reach our climate protection target and enable further reductions with plant optimization measures, by purchasing low-carbon energy, and with a research and development program to reduce our greenhouse gas emissions over the long term. We have bundled these measures in our carbon management program (see page 121). In addition, we will also consider temporarily taking external offsetting measures such as purchasing certificates if the

technical or economic environment does not permit a stabilization of emissions at the 2018 level using the above approaches.

Most of BASF's greenhouse gas emissions are attributable to the consumption of energy. At sites with internal supply capabilities, we primarily rely on highly efficient combined heat and power plants with gas and steam turbines, and on the use of heat released by production processes. Furthermore, we are committed to energy management that helps us analyze and further improve the energy efficiency of our plants on an ongoing basis. We continuously analyze potential risks to our business operations arising in connection with the topics of energy and climate protection and derive appropriate measures.

We offer our customers solutions that help prevent greenhouse gas emissions and improve energy and resource efficiency. Around half² of our annual research and development spending goes toward developing these products and optimizing our processes.

Our climate protection activities are based on a comprehensive analysis of our emissions. We report on greenhouse gas emissions in accordance with the Greenhouse Gas Protocol as well as the sector-specific standard for the chemical industry. As part of the implementation of BASF's strategy, we have made changes to how greenhouse gas emissions and energy are reported from 2019 onward. For ease of comparison, the 2018 figures have been adjusted according to the new method and target.

- The emissions of BASF SE subsidiaries that are fully consolidated in the Group financial statements in which BASF holds an interest of less than 100% are included in full in emissions reporting (previously: emissions included on a pro rata basis). The emissions of proportionally consolidated joint operations continue to be disclosed pro rata according to our interest.

- We report on emissions and energy for BASF operations including the businesses acquired from Bayer in 2018 and excluding the deconsolidated oil and gas business. The businesses acquired from Bayer are accounted for from January 1, 2018.

- We use the market-based approach (previously: location-based approach) to report on greenhouse gas emissions from purchased energy (Scope 2) for the purpose of our climate protection target. Both approaches continue to be presented in the overview of greenhouse gas emissions in accordance with the Greenhouse Gas Protocol.

Since 2004, we have participated in the international non-profit organization CDP's program for reporting on data relevant to climate protection. BASF achieved a score of A– in CDP's rating for 2019, thus attaining Leadership status again. Companies on the Leadership level are distinguished by factors such as the completeness and transparency of their reporting. They also pursue comprehensive approaches in managing the opportunities and risks associated with climate change as well as emissions reduction strategies to achieve company-wide goals.

Climate protection is a shared global task. We advocate climate protection by supporting initiatives to this end. For instance, BASF spearheaded the World Economic Forum's initiative on Collaborative Innovation for Low-Carbon Emitting Technologies in the Chemical Industry. In July 2019, BASF and the World Economic Forum invited participants to a kick-off workshop in Ludwigshafen, Germany. Representatives from 20 international chemical companies met with the goal of accelerating CO₂ reduction through future cooperation. BASF also supports the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In 2019, we shared learnings and best practices on the implementation of the TCFD recommendations with four industry peers at a TCFD Preparer Forum for Chemicals. For the first time, this report includes an

¹ The goal includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents.

² Costs not relevant to the calculation of this share include research expenses in early innovation stages of the phase-gate process, patent costs and expenses for supporting services.

overview showing the sections and subsections in which TCFD-relevant information can be found (see page 18).

For more information on climate protection, see basf.com/climate_protection

For more information on carbon management, see basf.com/en/carbon-management

Global goals and measures

We want to achieve CO₂-neutral growth until 2030. In other words, we aim to maintain total greenhouse gas emissions from our production sites (excluding emissions from sale of energy to third parties) and our energy purchases at the 2018 level (21.9 million metric tons of CO₂ equivalents) while increasing production.

2030 target

CO₂-neutral growth:
Annual greenhouse gas emissions compared
with baseline 2018

(BASF operations excluding sale of energy to third parties, including offsetting)

constant

In 2019, the emissions reported under this target amounted to 20.1 million metric tons of CO₂ equivalents, a decrease of 8.2% compared with the previous year (2018: 21.9 million metric tons of CO₂ equivalents). This is primarily attributable to shutdowns of large-scale plants for maintenance work, among other reasons. In addition, energy supply agreements were updated and measures to increase energy efficiency and optimize processes were implemented. We expect emissions for 2020 to increase to the 2018 level, due among other factors to fewer scheduled major shutdowns and the acquisition of Solvay's polyamide business.

BASF Group's greenhouse gas emissions according to the Greenhouse Gas Protocol^a

Million metric tons of CO₂ equivalents

BASF operations^b

	2019	2018
Scope 1 ^c		
CO ₂ (carbon dioxide)	15.855	17.025
N ₂ O (nitrous oxide)	0.598	0.677
CH ₄ (methane)	0.025	0.027
HFC (hydrofluorocarbons)	0.082	0.091
Scope 2 ^d		
CO ₂	3.519	4.067
Total	20.079	21.887
Offsetting	0	0
Total after offsetting	20.079	21.887
Sale of energy to third parties (Scope 1) ^e		
CO ₂	0.763	0.773
Total	20.842	22.660
Use of biomass^f		
CO ₂	0.004	n/a

^a BASF reports separately on direct and indirect emissions from the purchase of energy. Scope 1 emissions encompass both direct emissions from production and generation of steam and electricity, as well as direct emissions from the generation of steam and electricity for sale. Scope 2 emissions comprise indirect emissions from the purchase of energy for BASF's use.

^b We have changed the method used to calculate the relevant environmental indicators compared with the previous year. Further information can be found on page 116. The figures for 2018 have been adjusted according to the new method.

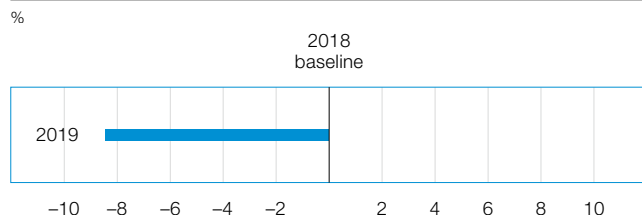
^c Emissions of N₂O, CH₄ and HFC have been translated into CO₂ emissions using the Global Warming Potential, or GWP, factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 2007, errata table 2012. HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components.

^d Market-based approach. Under the location-based approach, Scope 2 emissions were 3.747 million metric tons of CO₂ in 2018 and 3.552 million metric tons of CO₂ in 2019.

^e Includes sales to BASF Group companies; As a result, emissions reported under Scope 2 can be considered twice in some cases.

^f Emissions are reported separately from Scope 1 and Scope 2 in accordance with the Greenhouse Gas Protocol.

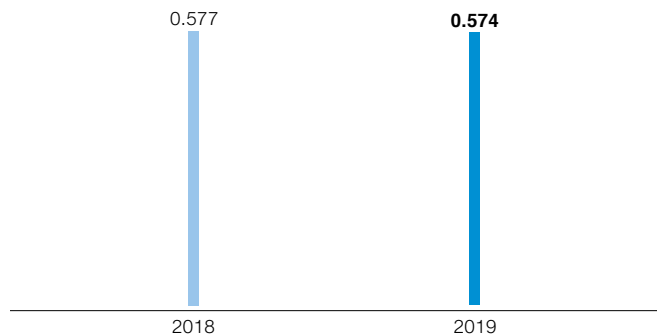
Greenhouse gas emissions from BASF operations (excluding sale of energy to third parties) compared with baseline 2018



Specific greenhouse gas emissions in 2019 amounted to 0.574 metric tons of CO₂ equivalents per metric ton of sales product,¹ 0.5% lower than in the previous year. Since 1990, we have been able to lower our overall greenhouse gas emissions from BASF operations by 49.9% and even reduce specific emissions by 75.0%.

Specific greenhouse gas emissions from BASF operations²

Metric tons of CO₂ equivalents per metric ton of sales product¹



By 2020, we want to have introduced certified energy management systems (DIN EN ISO 50001) at all relevant production sites.³ Together, these represent 90% of BASF's primary energy demand.

Energy supply of the BASF Group 2019

Electricity supply

Purchased **32%**

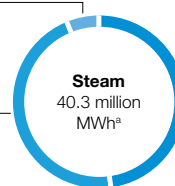
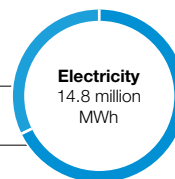
Internally generated **68%**

Steam supply

Purchased **6%**

Waste heat **46%**

Internally generated **48%**



Fossil and residual fuels used for own generation in power plants of the BASF Group

81.0% Natural gas
30.0 million MWh

0.2% Heating oil
0.1 million MWh

2.2% Coal
0.8 million MWh

16.6% Residual fuels
6.2 million MWh

Total: 37.1 million MWh

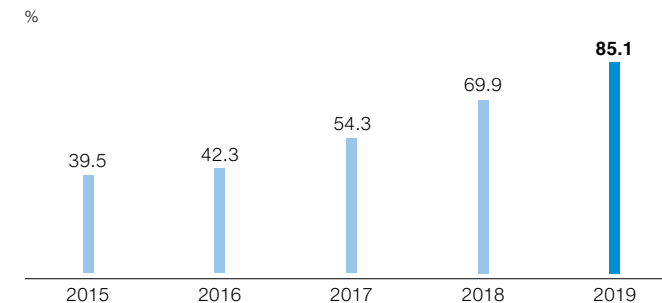
^a Conversion factor: 0.75 MWh per metric ton of steam

This is how we intend to identify and carry out improvements in energy efficiency, reducing not only greenhouse gas emissions and saving valuable energy resources, but also increasing our competitiveness.

The introduction and implementation of certified energy management systems is steered by a global working group. All energy efficiency measures are recorded and analyzed in a global database and made available to BASF sites as best practices. We are currently pursuing more than 200 measures to reduce energy consumption and increase competitiveness. Further sites across all regions were certified in accordance with ISO 50001 in 2019. These include the Verbund site in Kuantan, Malaysia, as well as another 18 sites in the United States, Brazil, Chile, China, India, Germany, France, the Netherlands, Belgium, Poland and Spain,

among other countries. At the end of 2019, 82 sites were certified worldwide, representing 85% of our primary energy demand.

Certified energy management systems (ISO 50001) at BASF Group sites worldwide, in terms of primary energy demand²



¹ Sales product volumes include sales between BASF Group companies; merchandise is not taken into account.

² We have changed the method used to calculate the relevant environmental indicators compared with the previous year. Further information can be found on page 116. The figures for 2018 have been adjusted according to the new method.

³ The selection of relevant sites is determined by the amount of primary energy used and local energy prices.

Additional key indicators for energy and climate protection in BASF operations^a

	2019	2018
Specific greenhouse gas emissions ^b (metric tons of CO ₂ equivalents per metric ton of sales product ^c)	0.574	0.577
Primary energy demand ^d (million MWh)	58.520	60.586
Energy efficiency (kilograms of sales product ^c per MWh)	598	626

^a We have changed the method used to calculate the relevant environmental indicators compared with the previous year. Further information can be found on page 116. The figures for 2018 have been adjusted according to the new method.

^b Scope 1 and Scope 2 (market-based) according to the GHG Protocol, excluding emissions from the generation of steam and electricity for sale to third parties, including offsetting.

^c Sales product volumes include sales between BASF Group companies; merchandise is not taken into account.

^d Primary energy used in BASF's plants as well as in the plants of our energy suppliers to cover energy demand for production processes

Energy supply and efficiency

Internal supply and Verbund system as important components of our energy efficiency strategy

Gas and steam turbines in combined heat and power plants enable us to fulfill more than 70% of the electricity demand of the BASF Group. Compared with separate methods of generating steam and electricity, we saved 12.4 million MWh of fossil fuels and prevented 2.5 million metric tons of carbon emissions in 2019. In 2019, internally generated power in the BASF Group had a carbon footprint of around 0.26 metric tons of CO₂ per MWh of electricity and was below the national grid factor at most BASF Group locations. The figure for purchased electricity in 2019 was around 0.46 metric tons of CO₂ per MWh (market-based approach). As part of our carbon management (see page 121), we therefore aim to reduce the carbon footprint of purchased electricity.

Energy saved in 2019 by the Verbund and combined heat and power generation

31.6 million MWh

The Verbund system is an important component of our energy efficiency strategy: Waste heat from one plant's production process is used as energy in other plants. In this way, the Verbund saved us around 19.2 million MWh in 2019, which translates to 3.9 million metric tons less CO₂ released into the environment. With combined power and steam generation as well as our optimized Energy Verbund, we were thus able to prevent a total of 6.4 million metric tons of carbon emissions in 2019.

We further improved the resource and energy consumption of our production in numerous projects around the world in 2019. At the Verbund site in Ludwigshafen, Germany, for example, we were able to save considerable amounts of steam and therefore primary energy with predictive, model-based process control systems at two production plants. Process improvements at many other sites have also led to savings in steam, electricity and fuel.

We also rely on locally available sources to supply our sites with energy. We are increasingly incorporating the use of renewable energies, especially purchasing electricity. Our research also contributes to increasing the efficiency of technologies for the use of renewable energy sources.

Carbon footprint and climate protection products

- Reporting on greenhouse gas emissions along the entire value chain
- Customers' use of BASF climate protection products avoids greenhouse gas emissions

BASF has published a comprehensive corporate carbon footprint since 2008. This reports on all greenhouse gas emissions along the value chain. It also shows, on the basis of selected climate protection products, the emissions avoided through the use of these products.

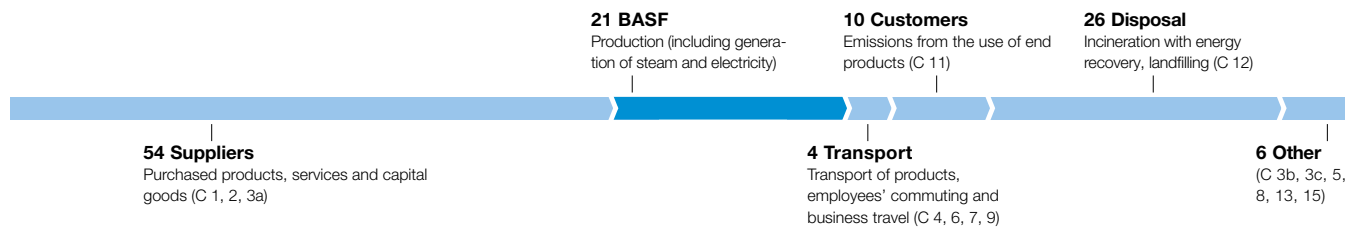
The greenhouse gas emissions arising before and after BASF's activities in the value chain (Scope 3 in accordance with the Greenhouse Gas Protocol) amounted to around 100 million metric tons of CO₂ equivalents in 2019 (2018: 118 million metric tons of CO₂ equivalents). The significant decrease compared with the previous year is attributable to the deconsolidated oil and gas business, which is no longer included in the carbon footprint as of 2019. However, this decrease is partly offset by a new methodological approach to calculate the emissions from the disposal of our products. These emissions are estimated based on a closed carbon cycle, taking into account regional disposal methods.

Our climate protection products offer our customers solutions to avoid greenhouse gas emissions over their entire lifecycle as compared with reference products. The systematic analysis we conduct on our portfolio – Sustainable Solution Steering (see page 38) – rates the use of these Accelerator solutions as particularly good with respect to climate protection and energy.

Examples of Accelerator solutions are our expandable polystyrene granulates (EPS) Styropor® and Neopor®. Both products are used to insulate buildings and help to save heating energy and reduce carbon emissions. Neopor® contains particles of graphite. This

Greenhouse gas emissions along the BASF value chain in 2019^a

Million metric tons of CO₂ equivalents



^a According to Greenhouse Gas Protocol; Scope 1, 2 and 3; categories within Scope 3 are shown in parentheses. For more information on Scope 3 emissions reporting, see basf.com/corporate_carbon_footprint

enables the production of insulation boards with up to 20% better insulation performance than conventional EPS. Another polystyrene-based climate protection product is Styrodur®, an extruded rigid foam panel, which likewise offers optimum insulation performance and a wide range of potential applications, especially under high pressure.

An analysis shows that the volumes of Styropor®, Neopor® and Styrodur® sold in 2019 help our customers to save 62 million metric tons of CO₂ emissions over the entire lifecycles of these products when used to insulate existing buildings. This calculation is based on a lifecycle analysis that takes into account the production and disposal of the insulation materials and compares the energy consumption of a renovated building with that of an unrenovated building over a period of 50 years. The calculation of avoided greenhouse gas emissions took into account the chemical industry standards of the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD). All three products also help to reduce carbon emissions in new buildings, where they have been used as standard for decades.

BASF also offers biomass balance (BMB) versions of Styropor®, Neopor® and Styrodur®. In accordance with an externally certified mass balancing method, 100% of the fossil raw materials used in the production of these BMB products are replaced by renewable raw materials such as bio-naphtha or biogas. This saves carbon emissions and fossil resources during the manufacturing process. Together with the German EPS insulation material manufacturer Bachl, we calculated in a lifecycle analysis that the use of renewable raw materials reduces carbon emissions from the production of Neopor® BMB insulation boards by 66% compared with conventionally produced Neopor® boards (based on one cubic meter of insulation board).

Other innovative climate protection products for thermal insulation applications include BASF's new high-performance polyurethane-based and mineral-based insulation materials, SLENTITE® and SLENTEX®, which offer even more efficient insulation at lower thicknesses compared with conventional materials.

[For more information on the sustainability analysis of our product portfolio, see pages 38 to 39](#)

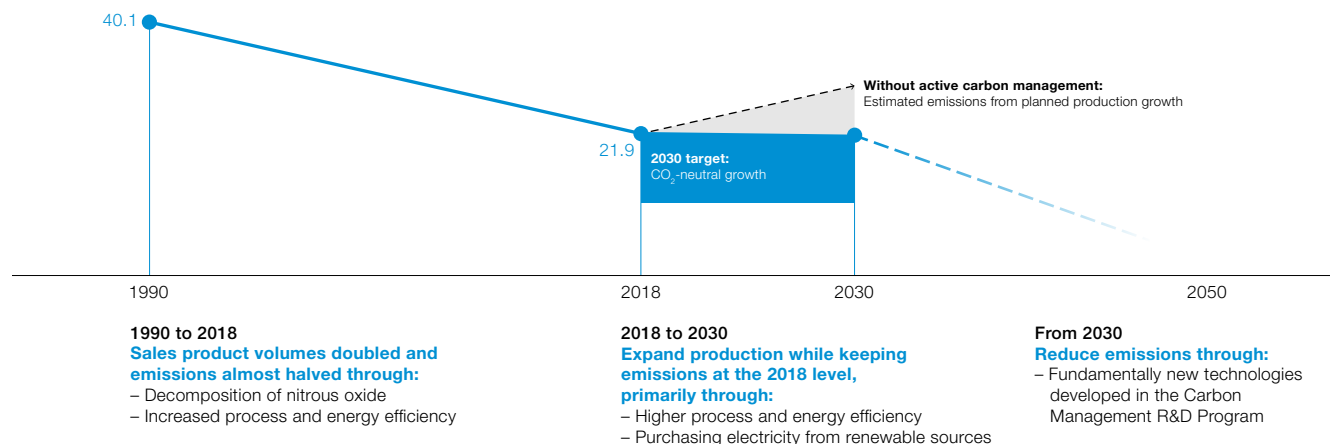
[For more information on our emissions reporting, see basf.com/corporate_carbon_footprint](https://basf.com/corporate_carbon_footprint)

Climate protection with carbon management

Climate protection is firmly embedded in our corporate purpose, “We create chemistry for a sustainable future,” and is a cornerstone of our strategy. We are committed to the Paris Climate Agreement and its goal of limiting global warming to below 2 degrees Celsius. Our innovative climate protection products, such as insulation materials for buildings or battery materials for electromobility play a role here. We are also continually working to reduce our own carbon emissions. We have already almost halved our carbon emissions since 1990 through improvements to processes and methods – while simultaneously doubling sales product volumes.

Development of the BASF Group’s CO₂ emissions

Million metric tons of CO₂ equivalents



Reconciling climate protection and growth

Until 2030, we want to continue to grow our production without adding further CO₂ emissions.¹ Global activities to reach this climate protection target and reduce our greenhouse gas emissions over the long term are bundled in our carbon management. We have adopted a three-pronged approach: We aim to increase production and process efficiency, purchase electricity from renewable sources, and develop completely new low-emission technologies and processes. We want to use these to significantly reduce CO₂ emissions from 2030 onward.

way, reduce CO₂ emissions. For example, our new acetylene plant in Ludwigshafen, Germany (annual capacity: 90,000 metric tons) uses around 10% less natural gas per metric ton of end product compared with the old plant (see page 64).

CO₂ prevented by the Verbund and combined heat and power generation in 2019

6.4 million metric tons

Further improving process and energy efficiency

We aim to make our plants even more efficient and further optimize resource use in our processes. That is why we have increased our budget for operational excellence from €250 million to €400 million annually, among other measures. Part of this goes toward initiatives to reduce our greenhouse gas emissions. When constructing new plants or developing new sites, we draw on our expertise and innovative technologies to optimize the use of raw materials and in this

BASF's Verbund concept also plays a key role in increasing efficiency. It helps us to realize synergies across all segments and to efficiently steer value chains. Intelligently linking production and energy demand enables us to use fewer resources and reduce our emissions. Together, combined power and steam generation and our continuously enhanced Energy Verbund prevented a total of 6.4 million metric tons of carbon emissions in 2019 (see page 119). That is why we will continue to invest in the creation and optimization of Verbund structures and drive forward the consolidation of production at highly efficient sites.

¹ The goal includes other greenhouse gas emissions according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents.

Increasing use of renewable energy

As part of carbon management, we aim to increase the proportion of renewable energy in the electricity purchased for our production sites. Twenty-three sites in Europe, North America and Asia already source emission-free electricity from suppliers.

Number of sites partially or fully powered
by emission-free electricity in 2019

23

Together with our partners, we are also conducting a feasibility study to evaluate a pioneering supply concept for our planned chemical complex in Mundra, India. The aim is for the new site (scheduled production startup: 2024) to be entirely supplied with renewable energy, primarily from an attached wind and solar park. If realized, it would, to our knowledge, be the world's first petrochemical site with carbon-neutral energy supply (see page 65).

Pioneering research and development program

Most of our production processes and methods are already highly optimized, making further improvements to existing plants an increasingly difficult task. As a result, completely new technologies are needed to avoid greenhouse gas emissions over the long term and on a large scale. This is where our Carbon Management R&D Program comes in. The focus here is on the production of basic chemicals, which are used in many products and innovations and account for around 70% of the chemical industry's greenhouse gas emissions.

As part of this R&D program, we are developing an innovative, climate-friendly production process for hydrogen (methane pyrolysis) together with partners from academia and industry in a joint project sponsored by the German Federal Ministry of Education and Research, to name one example. Hydrogen is used as a reactant in many chemical processes, such as ammonia synthesis. However, the processes currently used to produce hydrogen from natural gas, such as steam reforming, are extremely CO₂ emission-intensive. In

methane pyrolysis, by contrast, natural gas is split directly into its components hydrogen and carbon. The resulting ultra-pure solid carbon could be used to produce aluminum, for example. Methane pyrolysis requires less electricity than the alternative method of producing hydrogen using water electrolysis. If this energy comes from renewable sources, this could make the hydrogen production process carbon-free.

Methanol could also be produced without CO₂ emissions in the future. Methanol is a starting material for the production of products such as formaldehyde or acetic acid and also serves as a source of energy. In 2019, an international patent (PCT) was filed for a climate-friendly production process for methanol that BASF developed as part of the Carbon Management R&D Program. In this new process, the waste gas streams from methanol synthesis are incinerated and the resulting CO₂ isolated and fed back into the process as feed-stock. The syngas needed is also produced CO₂-free, for example through partial oxidation, and thus all of the carbon from the raw material ends up in the methanol. Unlike in conventional methods, this process does not produce any greenhouse gas emissions.

Share of emissions produced by
the European chemical industry
attributable to the 10 most
energy-intensive basic chemicals

~70%

Other examples from our Carbon Management R&D Program include dry reforming methane to produce syngas as the basis for the production of olefins with a significantly lower carbon footprint (see page 33), the development of an electrical heating concept for our steam crackers, or using CO₂ to produce sodium acrylate (see page 34). We are optimistic that these climate-friendly production processes can be implemented from 2030 onward.

Creating the framework for the transformation



The transition toward a climate-friendly society remains a fundamental challenge of the 21st century. There are many ways in which the chemical industry can be part of the solution. The political and regulatory environment is also crucial to the development and successful application of completely new production processes on an industrial scale. Demand for electricity from renewable sources will increase sharply with innovative, more climate-friendly technologies. At the Ludwigshafen site in Germany alone, we would need to roughly triple or quadruple our current electricity use (2019: 6.2 TWh) to fully implement new, low-carbon electricity-based production processes like the ones being developed in our Carbon Management R&D Program. As well as its availability, the price of green power is also a critical success factor. Sectors like the chemical industry, which compete in an international market, cannot pass on the additional costs caused by low-carbon technologies to their customers until a comparable carbon pricing mechanism exists globally – or at least at G20 level. Until then, governments must implement measures to ensure the competitiveness of climate-friendly processes.

Air and soil



We want to further reduce emissions to air from production, prevent waste and protect the soil. We have set ourselves standards for doing so in global directives. If no recovery options are available for waste, we dispose of it in a proper and environmentally responsible manner.

Strategy

- Regular monitoring of emissions to air
- Professional disposal of hazardous waste

Regular monitoring of our emissions to air is a part of our environmental management. Aside from greenhouse gases, we also measure emissions of other pollutants into the atmosphere. Our climate protection activities are based on a comprehensive analysis of our emissions.

Our Raw Material Verbund helps us prevent or reduce waste. We regularly carry out audits to inspect external waste disposal companies to ensure that waste is properly disposed of. In this way, we also contribute to preventive soil protection and keep today's waste from becoming tomorrow's contamination. If soil and groundwater contamination occurs at active or former BASF sites, proper remediation measures are reviewed based on prevailing legal and current technical standards, and undertaken as necessary.

Emissions to air

- Emissions to air slightly lower

Absolute emissions of air pollutants from our chemical plants amounted to 25,130 metric tons in 2019.¹ Emissions of ozone-depleting substances as defined by the Montreal Protocol totaled

28 metric tons in 2019 (2018: 19 metric tons). Emissions of heavy metals² in 2019 amounted to 2 metric tons (2018: 2 metric tons).

Our product portfolio contains a variety of catalysts used in the automotive sector and in industry to reduce the emission of air pollutants.

Emissions to air

Metric tons	2019	2018 ¹
Air pollutants from BASF operations		
CO (carbon monoxide)	3,530	3,778
NO _x (total nitrogen oxides)	10,534	11,130
NM VOC (nonmethane volatile organic compounds)	4,496	5,391
SO _x (total sulfur oxides)	1,982	1,926
Dust	2,410	2,377
NH ₃ (ammonia) and other inorganic substances	2,178	2,264
Total	25,130	26,866

Management of waste and contaminated sites

- Total waste volume slightly higher
- Systematic management of contaminated sites

We aim to avoid waste as far as possible. If waste is unavoidable, we review the options for recycling or energy recovery in terms of a circular economy. BASF's Verbund structures are used for efficient waste management. As of 2019, the BASF Group's waste footprint also includes all materials from construction activities, which are usually recycled. Until 2018, only hazardous waste from construction activities was reported. Accordingly, the total waste reported in 2019 is higher than in 2018.

Waste generation in the BASF Group

Million metric tons	2019	2018 ¹
Total waste generation	2.34	2.19
Waste recovered	0.99	0.80
Recycled	0.45	0.28
Thermally recovered	0.54	0.52
Waste disposed of	1.35	1.39
In underground landfills	0.19	0.17
In surface landfills	0.38	0.46
Through incineration	0.78	0.76
Classification of waste for disposal^a		
Nonhazardous waste	0.43	0.45
Hazardous waste	0.92	0.94
Transported hazardous waste	0.28	0.28

^a The classification of waste into hazardous and nonhazardous waste is performed according to local regulations.

We set out global standards for managing contaminated sites. A worldwide network of experts ensures their proper implementation. We develop remediation solutions that balance nature conservation, climate protection concerns, costs and social responsibility. This means making customized decisions on a case-by-case basis, founded on the legal framework and current technological possibilities. Relevant sites are documented in a contaminated site database. Ongoing remediation work around the world continued on schedule and planning was concluded on future remediation projects.

For more information on provisions for environmental protection, see the Notes to the Consolidated Financial Statements on pages 230 and 260

¹ As part of the implementation of BASF's strategy, we have made changes to how environmental indicators are reported. For ease of comparison, the 2018 figures have been adjusted according to the new requirements (see page 6).

² Heavy metals are included in the figure for dust (see the table "Emissions to air").

Water

SUPPLIERS

BASF

CUSTOMERS

Water is of fundamental importance in chemical production. It is used as a coolant, solvent and cleaning agent, as well as to make our products. We are committed to its responsible use along the entire value chain and especially in our production sites' water catchment areas. We have set ourselves a global goal for sustainable water management.

Strategy

■ Sustainable water management

We aim to use water as sparingly as possible and further reduce emissions to water. To do so, we have set out a Group directive with globally applicable standards.

We are introducing sustainable water management at all relevant production sites. These include our major Verbund sites as well as the sites in water stress areas. We have expanded our definition of water stress areas to all areas in which more than 40% of available water is used by industry, household and agriculture (previous definition: more than 60% of available water). Sustainable water management considers the quantitative, qualitative and social aspects of water use. We want to identify where we can improve at our sites, and use as little water as possible, especially in water stress areas. We offer our customers solutions that help purify water and use it more efficiently while minimizing pollution.

In order to ensure transparency in our reporting on water, we once again took part in CDP reporting in 2019. BASF achieved the top grade of A and thus Leadership status for sustainable water management. CDP's evaluation of sustainable water management includes how transparently companies report on their water management activities and what they do to reduce risks, such as water scarcity. CDP also assesses the extent to which product developments – even at the customers of the companies under evaluation – can contribute to sustainable water management.

For more information on the CDP water survey, see basf.com/en/cdp

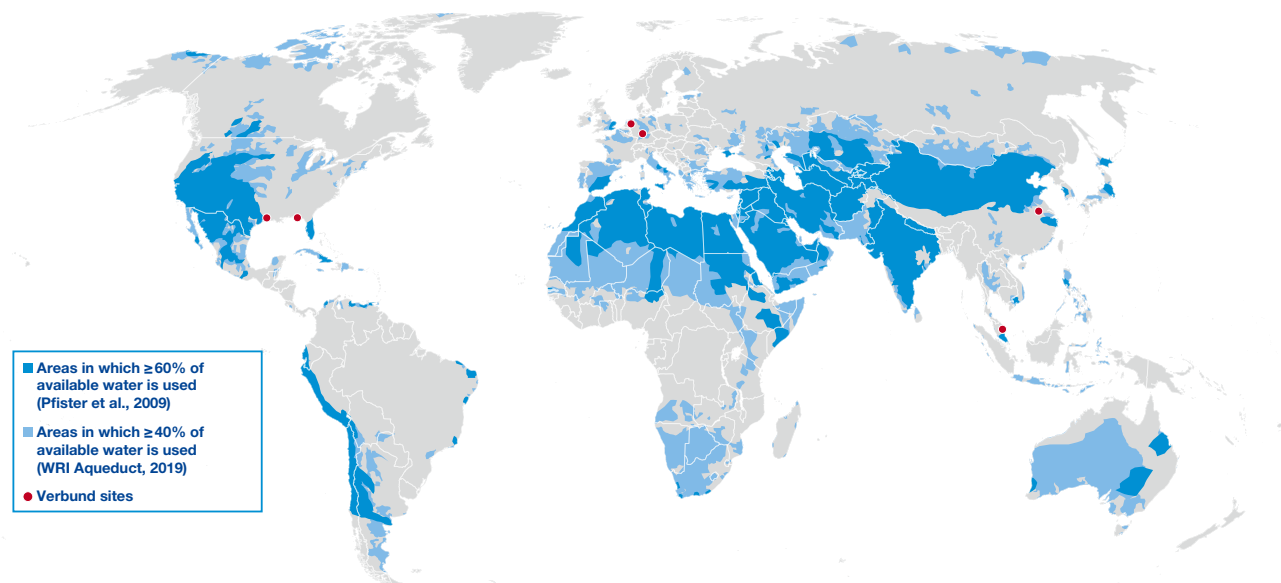
Global goal and measures

Our goal is to introduce sustainable water management at all production sites in water stress areas¹ and at our major Verbund sites by 2030, covering 93% of BASF's total water abstraction.² We achieved 35.8% of this target in 2019 (2018: 50.0%).¹ In 2019, BASF introduced sustainable water management at eight sites.

2030 target

Introduction of sustainable water management at all production sites in water stress areas and at all Verbund sites

Water stress areas around the world



¹ From 2019 onward, we have expanded our definition of water stress areas to regions in which more than 40% of available water is used by industry, household and agriculture. The definition is based on Aqueduct 3.0. In addition, our water target continues to take into account the sites that we identified as water stress sites in accordance with Pfister et al. (2009) prior to 2019, as well as the Verbund sites. This significantly increases the number of sites included in the water target and reduces the previous implementation level of BASF's water target accordingly.

² As part of the implementation of BASF's strategy, we have made changes to how environmental indicators are reported. For ease of comparison, the 2018 figures have been adjusted according to the new requirements (see page 6).

We pursue our goal by applying the European Water Stewardship standard, which rests on four principles: sustainable water abstraction, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes. We are also a member of the global organization Alliance for Water Stewardship.

Water balance

■ Using water responsibly

Our water usage totaled 1,717 million cubic meters in 2019 (2018: 1,743).¹ This demand was covered for the most part by surface water, such as rivers and lakes. At some sites, we use alternative sources such as treated municipal wastewater, brackish water or seawater.

We predominantly use water for cooling purposes (86%), after which we recirculate it back to our supply sources. We reduce our water use by recirculating as much water as possible. To do this, we use recooling plants that allow water to be reused several times.

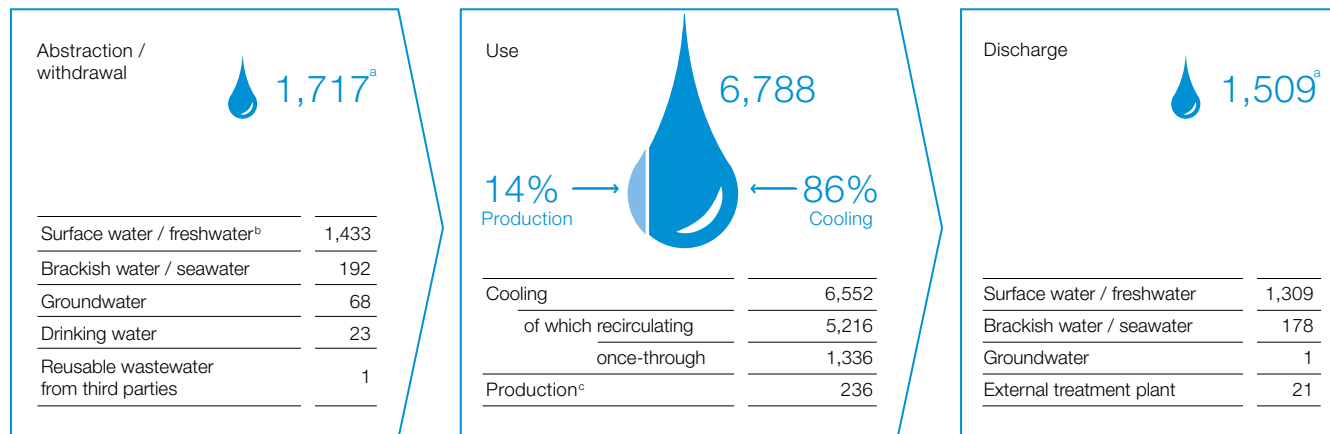
The water consumption of the BASF Group describes the amount of water that is no longer available to other users. Consumption is mainly attributable to the evaporation of water during closed-circuit cooling. Water consumption in 2019 amounted to around 61 million cubic meters (2018: 70).

In 2019, around 28% of our production sites were located in water stress areas.² These accounted for 1% of BASF's total water abstraction. Water consumption in water stress areas (as defined by Aqeduct 3.0) accounted for around 14% of our total water consumption and was primarily attributable to evaporation in cooling processes.

The supply, treatment, transportation and recooling of water is associated with a considerable energy demand. We are constantly

Water in the BASF Group 2019

Million cubic meters per year



^a The difference between the volume of water drawn and the volume discharged is primarily attributable to evaporation losses during closed-circuit cooling and limited accuracy in measuring water discharge.

^b Including rainwater (0.5 million cubic meters)

^c Total from production processes, graywater, rinsing and cleaning in production

working to optimize our energy consumption and the amount of water we use, and to adapt to the needs of our business and the environment.

Emissions to water

■ Emissions at prior-year level

A total of 1,509 million cubic meters of water were discharged from BASF production sites in 2019,¹ including 173 million cubic meters of treated wastewater from production. Emissions of nitrogen to water amounted to 3,000 metric tons (2018: 3,100). Around 12,100 metric tons of organic substances were emitted in wastewater (2018: 12,600). Our wastewater contained 25 metric tons of heavy metals (2018: 23). Phosphorus emissions amounted to 260 metric tons (2018: 220 metric tons). Our wastewater is treated through different methods depending on the type and degree of

contamination – including biological processes, oxidation, membrane technologies, precipitation or adsorption.

In order to avoid unanticipated emissions and the pollution of surface or groundwater, we create water protection strategies for our production sites. This is mandatory for all production plants as part of the Responsible Care® initiative. The wastewater protection plans involve evaluating wastewater in terms of risk and drawing up suitable monitoring approaches. We use audits to check that these measures are being implemented and complied with.

For more information, see basf.com/water

¹ As part of the implementation of BASF's strategy, we have made changes to how environmental indicators are reported. For ease of comparison, the 2018 figures have been adjusted according to the new requirements (see page 6).
² To determine the percentage figure for water abstraction and water consumption, sites in water stress areas are identified using Aqeduct 3.0.

Employees

SUPPLIERS

BASF

CUSTOMERS

Our employees make a significant contribution to BASF's long-term success. We want to attract and retain talented people for our company and support them in their development. To do so, we cultivate a working environment that inspires and connects people. It is founded on inclusive leadership based on mutual trust, respect and dedication to top performance.

117,628

employees around the world

Employee engagement and leadership impact

on center stage

Strategy

- We are committed to valuing and treating people with respect, and fostering an inspiring working environment

Our employees are key to the successful implementation of BASF's strategy. We are convinced of the value of excellent employees, leaders and working conditions, and strive to give our employees the tools and skills necessary to be able to offer our customers products and services with an even greater level of differentiation and customization. Our new corporate strategy promotes a working atmosphere based on mutual trust, in which employees are given the space to optimally develop their individual talents and potential.

This positions us to meet the challenges of an increasingly rapidly changing environment, demographic change and the digital workplace. In everything we do, we are committed to complying with internationally recognized labor and social standards. We want our working conditions to be a motor for innovation, and one way of achieving this is through inclusion of diversity. Lifelong learning and individual employee development lay the foundation for this. Compensation and benefits as well as offerings to balance personal and professional life complete our attractive total offer package. We track our employer rankings so that we can continue to attract talented people to the company in the future. Our employees play an important role here as ambassadors for BASF.]

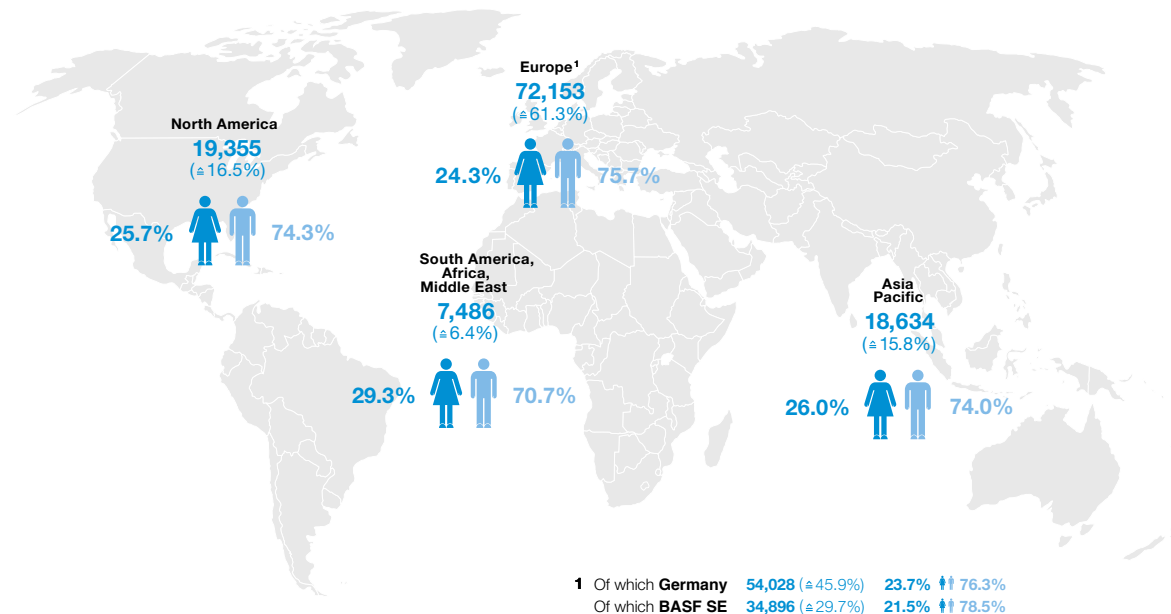
Number of employees

As of December 31, 2019, the number of employees decreased to 117,628 employees compared with 122,404 employees as of December 31, 2018. That includes 6,964 employees in the disposal group for the construction chemicals business as of December 31, 2019 (December 31, 2018: 2,017 employees in the disposal group for the oil and gas business). We employed 3,161 apprentices¹ (2018: 3,174). 2,606 employees were on temporary contracts (of which 44.0% were women).

Of material significance to the decrease in the number of employees were the merger of the oil and gas businesses of Wintershall and

BASF Group employees by region

(Total: 117,628, of which 25.1% women, as of December 31, 2019)



¹ At BASF, the apprenticeship program trains students for technical, scientific and business vocations as well as for trade and craft professions.

DEA in the joint venture Wintershall Dea, as well as the sale of the paper and water chemicals business. As a result, the number of employees decreased by more than 3,000 employees.

Employee engagement

- Global employee survey conducted in 2019
- Engagement index of 79%

BASF can rely on the engagement of its employees. Employee engagement is shown by, for example, a passion for the job, a dedication to top performance and a commitment to BASF. Global employee surveys and pulse checks are an established feedback tool in the BASF Group, and are used to actively involve employees in shaping their working environment. The results are communicated to employees, the Board of Executive Directors and the Supervisory Board. We have performed regular global employee surveys since 2008. We aim to keep the employee engagement determined by these surveys at a high level and increase it even further as far as possible. As part of the BASF strategy, we therefore set ourselves the following goal in 2018: More than 80% of our employees feel that at BASF, they can thrive and perform at their best. We regularly calculate employee engagement level as an index score based on five questions on set topics in our employee surveys. Overall, more than 71,000 employees participated in this year's survey, representing 66% of survey recipients.¹

Our 2019 employee survey showed an engagement index of 79%. Despite significant challenges associated with restructuring measures, this score is already close to the target we set ourselves. We continue to aim to increase this score to over 80%.

We support our leaders with a range of follow-up measures to decentrally address the individual action areas and in this way, help further strengthen employee engagement together with their employees.

What we expect from our leaders

- Leaders as role models

Our leaders and their teams should make a sustainable contribution to BASF's success and to safeguarding its future. This is why we want to strengthen the impact of our leadership. We understand impactful leadership as leaders that serve as role models by having a positive influence on the engagement and development of their employees and developing and implementing business strategies in line with our corporate values. These expectations are part of the standard global nomination criteria for leadership candidates. Our leadership culture is founded on a global Competency Model, which sets out specific behavioral standards based on our corporate values. We offer our leaders a wide variety of learning and development opportunities for each phase of their career, as well as various formats that enable them to learn from one another and external trainers. Global, regional and local offerings are optimally coordinated. We aim to develop leaders who lead their teams with optimism, empathy and trust, and in this way, create a competitive advantage for BASF. Regular feedback plays an important role in the development of leaders. That is why in 2019, we developed and implemented FEEDback&forward, a comprehensive feedback program for all senior executives.² FEEDback&forward will be rolled out Group-wide from 2020 as an annual tool for leaders to reflect on their own leadership skills (see box on the right).



Dialog and self-reflection with FEEDback&forward

Our new corporate strategy proactively addresses the challenges of tomorrow. How effectively we develop our resources and continually scrutinize existing practices is crucial to our success. This includes our leadership culture. FEEDback&forward gives all of our senior executives² direct, regular feedback from their employees on their leadership skills. The questionnaire focuses on behaviors like empathy or the ability to make difficult decisions and approach change positively. Employees can also report back to their leaders which leadership behaviors they want in the future. In this way, FEEDback&forward promotes regular and open dialog between employees and their leaders, and encourages leaders to reflect on themselves and their own leadership skills and drive forward change together with their employees. This fosters a culture of continual self-reflection and personal development.

¹ Scope of employees surveyed goes beyond the scope of consolidation presented on page 6. However, there are exceptions for companies that represent joint ventures and joint operations, as well as companies held for sale.

² The term "senior executives" refers to leadership levels 1 to 4, whereby level 1 denotes the Board of Executive Directors. In addition, individual employees can attain senior executive status by virtue of special expertise.

Inclusion of diversity

- **Fostering diversity is part of our company culture**
- **Target for proportion of women in leadership positions increased**

The global character of our markets translates into different customer requirements – and we want to reflect this diversity among our employees, too. For us, diversity means, among other things, having people from different backgrounds working at our company who can draw on their individual perspectives and skills to grow our business. This diversity is important to us because it enables our employees to better meet our customers' needs. By valuing and promoting employee diversity, we boost our teams' performance and power of innovation, and increase creativity, motivation and each and every individual's identification with the company.

Promoting and valuing diversity across all hierarchical levels is an integral part of our strategy and is also embedded in our corporate values. BASF strives to foster a working environment based on mutual respect, trust and appreciation. This is enshrined in our global Competency Model, which provides a framework for our employees and leaders. The inclusion of diversity is anchored in this model as one of the behaviors expected of employees and leaders.

Our leaders play an important role in its implementation. We support them by integrating topics such as inclusive leadership into our leadership development courses. Special seminars and training events are held to sensitize leaders to issues such as unconscious bias. This enables them to remain as objective as possible when making personnel decisions, for example, to avoid unconscious biases in favor of or against candidates with certain characteristics or views.

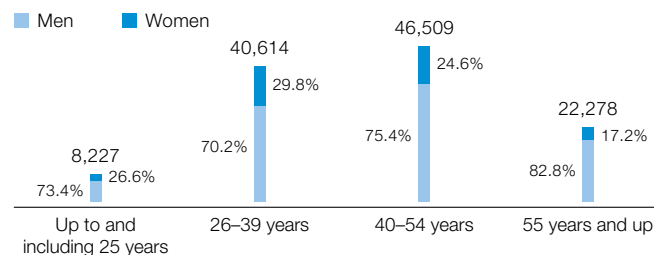
BASF is one of approximately 150 companies that support the United Nations Global LGBTI (lesbian, gay, bi, trans and intersex)

Standards of Conduct for business and has done so since 2018. The U.N. recommendations show the many opportunities companies have to contribute to positive social change. As part of pride month, employees promoted openness, acceptance and tolerance with campaigns at various sites around the world.

Diversity also relates to the company's demographic profile, which varies widely by region within the BASF Group. Our aim is to create a suitable framework to help maintain the employability of our personnel at all stages of life and ensure the availability of qualified employees over the long term. Mixed-age teams also benefit from the combination of different skills and perspectives, for example, by bringing together knowledge of digital technologies with many years of experience and process expertise.

BASF Group employee age structure

(Total: 117,628, of which 25.1% women, as of December 31, 2019)



We also promote diversity in leadership development. Since 2015, BASF has set itself global quantitative goals for increasing the percentage of women in leadership positions. Our target was to increase this ratio to 22-24% worldwide by 2021. In the BASF Group, the global proportion of female leaders with disciplinary responsibility was 23.0% at the end of 2019 (2018: 21.7%). As such, we met this target in 2019. To further strengthen diversity, BASF is setting a new, more ambitious target. By 2030, we aim to increase the proportion of women in leadership positions with disciplinary

responsibility to 30%. We have thus once again set ourselves an ambitious goal that we want to achieve through various measures.

2030 target

Proportion of women in leadership positions with disciplinary responsibility

30%

For instance, BASF has a wide range of initiatives to support couples with equal career potential. As part of overseas delegation, for example, we provide comprehensive coaching and, since 2019, a platform with offers for the partners of delegated employees. This bundles offerings from several companies and makes it easier to find a suitable position abroad. In addition, BASF supports future leaders with individual mentoring and training programs tailored to the needs of different phases of life.

BASF has been a member of the Chefsache initiative since 2016, a network of leaders from industry, academia, the public sector and media. The initiative aims to initiate social change such as increasing the percentage of women in leadership positions in Germany.

Leaders and professionals in the BASF Group

	December 31, 2019	Of which women (%)
(Senior) executives ^a	9,522	23.0
Professionals ^b	40,290	30.7

^a Employees with disciplinary leadership responsibilities

^b Specialists without disciplinary leadership responsibilities

For more information on diversity in the Board of Executive Directors and the Supervisory Board, see page 150 onward

For more information on health protection, see page 111

For more information, see basf.com/diversity

Competition for talent

- Positioning as an attractive employer
- Addressing specific target groups through social media and online marketing

Attracting and retaining the best employees is crucial to our success. Having an attractive and compelling total offer package for employees is becoming increasingly important given the strong global competition for the best qualified employees and leaders. This is why we are constantly working on measures to increase BASF's appeal in the global labor markets. Target group-specific campaigns focus on sustainability, digital ways of working and innovation for the future – reflecting our strategic action areas and key labor market trends.

We are increasingly using digital platforms such as our country-specific career websites as well as global and regional social networks to reach potential candidates. This enables us to address specific target groups. In 2019, we expanded our social media presence with a global career channel on Instagram to give younger audiences in particular insights into employee stories and offer another communication platform.

One focus is on the recruitment of digital talents. We have a dedicated global career website for digital talents to strengthen our position among this group. In addition, we launched a chatbot in 2019 to provide support on our career website and answer questions about the application process at any time of day or night. BASF introduced a digital talent network to help its employees actively shape the digital transformation. This online platform aims to foster dialog around digital projects and ideas across the company and improve cross-team and cross-unit cooperation. Another focus of our activities is attracting talented female recruits. In 2019, we held the first X-Days event in Germany, for instance. We invited female students and PhD candidates in the natural sciences to find out

more about BASF and digital career opportunities, and network with female leaders.

We once again achieved high scores in a number of employer rankings in 2019. For example, in a study conducted by Universum, BASF was again selected by engineering and IT students as one of the 50 most attractive employers in the world. In North America, DiversityInc named BASF as one of the top 50 companies for diversity in recruiting for the seventh consecutive year. In Asia, Top Employer recognized BASF China as one of the best employers for the tenth time in succession. In South America, BASF was recognized as one of the top employers in the Brazilian chemical industry by local human resources magazine *Você S/A*.

The BASF Group hired 8,026 new employees in 2019. The percentage of employees who resigned during their first three years of employment – the early turnover rate – was 1.4% worldwide in 2019. This turnover rate was 0.7% in Europe, 2.1% in North America, 2.8% in Asia Pacific and 2.0% in South America, Africa, Middle East. Our early turnover rate is therefore at a desirable low level.

BASF Group new hires in 2019

	December 31, 2019	Of which women (%)
Europe	4,418	26.5
North America	1,665	29.5
Asia Pacific	1,376	32.3
South America, Africa, Middle East	567	38.3
Total	8,026	28.9

As of December 31, 2019, the BASF Group was training 3,161 people in 15 countries and around 50 occupations. We spent a total of around €113 million on vocational training in 2019.

For more information, see basf.com/apprenticeship

Learning and development

- Life-long learning concept
- Focus on virtual learning and digitalization

Learning and development are essential success factors for a strong company culture. The skills and competencies of our employees are critical for profitable growth and lasting success. For this reason, we want to further modernize our learning culture and step up our efforts to promote lifelong, self-directed learning. Employee development at BASF is guided by the belief that talent is in everyone. This means that development opportunities and support are open to all employees. In our understanding, there is more to development than a promotion or a job change – it encompasses the development of personal experience and abilities.

In regular development meetings, which are held as part of our annual employee dialogs, employees outline ideas for their individual development together with their leaders and determine specific measures for further training and development, which focus on personal and professional competencies. Our learning activities follow the “70-20-10” philosophy: We apply the elements “learning from experience” (70%), “learning from others” (20%) and “learning through courses and media” (10%). Our learning and development offerings cover a range of learning goals: Starting a career, expanding knowledge, personal growth and leadership development.

Digital learning formats are playing an ever-increasing role in our development offerings. In 2019, we expanded our global digital learning platform with the addition of an independent learning module. This gives employees a wide range of personalized learning recommendations and special learning paths on diverse topics. In addition, all employees have access to a continuously growing online library with professional resources on leadership, personal development and business. These digital offerings enable employees to take responsibility for their own professional development and

promote knowledge transfer across BASF as a whole. We launched the #liveitleadit initiative in 2019 to harness the opportunities of digital transformation for BASF. Ten modules on different aspects of leadership in the digital age give leaders inspiration for their work, including on agility or leading in a data-driven world.

In addition, more and more academies in the divisions and service units, which teach specific professional content, offer virtual training. We have offered virtual presence training since 2018, which gives all employees the opportunity to attend professional development courses via digital communication channels such as virtual meetings.

Compensation and benefits

- **Compensation based on employee's position and individual performance as well as company's success**
- **ROCE determines variable compensation**

We want to attract engaged and qualified employees, retain them and motivate them to achieve top performance with an attractive package including market-oriented compensation, individual development opportunities and a good working environment so that they contribute to the company's long-term success. Our employees' compensation is based on global compensation principles according to position, market and performance. As a rule, compensation comprises fixed and variable components as well as benefits that often exceed legal requirements. In many countries, these benefits include company pension benefits, supplementary health insurance and share programs. We regularly review our compensation systems at local and regional levels. We want our employees to contribute to the company's long-term success. This is why the compensation

granted to the vast majority of our employees includes variable compensation components, with which they participate in the success of the BASF Group as a whole and are recognized for their individual performance. The same principles basically apply for all employees worldwide. The amount of the variable component is determined by economic success as well as the employee's individual performance. We use the BASF Group's return on capital employed (ROCE) to measure economic success for the purposes of variable compensation. This links variable compensation to our ROCE target.¹ Individual performance is assessed as part of a globally consistent performance management process. In numerous Group companies, our "plus" share program ensures employees' long-term participation in the company's success through incentive shares. In 2019, for example, around 25,400 employees worldwide (2018: 25,600) participated in the "plus" share program. BASF offers senior executives the opportunity to participate in a share price-based compensation program, the long-term incentive (LTI) program. In 2019, 90% of the approximately 1,100 people eligible to participate in the LTI program worldwide did so, investing up to 30% of their variable compensation in BASF shares. From 2020 onward, the previous LTI program for senior executives will be replaced by a new program. The new program will incentivize the development of the total shareholder return, as well as the achievement of strategic growth, profitability and sustainability targets.

[For more information, see the Notes to the Consolidated Financial Statements from page 284 onward](#)

Personnel expenses

The BASF Group's expenses for wages and salaries, social security contributions and pensions and assistance in 2019 totaled €10,924 million (2018: €10,659 million). In 2019, this amount included personnel expenses from the disposal group for the construction chemicals business and proportionally for the oil and gas business in the amount of €557 million. By contrast, the amount in 2018 included personnel expenses from the disposal group for the oil and gas business in the amount of €276 million. The increase in personnel expenses was due primarily to higher expenses for the long-term incentive program, a higher level of wages and salaries and the higher average number of employees resulting from the acquisition of significant parts of Bayer's business. Offsetting factors were the merger of the oil and gas businesses of BASF and DEA in the joint venture Wintershall Dea, as well as the decrease in expenses for pension benefits due to plan curtailments.

BASF Group personnel expenses

Million €	2019	2018	+/-
Wages and salaries	8,825	8,470	4.2%
Social security contributions and assistance expenses	1,545	1,459	5.9%
Pension expenses	554	730	(24.1%)
Total personnel expenses	10,924	10,659	2.5%

¹ In calculating ROCE, adjustments are made for negative and positive special items resulting from acquisitions and divestitures (e.g., integration costs in connection with acquisitions and gains or losses from the divestiture of businesses) when these exceed a corridor of plus or minus 1% of the average cost of capital basis. An adjustment of the ROCE (in the first 12 months after closing) therefore only occurs in cases of exceptionally high special items resulting from acquisitions and divestitures.

Balancing personal and professional life

■ Wide range of offerings for different phases of life

Our identity as an employer includes our belief in supporting our employees in balancing their personal and professional lives. We want to strengthen their identification with the company and our position in the global competition for qualified personnel. To achieve this, we have a wide range of offerings aimed at employees in different phases of life that accommodate the growing demand for flexibility in when and where they work. BASF helps employees to adapt working hours and location to their personal circumstances with a wide range of options, including flexible working hours, part-time employment and mobile working.

Regional initiatives specifically address the needs of our employees at a local level. For example, we are expanding the number of flexible co-working spaces in the Rhine-Neckar region in Germany. Our Work-Life Management employee center in Ludwigshafen (LuMit) offers a number of services under one roof: childcare, fitness and health, social counseling and coaching. We provide employee assistance programs at sites in Germany and around the world to help employees overcome difficult life situations and restore and maintain their employability.

Dialog with employee representatives

Trust-based cooperation with employee representatives is an important component of our corporate culture. Our open and ongoing dialog lays the foundation for balancing the interests of the company and its employees, even in challenging situations. In the case of organizational changes or if restructuring leads to staff downsizing, for example, we involve employee representatives to develop socially responsible implementation measures at an early stage. Our actions are aligned with the respective legal regulations and the agreements reached, as well as operational considerations. In 2019, this happened in connection with the agreed sale of the pigments business and the construction chemicals business, subject to the approval of the relevant competition authorities. The early, detailed presentation and explanation of the organizational changes in connection with the implementation of the new corporate strategy in 2019 was also a reflection of our trust-based cooperation.

By focusing our discussions on the local and regional situations, we aim to find tailored solutions to the different challenges and legal considerations for each site. The BASF Europa Betriebsrat (European Works Council) addresses cross-border matters in Europe. In South America, we foster dialog with the Diálogo Social.

For more information, see basf.com/employeerepresentation

International labor and social standards

■ Alignment with U.N. Guiding Principles on Business and Human Rights

We act responsibly toward our employees. Part of this is our voluntary commitment to respecting international labor and social standards, which we have embedded in our global Code of Conduct. This encompasses internationally recognized labor norms as stipulated in the United Nations' Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy of the International Labour Organization (ILO). BASF is committed to complying with these standards worldwide. We mainly approach our adherence to international labor and social standards using three elements: the Compliance Program (including external compliance hotlines), close dialog with our stakeholders (such as with employee representatives or international organizations) and the BASF guideline on compliance with international labor norms, which applies Group-wide. This guideline makes concrete what the human rights issues and international labor standards in our global Code of Conduct mean as these relate to our employees.

It forms the basis for our global management process: We monitor and evaluate whether the national law of all the countries in which BASF operates complies with international labor and social standards. If the national law contains no or lower requirements, actions plans are drawn up to successively close these gaps in a reasonable time frame. If conflicts with national law or practices arise, we strive to act in accordance with our values and internationally recognized principles without violating the law of the country concerned. As part of the management process, we regularly follow up on and document the results of the comparison between national law and our guideline, as well as measures to implement the guideline. This is our central due diligence system. Based on our guideline, our management process has been able to improve maternity leave at BASF companies with no statutory requirements or lower requirements

than in the BASF guideline, for example. Our voluntary commitment to respect international labor and social standards has been integrated into the existing corporate audit process since 2019. For this purpose, preparatory training was held for the auditors. As before, individual elements of the guideline are also reviewed as part of internal control processes such as Responsible Care audits in BASF Group companies.

 For more information on global standards, see page 29

For more information on our sustainability-related risk management, see page 36 onward

For more information on compliance, see page 157 onward

 For more information on labor and social standards, see basf.com/labor_social_standards

Forecast

Economic Environment in 2020

We expect economic uncertainty to be very high in 2020 and that global growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. The global economy is forecast to grow by 2.0%, considerably slower than in 2019 (+2.6%). In the European Union (E.U.),¹ economic growth in most member states should continue to soften. We also expect momentum to slow in the United States as the tax incentives expire and employment growth levels off. Growth in the emerging markets of Asia will presumably be much weaker due to a considerable slowdown in China in the first half of the year. We expect the South American economy to remain fragile and anticipate at best a weak recovery. Global chemical production is expected to grow by 1.2% in 2020, well below the 2019 level (+1.8%). For 2020, we expect an average oil price of \$60 per barrel for Brent crude and an exchange rate of \$1.15 per euro.

Trends in the global economy in 2020

- **Lower growth forecast for the E.U. and the United States**
- **Growth deceleration in China expected to continue**
- **Weak recovery in South America**

We expect growth momentum in the **E.U.** to continue to slow overall. We anticipate lower growth rates in Germany, France and Spain. For Italy, we are forecasting a slight decline in gross domestic product (GDP). Besides cyclical economic weakness, lower demand for European investment goods and vehicles in China will contribute to this development. In the United Kingdom, the uncertainty surrounding the nature and consequences of its departure from the E.U.

remains high, which will dampen investment activity. As a result, we expect a considerable slowdown in economic growth. Economic momentum in the eastern E.U. countries is also likely to slow, but should remain high compared with western Europe thanks to rising real incomes.

We expect a gradual easing of growth in the **United States**. Private consumption will presumably continue to be supported by solid employment figures and rising incomes but employment growth will trend downward. Industry investment dynamics should continue to decline as the initial impetus from the tax reform levels off and capacity utilization is often below average. The trade conflict with China is also expected to further weigh on growth since it is not currently expected that the additional tariffs introduced over the course of 2019 will be widely rolled back. This makes U.S. imports of intermediate inputs from China more expensive and reduces the ability of U.S. exporters to compete on price in China. Exporters will also have to contend with the effects of a continued strong U.S. dollar.

The **emerging markets of Asia** will presumably see much slower growth. We expect growth in demand and production in **China** to be much weaker than in the previous year due to the coronavirus outbreak. The resulting decline in China's import demand will also have a negative impact on the economies of its neighboring countries in Asia. Moreover, production restrictions in China may lead to interruptions in neighboring countries, since value chains are particularly closely interconnected in Asia. Against this background, we anticipate a marked growth deceleration in China to 4.5%. For India, we expect an unchanged, comparatively weak growth rate of below 5% in this environment. The corporate tax cuts taken in response should only start to take effect after a delay amid a challenging international environment.

We are forecasting flat GDP for **Japan**. Private consumption is likely to remain subdued after the consumption tax rate was raised in






October 2019. Exports and investment are not expected to provide any strong stimulus in a weak overall economic environment. However, the government has approved a package of fiscal measures to cushion the negative effects of the tax increase and avoid a slide into recession.

In **South America**, leading economic indicators point to ongoing recovery in Brazil. By contrast, the recession in Argentina is likely to continue. Overall, the forecast remains uncertain due to the social conflicts that have intensified significantly in several countries in the region. In addition, lower Chinese demand should have a negative impact on raw materials exporters in the region. We therefore only expect a weak recovery in macroeconomic activity.

¹ In the rest of this chapter, "E.U." refers to the E.U. 27 and the United Kingdom.






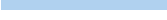
Outlook for gross domestic product 2020

Real change compared with previous year

World	2.0%	
European Union	0.9%	
United States	1.7%	
Emerging markets of Asia	4.2%	
Japan	0.0%	
South America	0.9%	

Trends in gross domestic product 2020–2022

Average annual real change

World	2.6%	
European Union	1.2%	
United States	1.8%	
Emerging markets of Asia	5.2%	
Japan	0.5%	
South America	2.4%	

Outlook for key customer industries

■ Slower growth expected in global industrial production

Overall, we expect global industrial growth to be weaker in 2020, at 1.2% (2019: +1.5%). In the advanced economies, we expect the slight decline in production to continue overall. In the emerging markets, we are forecasting significantly lower growth compared with the previous year.

We anticipate a downturn in the **transportation industry**¹ as a whole. We expect global automotive production to again decline, driven in particular by the coronavirus and the resulting production stoppages, as well as lower demand in China.

Consequently, we are forecasting a decline in production in the largest automotive market, China, as well as in Japan and India. Automotive production will likely continue to decline markedly in the E.U. as well: We anticipate a decrease in western Europe and a slight decline in the eastern E.U. countries and Russia. We are also forecasting a slight decrease in automotive production in North America and a recovery in South America after the recession in the previous year.

In the **energy and raw materials sector**, we expect a low growth rate given the weak overall momentum in the economy and industry. Production growth should be similar to the previous year in both the advanced economies and the emerging markets.

We expect growth in the **construction industry** to be at the prior-year level. Overall, construction activity should continue to outstrip growth in the manufacturing industry, supported by low interest rates, increasing urbanization and the demand for investment in energy and transportation infrastructure. We anticipate slightly slower construction growth in Europe. In the United States, we expect the downturn in the housing market to bottom out, with construction activity slightly below the previous year. For Asia, we expect construction growth to be lower than in the previous year but still considerably above the global average.

According to our forecasts, growth in **consumer goods production** will be more or less on a level with the previous year. We expect slightly higher growth in care products, roughly in line with global GDP growth.

Growth in the **electronics industry** will presumably be below the prior-year figure. The rapid technological progress in this sector, the resulting short product cycles and the advance of digitalization should lead to additional consumer spending and investment. However, growth perspectives for the electronics industry remain sub-

dued overall due to the central role played by China in global value chains.

We anticipate slightly slower growth in the **health and nutrition** sector. Growth in the food industry should weaken slightly in line with the more subdued global economic environment. By contrast, we expect stronger growth in the pharmaceutical industry compared with the previous year as a result of the coronavirus outbreak.

Under normal weather conditions, we expect slightly slower global growth in **agricultural production** in 2020. For Europe, we anticipate a sideways movement, as in the previous year. In the United States, agricultural production should increase slightly again following the weather-related production losses and the decline in soybean exports to China in the previous year. We also expect the trade agreement with China to provide tailwinds. This should however dampen agricultural production in South America. In any case, we expect lower growth here after the drought recovery effects in the previous year. The highest growth will presumably again be achieved in the emerging markets of Asia.

¹ The transportation industry includes the production of motor vehicles, motor vehicle parts and the construction of other vehicles (especially ships and boats, trains, air and spacecraft, and two-wheelers).

Outlook for the chemical industry

■ Global growth in chemical industry remains below average

Global chemical production (excluding pharmaceuticals) is expected to grow by 1.2% in 2020, much slower than in 2019. We anticipate a slight decline in the advanced economies (2020: -0.8%, 2019: -0.9%) and growth below the prior-year level in the emerging markets (2020: +2.4%, 2019: +3.5%).

In **China**, the world's largest chemical market, we are forecasting a significantly lower growth rate (2020: +3.0%, 2019: +4.7%). Weaker final demand and production stoppages in customer industries will likely have a significant negative impact on chemical growth in China. We do not expect that the drop in demand caused by the coronavirus outbreak will be able to be fully recouped over the course of the year. We assume here that the trade conflict with the United States does not intensify again.

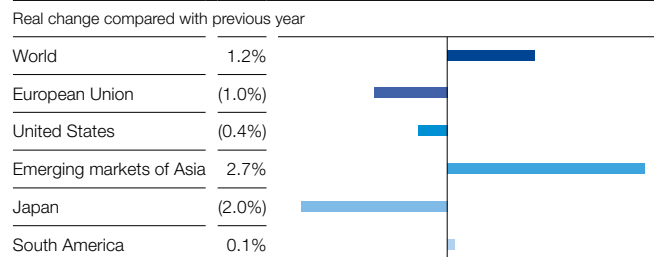
For the **E.U.**, we again anticipate a decline in chemical production. Due to the sharp drop in chemical production in the second half of 2019, production levels at the year-end were below the annual average. It is not likely that the recovery we are forecasting over the course of the year will be strong enough to achieve full-year volumes growth.

We expect a continued slight decline in chemical production in the **United States**. Growth in customer industries will presumably remain weak overall despite the slight recovery we anticipate in agriculture and the expected stabilization in the construction industry, which should support demand for chemicals.

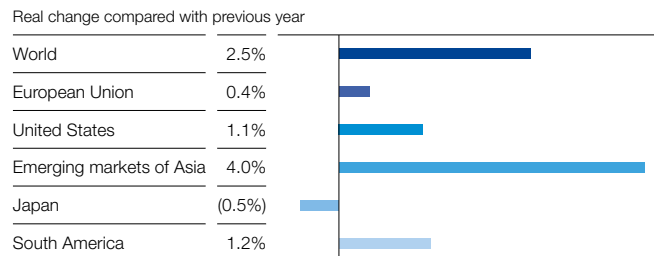
In **Japan**, we are forecasting a further decline in the chemical market amid a weak domestic economy and the slowing regional environment.

After declining in the previous year, we expect a stabilization in demand for chemicals in **South America**, driven mainly by a slight upturn in the Brazilian market.

Outlook for chemical production 2020 (excluding pharmaceuticals)



Trends in chemical production 2020–2022 (excluding pharmaceuticals)



Outlook 2020

For 2020, we expect global economic uncertainty to be very high and that growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. Consequently, the global economy is forecast to grow by 2.0%, considerably slower than in 2019 (+2.6%). Global chemical production is expected to expand by 1.2%, well below the 2019 level (1.8%). We anticipate an average oil price of \$60 for a barrel of Brent crude and an exchange rate of \$1.15 per euro. Despite the challenging environment characterized by a high level of uncertainty, we aim to increase our sales to between €60 billion and €63 billion (2019: €59,316 million). The BASF Group's income from operations (EBIT) before special items is expected to be between €4.2 billion and €4.8 billion (2019: €4,536 million). The return on capital employed (ROCE) should reach between 6.7% and 7.7% (2019: 7.7%) and thus be below the cost of capital percentage of 9%.

We expect growth in most of our customer industries. For the automotive industry, however, we anticipate a continued decline in production. Our outlook assumes that the trade conflict between the United States and its trading partners does not intensify, and that Brexit will not have any larger economic repercussions during the transition phase.

For more information on our expectations for the economic environment in 2020, see page 133 onward

For more information on our opportunities and risks, see page 139 onward

Sales, earnings and ROCE forecast for the BASF Group¹

- Sales growth to between €60 billion and €63 billion
- EBIT before special items of between €4.2 billion and €4.8 billion
- ROCE of between 6.7% and 7.7%

Our forecast for 2020 takes into account the agreement between BASF and an affiliate of Lone Star on the sale of BASF's construction chemicals business. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant competition authorities. Until closing, the income after taxes of the construction chemicals business will be presented in the income after taxes of BASF Group as a separate item ("Income after taxes from discontinued operations"); it will not be included in the sales or EBIT before special items of the BASF Group.

The agreement between BASF and DIC on the sale of BASF's global pigments business is likewise reflected in this outlook. The transaction is expected to close in the fourth quarter of 2020, subject to the approval of the relevant competition authorities. Until closing, the assets and liabilities to be divested will be presented in a disposal group in the Dispersions & Pigments division.

This outlook also includes the acquisition of Solvay's integrated polyamide business on January 31, 2020, which will be integrated into the Performance Materials and Monomers divisions.

In 2020, we expect the BASF Group as a whole to increase sales to between €60 billion and €63 billion (2019: €59,316 million). The main drivers should be volumes growth and portfolio effects from the acquisition of Solvay's integrated polyamide business, which closed in January 2020. Lower prices will presumably have an offsetting effect. We expect considerable sales growth in the Materials, Agricultural Solutions and Nutrition & Care segments. We anticipate

slightly higher sales in the Chemicals, Surface Technologies and Industrial Solutions segments, and sales at prior-year level in Other.

The BASF Group's EBIT before special items is expected to reach between €4.2 billion and €4.8 billion (2019: €4,536 million). We expect considerably higher contributions from the Industrial Solutions segment and Other. Our planning assumes that EBIT before special items will be slightly above the prior-year level in the Surface Technologies, Nutrition & Care and Agricultural Solutions segments. By contrast, we anticipate a considerable decline in EBIT before special items in the Materials and Chemicals segments.

The average cost of capital basis will increase in 2020 due to the inclusion of the assets acquired from Solvay. As a result, we expect the BASF Group's ROCE to reach between 6.7% and 7.7% (2019: 7.7%). In both the Materials (2019: 10.7%) and Industrial Solutions (2019: 12.5%) segments, we forecast a considerable decline in ROCE compared with the previous year. We expect ROCE to be at the prior-year level in the Surface Technologies segment (2019: 5.7%). By contrast, we anticipate a slight year-on-year increase for the Agricultural Solutions (2019: 5.3%) and Chemicals (2019: 6.8%) segments. In the Nutrition & Care segment (2019: 10.0%), we expect a considerable increase in ROCE compared with 2019.

The significant risks and opportunities that could affect our forecast are described under Opportunities and Risks on pages 139 to 147.

¹ For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%). At a cost of capital percentage of 9% for 2020, we define a change in ROCE of 0.1 to 1.0 percentage points as "slight," a change of more than 1.0 percentage points as "considerable" and no change (+/–0 percentage points) as "at prior-year level."

Forecast by segment^a

Million €

	Sales		EBIT before special items		ROCE	
	2019	Forecast 2020	2019	Forecast 2020	2019	Forecast 2020
Chemicals	9,532	slight increase	791	considerable decline	6.8%	slight increase
Materials	11,466	considerable increase	1,003	considerable decline	10.7%	considerable decline
Industrial Solutions	8,389	slight increase	820	considerable increase	12.5%	considerable decline
Surface Technologies ^b	13,142	slight increase	722	slight increase	5.7%	at prior-year level
Nutrition & Care	6,075	considerable increase	793	slight increase	10.0%	considerable increase
Agricultural Solutions	7,814	considerable increase	1,095	slight increase	5.3%	slight increase
Other	2,898	at prior-year level	(688)	considerable increase	–	–
BASF Group	59,316	€60 billion–€63 billion	4,536	€4.2 billion–€4.8 billion	7.7%	6.7–7.7%

^a For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%). At a cost of capital percentage of 9% for 2020, we define a change in ROCE of 0.1 to 1.0 percentage points as "slight," a change of more than 1.0 percentage points as "considerable" and no change (+/–0 percentage points) as "at prior-year level."

^b The 2019 segment data for Surface Technologies excludes the construction chemicals activities presented as discontinued operations.

Sales and earnings forecast for the segments

We expect slight sales growth in the **Chemicals** segment in 2020, mainly driven by higher volumes. We anticipate improved availability of steam cracker products, as volumes development in 2019 was negatively impacted by the scheduled turnarounds of our steam crackers in Port Arthur, Texas; Antwerp, Belgium; and Ludwigshafen, Germany. In addition, our planning assumes higher sales volumes of oxo alcohols in the Petrochemicals division, and in almost all business areas in the Intermediates division. Prices in both divisions will however decline due to high product availability on the market. Consequently, EBIT before special items will presumably be considerably below the 2019 level as a result of lower margins.

In the **Materials** segment, we expect considerable year-on-year sales growth in 2020, mainly driven by the positive contribution from the acquisition of Solvay's integrated polyamide business. We also anticipate higher volumes overall. Lower prices and currency effects should dampen sales development. We expect a considerable

decline in EBIT before special items due to a considerably lower contribution from the Monomers division on the back of lower margins and higher fixed costs. The expected increase in fixed costs will be from higher depreciation and amortization following the acquisition of Solvay's integrated polyamide business, new plants and one-off effects. The higher EBIT before special items forecast for the Performance Materials division due to higher volumes and margins will not be able to compensate for this.

Sales in the **Industrial Solutions** segment will likely increase slightly in 2020, mainly from higher volumes in both divisions. The sale of the ultrafiltration membrane business to DuPont Safety & Construction (DuPont) on December 31, 2019, as well as the transfer of BASF's paper and water chemicals business to the Solenis group on January 31, 2019, will have an offsetting effect. Despite the continuing challenging market environment, we expect a considerable increase in EBIT before special items for the segment, primarily as a result of higher volumes.

In the **Surface Technologies** segment, we are forecasting slight sales growth despite the expected decline in production in the automotive industry. We anticipate higher prices, especially in precious metal trading and for mobile emissions catalysts in the Catalysts division. Overall, we aim to slightly increase EBIT before special items, primarily with improved margins in precious metal trading. By contrast, we anticipate a slight year-on-year decline in sales and EBIT before special items in the Coatings division.

For the **Nutrition & Care** segment, we expect considerably higher sales than in 2019, largely from volumes growth in both divisions. Our planning assumes a continued improvement in product availability, especially in the Nutrition & Health division. Lower prices in both divisions will presumably have an offsetting effect. We expect to see a slight year-on-year improvement in EBIT before special items, mainly as a result of growth in sales volumes and despite positive one-off effects in 2019.

Despite the continuing challenging market environment, we anticipate considerable sales growth in the **Agricultural Solutions** segment. We aim to considerably increase our sales volumes, which should more than offset negative currency effects. Overall, we expect a slight increase in EBIT before special items. We will maintain our program to boost efficiency. We will also continue to invest at a high level in research and development and digitalization in 2020.

Sales in **Other** are expected to match the 2019 level in 2020. For EBIT before special items, we are forecasting a figure considerably above the previous year due to solid contributions from our equity-accounted shareholdings. Lower corporate research costs should also contribute here.

Capital expenditures

■ Capex of around €3.4 billion planned for 2020

We are planning capital expenditures (additions to property, plant and equipment excluding acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases) of around €3.4 billion for the BASF Group in 2020. For the period from 2020 to 2024, we have planned capital expenditures totaling €23.6 billion. The investment volume in the coming years will thus exceed that of the planning period 2019 to 2023. Of the planned capital expenditures, €8.2 billion relate to our major investment projects in Zhanjiang, China, and Mundra, India, to expand our businesses in Asia and in battery materials.

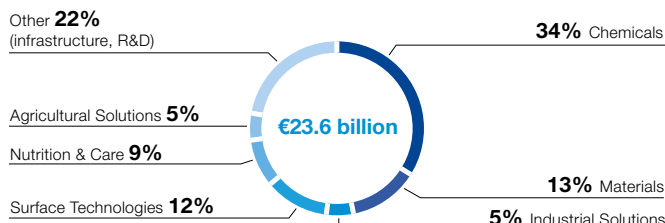
Projects currently being planned or underway include:

Capex: selected projects

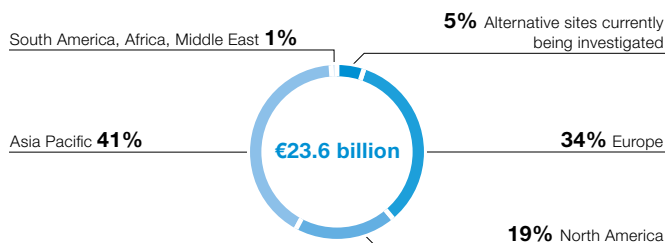
Location	Project
Antwerp, Belgium	Capacity expansion: integrated ethylene oxide complex Gradual capacity expansion: alkoxylates
Geismar, Louisiana	Capacity expansion: MDI plant
Harjavalta, Finland and Schwarzheide, Germany	Investment: battery materials
Ludwigshafen, Germany	Construction: production plant for vitamin A
Mundra, India	Investment: acrylics value chain ^a
Zhanjiang, China	Planned construction: integrated Verbund site

^a In cooperation with Adani Group

Capex by segment 2020–2024



Capex by region 2020–2024



Dividend

We stand by our ambitious dividend policy and offer our shareholders an attractive dividend yield. We aim to increase our dividend each year.

[Information on the proposed dividend can be found on page 13](#)

Financing

In 2020, we expect cash outflows in the equivalent amount of around €1.3 billion from the scheduled repayment of bonds. To refinance maturing bonds and to optimize our maturity profile, we continue to have medium to long-term corporate bonds and our U.S. dollar commercial paper program at our disposal.

[Information on our financing policies can be found on page 55](#)

Events after the reporting period

We closed the acquisition of Solvay's global polyamide business on January 31, 2020. The E.U. Commission had approved the acquisition of the polyamide business, subject to certain conditions, on January 18, 2019. These conditions require the sale of parts of the original transaction scope to a third party, specifically Solvay's production plants in the engineering plastics field in Europe. Domo Chemicals, Leuna, Germany, was approved by the E.U. Commission as the buyer. The acquired polyamide business will be integrated into the Performance Materials and Monomers divisions.

On February 14/15, 2020, a jury in a U.S. Federal District Court awarded \$15 million in compensatory damages against defendants Monsanto Company and BASF Corporation after a trial related to alleged yield losses of a peach farmer in connection with the use of the dicamba herbicide. The jury also found that Monsanto was liable for \$250 million in punitive damages. Finally, the jury found that the defendants were acting in a joint venture and conspiracy. Following the jury's decision, the court is considering whether BASF Corporation is also liable for the punitive damages award against Monsanto because of the joint venture finding. BASF intends to use all legal remedies available and will appeal the decision as to compensatory damages and, if applicable, punitive damages.

Opportunities and Risks

The goal of BASF's risk management is to identify and evaluate opportunities and risks as early as possible and to take appropriate measures in order to seize opportunities and limit business losses. The aim is to avoid risks that pose a threat to BASF's continued existence and to make improved managerial decisions to create value. We define opportunities as potential successes that exceed our defined goals. We understand risk to be any event that can negatively impact the achievement of our short-term operational or long-term strategic goals.

Opportunities

Potential successes that exceed our defined goals

Risks

Events that can negatively impact the achievement of our goals

In order to effectively measure and manage identified opportunities and risks, we quantify these where appropriate in terms of probability and economic impact in the event they occur. Where possible, we use statistical methods to aggregate opportunities and risks into risk factors. This way, we achieve an overall view of opportunities and risks at a portfolio level, allowing us to take effective measures for risk management.

Overall assessment

- Significant opportunities and risks arise from overall economic developments, margin and exchange rate volatility
- No threat to continued existence of BASF

For 2020, we anticipate much slower global economic growth compared with the previous year. We expect global economic uncertainty to be extremely high and that growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. Important opportunities and risks for our earnings are associated with uncertainty regarding market growth and the development of key customer industries, as well as margin volatility. An escalation of the trade conflicts between the United States and its trade partners and an even greater slowdown of the Chinese economy also pose significant risks. Such a development would have an even greater negative impact on demand for intermediate and investment goods. This would impact the emerging markets that export raw materials as well as the advanced economies. This is especially true for Europe. Further risks to the global economy arise from an escalation of geopolitical conflicts.

According to our assessment, there are no significant individual risks that pose a threat to the continued existence of the BASF Group. The same applies to the sum of individual risks, even in the case of a global economic crisis.

Ultimately, however, residual risks (net risks) remain in all entrepreneurial activities that cannot be ruled out, even by comprehensive risk management.

Potential short-term effects on EBIT of key opportunity and risk factors subsequent to measures taken^a

Possible variations related to:	Outlook - 2020 +	
Business environment and sector		
Market growth	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Margins	□ ■ ■ ■ ■	■ ■ ■ ■ ■
Competition	□ □ □ ■ ■	■ ■ ■ ■ ■
Regulation/policy	□ □ □ ■ ■	■ ■ ■ ■ ■
Company-specific opportunities and risks		
Purchasing/supply chain	□ □ □ ■ ■	■ ■ ■ ■ ■
Investments/production	□ □ □ ■ ■	■ ■ ■ ■ ■
Personnel	□ □ □ □ ■	■ ■ ■ ■ ■
Acquisitions/divestitures/cooperations	□ □ □ □ ■	■ ■ ■ ■ ■
Information technology	□ □ □ □ ■	□ □ □ □ □
Law	□ □ □ □ ■	■ ■ ■ ■ ■
Financial		
Exchange rate volatility	□ □ ■ ■ ■	■ ■ ■ ■ ■
Other financial opportunities and risks	□ □ □ □ ■	■ ■ ■ ■ ■
□ □ □ □ ■ < €100 million		
□ □ □ ■ ■ ≥ €100 million < €500 million		
□ □ ■ ■ ■ ≥ €500 million < €1,000 million		
□ ■ ■ ■ ■ ≥ €1,000 million < €1,500 million		
■ ■ ■ ■ ■ ≥ €1,500 million ≤ €2,000 million		

■■■■■ < €100 million
 ■■■■■ ≥ €100 million < €500 million
 ■■■■■ ≥ €500 million < €1,000 million
 ■■■■■ ≥ €1,000 million < €1,500 million
 ■■■■■ ≥ €1,500 million ≤ €2,000 million

^a Using a 95% confidence interval per risk factor based on planned values; summation is not permissible

Risk management process

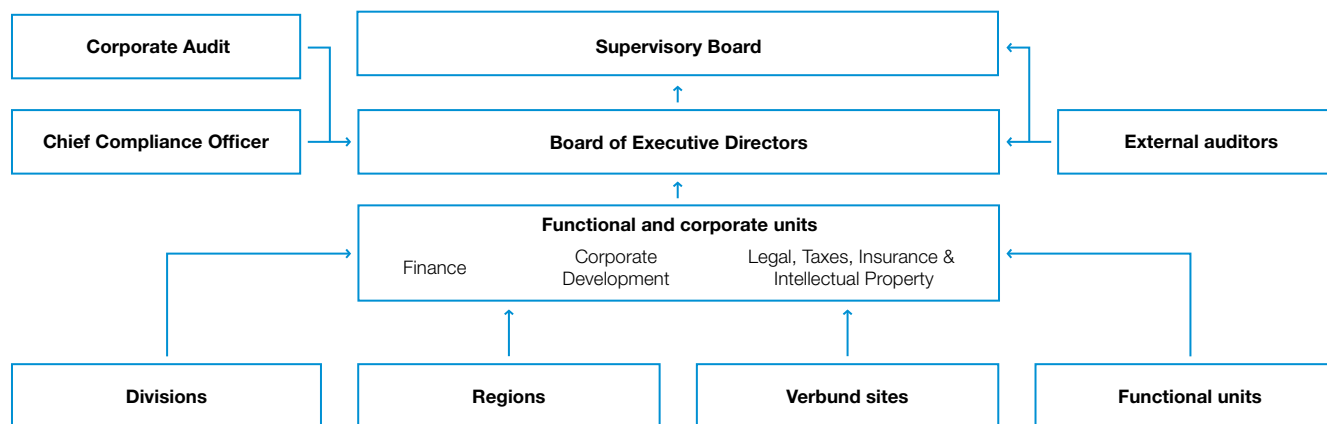
- Integrated process for identification, assessment and reporting
- Decentralized management of specific opportunities and risks
- Aggregation at a Group level

The BASF Group's risk management process is based on the international risk management standard COSO II Enterprise Risk Management – Integrated Framework (2004), and has the following key features:

Organization and responsibilities

- Risk management is the responsibility of the Board of Executive Directors, which also determines the processes for approving investments, acquisitions and divestitures.
- The Board of Executive Directors is supported by the units Finance, Corporate Development and Legal, Taxes, Insurance & Intellectual Property, and the Chief Compliance Officer. These units coordinate the risk management process at a Group level, examine financial and sustainability-related opportunities and risks, and provide the structure and appropriate methodology. Opportunity and risk management is thus integrated into the strategy, planning and budgeting processes.
- A network of risk managers in the business, functional and corporate units as well as in the regions and at the Verbund sites advances the implementation of appropriate risk management practices in daily operations.
- The management of specific opportunities and risks is largely delegated to the operating divisions, the functional units and the regions, and is steered at a regional or local level. Risks relating to exchange rates and raw materials prices are an exception. In this case, there is an initial consolidation at a Group level before derivative hedging instruments, for example, are used.
- BASF's Chief Compliance Officer (CCO) manages the implementation of our Compliance Management System, supported by

Organization of BASF Group's risk management (until December 31, 2019)



additional compliance officers worldwide. He regularly reports to the Board of Executive Directors on the status of implementation as well as on any significant results. He also provides a status report to the Supervisory Board's Audit Committee at least once a year, including any major developments. In the event of significant incidents, the Audit Committee is immediately informed by the Board of Executive Directors.

- The internal auditing unit (Corporate Audit) is responsible for regularly auditing the risk management system established by the Board of Executive Directors in accordance with section 91(2) of the German Stock Corporation Act. Furthermore, as part of its monitoring of the Board of Executive Directors, the Supervisory Board considers the effectiveness of the risk management system. The suitability of the early detection system we set up for risks is evaluated by our external auditor.
- The processes will be transferred to the new organization, which became effective as of January 1, 2020. This will not affect the structure or effectiveness of the risk management process.

Instruments

- The Risk Management Policy, applicable throughout the Group, forms the framework for risk management and is implemented by the operating divisions, the functional units and the regions according to their specific conditions.
- A catalog of opportunity and risk categories helps to identify all relevant financial and sustainability-related opportunities and risks as comprehensively as possible.
- We use standardized evaluation and reporting methods for the identification and assessment of risks. The aggregation of opportunities, risks and sensitivities at division and Group level using a Monte Carlo simulation helps us to identify effects and trends across the Group.
- The sustainability-related topics relevant for BASF are addressed by the responsible operating divisions, functional units and the regions, which assess the risks identified as being relevant according to impact and probability of occurrence. We also systematically assess opportunities and risks with effects that cannot yet be measured in monetary terms, such as reputational

risks. We minimize sustainability risks with our sustainability management tools. For instance, we have established global monitoring systems to verify compliance with laws and our voluntary commitments in this area. These also incorporate our suppliers.

- As part of our analysis of sustainability-related opportunities and risks, we also consider the physical risks associated with climate change (such as damage to plants caused by external weather events) and transition risks (such as impairment due to emission levels of plants) as defined by the Task Force on Climate-related Financial Disclosures (TCFD).
- The BASF Group's management is informed about operational opportunities and risks (observation period of up to one year) in the monthly management report produced by the Finance department. In addition, Finance provides information twice a year on the aggregated opportunity/risk exposure of the BASF Group. Furthermore, if a new individual risk is identified which has a more than €10 million impact on earnings or bears reputational risks, it must be immediately reported.
- As part of strategy development, the Corporate Development unit conducts strategic opportunity/risk analyses with a 10-year assessment period. These analyses are annually reviewed as part of strategic controlling and are adapted if necessary.

[For more information on our sustainability management processes, see page 36 onward](#)

- Our Group-wide Compliance Program aims to ensure adherence to legal regulations and the company's internal guidelines. Our global employee Code of Conduct firmly embeds these mandatory standards into everyday business. Members of the Board of Executive Directors are also expressly obligated to follow these principles.

[For more information on our Group-wide Compliance Program, see page 157 onward](#)

Significant features of the internal control and risk management system with regard to the Group financial reporting process

- **Conducted in accordance with standardized Group guidelines**
- **Segregation of duties, principle of dual control and clearly regulated access rights**
- **Annual evaluation of the control environment and relevant processes at significant companies**

The consolidated financial statements are prepared by a unit in the Finance department. BASF Group's accounting process is based on a uniform accounting guideline that sets out accounting policies and the significant processes and deadlines on a Group-wide basis. There are binding directives for the internal reconciliations and other accounting operations within the Group. Standard software is used to carry out the accounting processes for the preparation of the individual financial statements as well as for the consolidated financial statements. There are clear rules for the access rights of each participant in these processes.

Employees involved in the accounting and reporting process meet the qualitative requirements and participate in training on a regular basis. There is a clear assignment of responsibilities between the specialist units, companies and regional service units involved. We strictly adhere to the principles of segregation of duties and dual control, or the "four-eyes principle." Complex actuarial reports and evaluations are produced by specialized service providers or specially qualified employees.

An internal control system for financial reporting continuously monitors these principles. To this end, methods are provided to ensure that evaluation of the internal control system in financial reporting is structured and uniform across the BASF Group.

The significant risks for the BASF Group regarding a reliable control environment for proper financial reporting are reviewed and updated on an annual basis. Risks are compiled into a central risk catalog.

Moreover, a centralized selection process identifies companies that are exposed to particular risks, that are material to the Consolidated Financial Statements of the BASF Group, or that provide service processes. The selection process is conducted annually. In the relevant companies, one person is given the responsibility of monitoring the execution of the requirements for an effective control system in financial reporting.

In these companies, the process comprises the following steps:

- **Evaluation of the control environment**
Adherence to internal and external guidelines that are relevant for the maintenance of a reliable control environment is checked by means of a standardized questionnaire.
- **Identification and documentation of control activities**
In order to mitigate the risks to the financial reporting processes listed in our central risk catalog, critical processes and control activities are documented.
- **Assessment of control activities**
After documentation, a review is performed to verify whether the described controls are capable of adequately covering the risks. In the subsequent test phase, samples are taken to test whether, in practice, the controls were executed as described and effective.
- **Monitoring of control weaknesses**

The managers responsible receive reports on any control weaknesses identified and their resolution, and an interdisciplinary committee investigates their relevance for the BASF Group. The Board of Executive Directors and the Audit Committee are informed if control weaknesses with a considerable impact on financial reporting are identified. Only after material control weaknesses have been resolved does the company's managing director confirm the effectiveness of the internal control system.

– Internal confirmation of the internal control system

All managing directors and chief financial officers of each consolidated Group company must confirm to the Board of Executive Directors of BASF SE every half-year and at the end of the annual cycle, in writing, that the internal control system is effective with regard to accounting and reporting.

Short-term opportunities and risks

Development of demand

The development of our sales markets is one of the strongest sources of opportunities and risks. More details on our assumptions regarding short-term growth rates for the global economy, regions and key customer industries, such as the chemicals, automotive and construction sectors, can be found under Economic Environment in 2020 on pages 133 to 135.

We also consider risks from deviations in assumptions. A significant macroeconomic risk arises from the possibility that measures to contain the coronavirus are kept in place for a longer period of time or expanded, and that Chinese and global economic growth continues to slow as a result. A further escalation of the trade conflicts between the United States and its trade partners pose additional macroeconomic risks. Both can have a considerable impact on demand for intermediate goods for industrial production and demand for investment goods. This would have an effect on emerging markets that export raw materials as well as on advanced economies that specialize in technological goods. Risks to the global economy would also be posed by the possible escalation of geopolitical conflicts.

Weather-related influences can result in positive or negative effects on our business, particularly in the Agricultural Solutions segment.

Margin volatility

Margin risks for the BASF Group primarily result from a further decline in margins in the Chemicals and Materials segments. New

capacities or raw materials shortages could also increase margin pressure on a number of products and value chains. This would have a negative effect on our EBIT.

Since the merger of the oil and gas businesses of Wintershall and DEA, the contribution attributable to BASF is included in income from operations (EBIT) through income from companies accounted for using the equity method. This has a compensating effect on margin pressure in the chemicals business if oil and gas prices rise. The year's average oil price for Brent crude was \$64 per barrel in 2019, compared with \$71 per barrel in the previous year. For 2020, we anticipate an average oil price of \$60 per barrel. We therefore expect price levels for the raw materials and petrochemical basic products that are important to our business to remain constant.

Competition

We continuously enhance our products and solutions in order to maintain competitive ability. We monitor the market and the competition, and try to take targeted advantage of opportunities and counter emerging risks with suitable measures. Aside from innovation, key components of our competitiveness are our ongoing cost management and continuous process optimization.

Regulation and political risks

Risks for us can arise from intensified geopolitical tensions, new trade sanctions, stricter emissions limits for plants or energy, and climate laws. In addition, risks to the BASF Group can be posed by further regulations in key customer industries or on the use or registration of agricultural and other chemicals.

Brexit has given rise to economic and political uncertainties. At this point in time, it is not yet clear what the future relationship between the European Union and the United Kingdom will look like after the transition phase and what specific consequences this will have for our sites, our supply chains and the regulatory environment. A cross-divisional Brexit team has been established to prepare the BASF organization for various scenarios and enable it to promptly

react to political decisions. Together with our operating units, suppliers, customers and logistics partners, we have identified problems and steps to avoid supply chain disruptions, especially in the event of a hard Brexit. Alternative logistics concepts include, for example, leasing additional warehouse space, establishing consignment warehouses or technical expansions in our ERP systems to be able to react to additional customs requirements on the systems side as well.

Political measures could also give rise to opportunities. For example, we view measures around the world to increase energy efficiency as an opportunity for increased demand for our products, such as our insulation foams for buildings, battery materials for electromobility, or our solutions for wind turbines. Our broad product portfolio enables us to offer alternatives if chemicals have to be substituted as a result of restrictions in connection with the REACH chemicals regulation or new standards in our customers' industries.

Purchasing and supply chain

We minimize procurement risks through our broad portfolio, global purchasing activities and the purchase of raw materials on spot markets. If possible, we avoid procuring raw materials from a single supplier. When this cannot be avoided, we try to foster competition or we knowingly enter into this relationship and assess the consequences of potential nondelivery. We continuously monitor the credit risk of important business partners.

Around the world, the frequency and intensity of extreme weather conditions (such as high/low water levels on rivers or hurricanes) are subject to change as a result of climate change. We address the risk of supply interruptions on the procurement and sales side caused by extreme weather conditions by switching to unaffected logistics carriers and the possibility of falling back on unaffected sites within our global Verbund. We can no longer rule out the effects of extreme low-water situations caused by climate change at our Verbund site in Ludwigshafen, Germany. In 2019, we therefore implemented a package of measures including the development of an early warning

system for low water levels, making loading stations more flexible and time chartering ships with high load capacities in the case of low water. These measures can be deployed immediately and make extremely long periods of low water on the Rhine River, like the one in 2018, more manageable.

Production and investments

We try to prevent unscheduled plant shutdowns by adhering to high technical standards and by continuously improving our plants. We reduce the effects of an unscheduled shutdown on the supply of intermediate and end products through diversification within our global production Verbund.

In the event of a production outage – caused by an accident, for example – our global, regional or local emergency response plans and crisis management structures are engaged, depending on the impact scope. Every region has crisis management teams on a local and regional level. They not only coordinate the necessary emergency response measures, they also initiate the immediate measures for damage control and resumption of normal operations as quickly as possible.

Crisis management also includes dealing with extreme weather conditions such as hurricanes (for example, at the sites on the Gulf of Mexico in Freeport, Texas, and Geismar, Louisiana) or significantly elevated water temperatures in rivers due to extended heat waves, which limit the available cooling capacity (for example, at the Ludwigshafen site in Germany). Appropriate precautions are taken at the sites in the case of a potential change in risk in connection with climate change. For example, the Verbund site in Ludwigshafen, Germany, implemented a package of measures in 2019 to increase cooling capacity, including expanding and optimizing the central recooling plants and optimizing cooling water flows. These are capable of avoiding production outages due to extreme heatwaves like the one in 2018.

Short-term risks from investments can result from, for example, technical malfunctions or schedule and budget breaches. We counter these risks with highly experienced project management and controlling.

Acquisitions, divestitures and cooperations

We constantly monitor the market in order to identify possible acquisition targets and develop our portfolio appropriately. In addition, we work together in collaborations with customers and partners to jointly develop new, competitive products and applications.

Opportunities and risks arise in connection with acquisitions and divestitures from the conclusion of a transaction, or it being completed earlier or later than expected. They relate to the regular earnings contributions gained or lost as well as the realization of gains or losses from divestitures if these deviate from our planning assumptions.

[For more information on opportunities and risks from acquisitions and divestitures in 2019, see page 43](#)

Personnel

Due to BASF's worldwide compensation principles, the development of personnel expenses is partly dependent on the amount of variable compensation, which is linked to the company's success, among other factors. The correlation between variable compensation and the success of the company has the effect of minimizing risk. Another factor is the development of interest rates for discounting pension obligations. Furthermore, changes to the legal environment of a particular country can have an impact on the development of personnel expenses for the BASF Group. For countries in which BASF is active, relevant developments are therefore constantly monitored in order to recognize risks at an early stage and enable BASF to carry out suitable measures.

[For more information on our compensation system, see page 130](#)

[For more information on risks from pension obligations, see page 145](#)

Information technology risks

BASF relies on a large number of IT systems. Their nonavailability, violation of confidentiality or the manipulation of data in critical IT systems and applications can all have a direct impact on production and logistics processes. The threat environment has changed in recent years, as attackers have become better organized, use more sophisticated technology, and have far more resources available. If data are lost or manipulated, this can, for example, negatively affect plant availability, delivery quality or the accuracy of our financial reporting. Unauthorized access to sensitive data, such as personnel records or customer data, competition-related information or research results, can result in legal consequences or jeopardize our competitive position. This would also be accompanied by the associated loss of reputation.

To minimize such risks, BASF uses globally uniform processes and systems to ensure IT availability and IT security, such as stable and redundantly designed IT systems, backup processes, virus and access protection, encryption systems as well as integrated, Group-wide standardized IT infrastructure and applications. The systems used for information security are constantly tested, continuously updated, and expanded if necessary. In addition, our employees receive regular training on information and data protection. IT-related risk management is conducted using Group-wide regulations for organization and application, as well as an internal control system based on these regulations.

BASF also established the Cyber Defense Center in 2015, is a member of Cyber Security Sharing and Analytics e.V. (CSSA), and a founding member of the German Cybersecurity Organization (DCSO) together with Allianz SE, Bayer AG and Volkswagen AG. BASF has also established an information security management system and is certified according to ISO/IEC 27001:2013.

Legal disputes and proceedings

We constantly monitor current and potential legal disputes and proceedings, and regularly report on these to the Board of Executive Directors and Supervisory Board. In order to assess the risks from current legal disputes and proceedings and any potential need to recognize provisions, we prepare our own analyses and assessments of the circumstances and claims considered. In addition, in individual cases, we consider the results of comparable proceedings and, if needed, independent legal opinions. Risk assessment is particularly based on estimates as to the probability of occurrence and the range of possible claims. These estimates are the result of close cooperation between the relevant operating and functional units together with the Legal and Finance units. If sufficient probability of occurrence is identified, a provision is recognized accordingly for each proceeding. Should a provision be unnecessary, general risk management continues to assess whether these litigations nevertheless represent a risk for the EBIT of the BASF Group.

We use our internal control system to limit risks from potential infringements of rights or laws. For example, we try to avoid patent and licensing disputes whenever possible through extensive clearance research. As part of our Group-wide Compliance Program, our employees receive regular training.

Financial opportunities and risks

The management of liquidity, currency and interest rate risks is conducted in the Treasury unit. The management of commodity price risks takes place in the Procurement & Supply Chain Services functional unit or in appropriately authorized Group companies. Detailed guidelines and procedures exist for dealing with financial risks. Among other things, they provide for the segregation of trading and back office functions.

As a part of risk management, activities in countries with transfer restrictions are continuously monitored. This includes, for example, regular analysis of the macroeconomic and legal environment,

shareholders' equity and the business models of the operating units. The chief aim is the reduction of counterparty, transfer and currency risks for the BASF Group.

Exchange rate volatility

Our competitiveness on global markets is influenced by fluctuations in exchange rates. For BASF's sales, opportunities and risks arise in particular when the U.S. dollar exchange rate fluctuates. A full-year appreciation of the U.S. dollar against the euro by \$0.01, which could result from a macroeconomic slowdown, would increase the BASF Group's EBIT by around €40 million, assuming other conditions remain the same. On the production side, we counter exchange rate risks by producing in the respective currency zones.

Financial currency risks result from the translation of receivables, liabilities and other monetary items in accordance with IAS 21 at the closing rate into the functional currency of the respective Group company. In addition, we incorporate planned purchase and sales transactions in foreign currencies in our financial foreign currency risk management. These risks are hedged using derivative instruments, if necessary.

Interest rate risks

Interest rate risks result from potential changes in prevailing market interest rates. These can cause a change in the fair value of fixed-rate instruments and fluctuations in the interest payments for variable-rate financial instruments, which would positively or negatively affect earnings. To hedge these risks, interest rate swaps and combined interest rate and currency derivatives are used in individual cases.

In addition to market interest rates, BASF's financing costs are determined by the credit risk premiums to be paid. These are mainly influenced by our credit rating and the market conditions at the time of issue. In the short to medium term, BASF is largely protected from the possible effects on its interest result thanks to the balanced maturity profile of its financial indebtedness.

Risks from metal and raw materials trading

In the catalysts business, BASF employs commodity derivatives for precious metals and trades precious metals on behalf of third parties and on its own account. Appropriate commodity derivatives are also traded to optimize BASF's supply of refinery products, gas and other petrochemical raw materials. To address specific risks associated with these non-operating trades, we set and continuously monitor limits with regard to the type and scope of the deals concluded.

Liquidity risks

Risks from fluctuating cash flows are recognized in a timely manner as part of our liquidity planning. We have access to extensive liquidity at any time thanks to our good ratings, our unrestricted access to the commercial paper market and committed bank credit lines. In the short to medium term, BASF is largely protected against potential refinancing risks by the balanced maturity profile of its financial indebtedness as well as through diversification in various financial markets.

[For more information on the maturity profile of our financial indebtedness, see the explanations in the Financial Position on page 55 and the Notes to the Consolidated Financial Statements from page 261 onward](#)

Risk of asset losses

We limit country-specific risks with measures based on internally determined country ratings, which are continuously updated to reflect changing environment conditions. We selectively use investment guarantees to limit specific country-related risks. We lower credit risks for our financial investments by engaging in transactions only with banks with good credit ratings and by adhering to fixed limits. Creditworthiness is continuously monitored and the limits are adjusted accordingly. We reduce the risk of default on receivables by continuously monitoring the creditworthiness and payment behavior of our customers and by setting appropriate credit limits. Risks are also limited through the use of credit insurance and bank guarantees. Due to the global activities and diversified customer structure of the BASF Group, there are no major concentrations of credit default risk.

Impairment risks

Asset impairment risk arises if the assumed interest rate in an impairment test increases, the predicted cash flows decline, or investment projects are suspended. Currently, we consider the impairment risk for assets such as customer relationships, technologies and trademarks, goodwill, and equity-accounted investments to be immaterial.

Long-term incentive program for senior executives

Our senior executives have the opportunity to participate in a share price-based compensation program. The need for provisions for this program varies according to the development of the BASF share price and the MSCI World Chemicals Index; this leads to a corresponding increase or decrease in personnel costs.

[For more information on the long-term incentive program, see the Notes to the Consolidated Financial Statements from page 284 onward](#)

Risks from pension obligations

Most employees are granted company pension benefits from either defined contribution or defined benefit plans. We predominantly finance company pension obligations externally through separate plan assets. This particularly includes BASF Pensionskasse VVaG and BASF Pensionstreuhand e.V. in Germany, in addition to the large pension plans of our Group companies in North America, the United Kingdom and Switzerland. To address the risk of underfunding due to market-related fluctuations in plan assets, we have investment strategies that align return and risk optimization to the structure of the pension obligations. Stress scenarios are also simulated regularly by means of portfolio analyses. An adjustment to the interest rates used in discounting pension obligations leads immediately to changes in equity. To limit the risks of changing financial market conditions as well as demographic developments, employees have, for a number of years now, been almost exclusively offered defined contribution plans for future years of service. Some of these contribution plans include minimum interest guarantees. If the pension fund cannot generate this, it must be provided by the employer. A permanent continuation of the low interest rate environ-

ment could make it necessary to recognize pension obligations and plan assets for these plans as well.

Long-term opportunities and risks

Long-term demand development

We assume that growth in chemical production (excluding pharmaceuticals) will roughly track global gross domestic product over the next five years and be slightly below the previous five-year average. Through our market-oriented and broad portfolio, which we will continue to strengthen in the years ahead through investments in new production capacities, research and development activities and acquisitions, we aim to achieve volumes growth that slightly exceeds this market growth. Should global economic growth see unexpected, considerable deceleration, due for example to an ongoing weak period in the emerging markets, protectionist tendencies or to geopolitical crises, the expected growth rates could prove too ambitious.

[For more information on the corporate strategy, see page 24 onward](#)

Development of competitive and customer landscape

We expect competitors from Asia and the Middle East in particular to gain increasing significance in the years ahead. Furthermore, we predict that many producers in countries rich in raw materials will expand their value chains. We counter this risk through active portfolio management.

We continuously improve our processes in order to remain competitive through our operational excellence. Our strategic Excellence Program serves the same purpose. This is expected to contribute €2 billion to EBITDA annually from the end of 2021 onward compared with baseline 2018.

In order to achieve lasting profitable growth, tap into new market segments and make our customers more successful, our research

and business focus is on highly innovative business areas, some of which we enter into through strategic cooperative partnerships.

[For more information on our Excellence Program, see page 20 onward](#)

Innovation

The central research areas Process Research & Chemical Engineering, Advanced Materials & Systems Research and Bioscience Research serve as global platforms headquartered in our regions: Europe, Asia Pacific and North America. Together with the development units in our operating divisions, they form the core of the global Know-How Verbund. Our strong regional presence opens up opportunities to participate in local innovation processes and gain access to local talent. We optimize the effectiveness and efficiency of our research activities through our global Know-How Verbund.

Research activities funded by the BASF Group promote the targeted development and enhancement of key technologies as well as the establishment of new business areas. Focus areas in research are determined based on their strategic relevance for BASF, above and beyond existing business areas.

We also address the risk of the technical or economic failure of research and development projects by maintaining a balanced and comprehensive project portfolio, as well as through professional, milestone-based project management.

Potential applications of digital technologies and solutions along the entire value chain are investigated in both the operational and functional divisions as well as by cross-divisional teams, and tested in dedicated pilot projects. They are supported here by the Digitalization & Information Services unit. We analyze the opportunities and risks of digitalization in Production, Logistics, Research & Development and for business models as well as in corporate functions such as Finance, Human Resources, Procurement & Supply Chain Services, Legal, Taxes, Insurance & Intellectual Property. The opportunities and risks of digitalization are steered by the operational and functional divisions.

The trust of customers and consumers is essential for the successful introduction of new technologies. That is why we enter into dialog with our stakeholders at an early stage of development. The trend toward increased sustainability requirements in our customer industries continues. Our aim is to leverage the resulting opportunities in a growing market even more effectively in the future with innovations. This is why we applied the Sustainable Solution Steering method, which is used to evaluate the sustainability of our product portfolio, to assessments of innovation projects, and integrated it into an early stage of our research and development processes as well as the development of our business strategies. In this way, we want to benefit from the higher profitability of our Accelerator solutions compared with the rest of our evaluated portfolio. At the same time, we reduce reputational and financial risks by phasing out products for which we have identified substantial sustainability concerns ("Challenged" products) within five years of initial classification as such at the latest. We develop action plans for these products at an early stage to minimize any potential financial risks. These can include research projects, reformulations or even replacing one product with another.

[For more information on innovation and digitalization, see page 31 onward](#)

Portfolio development through investments

Our decisions on the type, scope and locations of our investment projects are based on assumptions related to the long-term development of markets, margins and costs, as well as raw material availability and country, currency and technology risks. Opportunities and risks arise from potential deviations in actual developments from our assumptions.

We expect the increase in chemical production in emerging markets in the coming years to remain above the global average. This will create opportunities that we want to exploit by expanding our local presence.

[For more information on our investment plans, see page 138](#)

Acquisitions

In the future, we will continue to expand and refine our portfolio through acquisitions that promise above-average profitable growth as part of the BASF Verbund, are innovation-driven or offer a technological differentiation, that help to reach a relevant market position, and make new, sustainable business models possible.

The evaluation of opportunities and risks plays a significant role during the assessment of acquisition targets. A detailed analysis and quantification is conducted as part of due diligence. Examples of risks include increased staff turnover, delayed realization of synergies, or the assumption of obligations that were not precisely quantifiable in advance. If our expectations in this regard are not fulfilled, risks could arise, such as the need to impair intangible assets; however, there could also be opportunities, for example, from additional synergies.

[For more information on our acquisitions, see page 43 onward](#)

Recruitment and long-term retention of qualified employees

BASF anticipates growing challenges in attracting qualified employees in the medium and long term due to demographic change, especially in North America and Europe. As a result, there is an increased risk that job vacancies may not be filled with suitable applicants, or only after a delay. We address these risks with measures to integrate diversity, employee and leadership development, and intensified employer branding. At local level, demographic management includes succession planning, knowledge management and offerings to improve the balance between personal and professional life and promote healthy living. This increases BASF's appeal as an employer and retains our employees in the long term.

[For more information on the individual initiatives and our goals, see page 126 onward](#)

Sustainability

Opportunities and risks that could arise from material sustainability topics can only rarely be measured in specific financial terms and have an impact on business activities, especially in the medium to long term.

As part of our general risk management process, we also identify and assess relevant risks arising from sustainability topics such as climate change. Our sustainability management helps to minimize risks and opens up new opportunities to market more sustainable products. We reduce potential risks in the areas of environmental protection, safety and security, health protection, product stewardship, compliance, supplier relationships and labor and social standards by setting ourselves globally uniform requirements. These often go beyond local legal requirements.

We verify compliance with these standards through internal monitoring systems such as global surveys or audits. In 2019, for example, suppliers were audited for sustainability at a number of sites. All employees, managers and Board members are required to adhere to our global Code of Conduct, which defines a binding framework for our activities. The monitoring systems are complemented by grievance mechanisms such as our compliance hotlines.

Risk management in the area of sustainability also includes climate-related risks and opportunities. We consider risks for companies in connection with the transition to a low-carbon economy (transition risks) as well as physical risks as defined by the Task Force on Climate-related Financial Disclosures (TCFD). For BASF as an energy-intensive company, climate-related risks arise particularly from regulatory changes, such as in carbon prices through emissions trading systems, taxes or energy legislation. In addition, BASF's emissions footprint and intensity could lead to a negative perception and reduced appeal among external stakeholders such as customers or investors. We counter these risks with our carbon management measures and by transparently disclosing our positions on and contributions to climate protection (such as political demands, progress in the implementation of our climate strategy and how our products help to protect the environment) in publicly accessible sources (such as this annual report or on the BASF website) and in direct dialog with external stakeholders. Physical risks to our production and our supply chain are addressed by our risk management in production and in procurement. Our broad product portfolio

also includes solutions for the circular economy and climate protection (such as insulation foams for buildings, materials for electromobility and bio-based products). Increased social awareness offers additional market opportunities for these products. We are working with numerous scientific and public organizations and initiatives on solutions for sustainable agriculture that meet economic, ecological, and social demands over the long term.

Our decentralized specialists use a central decision tree to document reportable sustainability risks within the meaning of section 289b et seq. of the German Commercial Code. No reportable residual net risks within the meaning of section 289b et seq. of the German Commercial Code were identified for 2019.

 For more information on sustainability management, see page 36 onward

For more information on energy and climate protection, see page 116 onward

For more information on opportunities and risks from energy policies, see page 142

 For more information on our positions on and contributions to climate protection, see basf.com/climate_protection

3

Corporate Governance

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Corporate Governance Report

Corporate governance refers to the entire system for managing and supervising a company. This includes its organization, values, corporate principles and guidelines as well as internal and external control and monitoring mechanisms. Effective and transparent corporate governance ensures that BASF is managed and supervised responsibly with a focus on value creation. It fosters the confidence of our investors, the financial markets, our customers and other business partners, employees, and the public in BASF.

Board of Executive Directors

manages company and represents BASF SE in business with third parties

Supervisory Board

appoints, monitors and advises Board of Executive Directors

Shareholders

exercise rights of co-administration and supervision at Annual Shareholders' Meeting

The fundamental elements of BASF SE's corporate governance system are: its two-tier system, with a transparent and effective separation of company management and supervision between BASF's Board of Executive Directors and the Supervisory Board; the equal representation of shareholders and employees on the

Supervisory Board; and the shareholders' rights of co-administration and supervision at the Annual Shareholders' Meeting.

Direction and management by the Board of Executive Directors

- Board of Executive Directors strictly separate from the Supervisory Board
- Responsible for company management
- Sets corporate goals and strategic direction

The Board of Executive Directors is responsible for the management of the company, and represents BASF SE in business undertakings with third parties. BASF's Board of Executive Directors is strictly separated from the Supervisory Board, which monitors the Board of Executive Directors' activities and decides on its composition. A member of the Board of Executive Directors cannot simultaneously be a member of the Supervisory Board. As the central duty of company management, the Board of Executive Directors agrees on the corporate goals and strategic direction of the BASF Group as well as its individual business areas; determines the company's internal organization; and decides on the composition of management on the levels below the Board. It also manages and monitors BASF Group business by planning and setting the corporate budget, allocating resources and management capacities, monitoring and making decisions on significant individual measures, and supervising operational management.

The Board's actions and decisions are geared toward the company's best interests. It is committed to the goal of sustainably increasing the company's value. Among the Board's responsibilities is the preparation of the Consolidated and Separate Financial Statements of BASF SE and reporting on the company's financial and nonfinancial performance. Furthermore, it must ensure that the company's activities comply with the applicable legislation and regulatory requirements, as well as internal corporate directives. This includes

the establishment of appropriate systems for control, compliance and risk management as well as establishing a company-wide compliance culture with undisputed standards.

Decisions that are reserved for the Board as a whole by law, through the Board of Executive Directors' Rules of Procedure or through resolutions adopted by the Board, are made at regularly held Board meetings called by the Chairman of the Board of Executive Directors. Board decisions are based on detailed information and analyzes provided by the business areas and specialist units, and, if deemed necessary, by external consultants. Board decisions can generally be made via a simple majority. In the case of a tied vote, the casting vote is given by the Chairman of the Board. However, the Chairman of the Board does not have the right to veto the decisions of the Board of Executive Directors. Members of the Board of Executive Directors are authorized to make decisions individually in their assigned areas of responsibility.

The Board can set up Board committees to consult and decide on individual issues such as proposed material acquisitions or divestitures; these must include at least three members of the Board of Executive Directors. For the preparation of important decisions, such as those on acquisitions, divestitures, investments and personnel, the Board has various commissions at the level below the Board that carefully assess the planned measure and evaluate the associated opportunities and risks, and based on this information, report and make recommendations to the Board – independently of the affected business area.

The Board of Executive Directors informs the Supervisory Board regularly, without delay and comprehensively, of all issues important to the company with regard to planning, business development, risk situation, risk management and compliance. Furthermore, the Board of Executive Directors coordinates the company's strategic orientation with the Supervisory Board.

The Statutes of BASF SE and the Supervisory Board have defined certain transactions that require the Board of Executive Directors to obtain the Supervisory Board's approval prior to their conclusion. Such cases include the acquisition and disposal of enterprises and parts of enterprises, as well as the issue of bonds or comparable financial instruments. However, this is only necessary if the acquisition or disposal price or the amount of the issue in an individual case exceeds 3% of the equity reported in the last approved Consolidated Financial Statements of the BASF Group.

For more information on risk management, see the Forecast from page 133 onward

The members of the Board of Executive Directors, including their areas of responsibility and memberships on the supervisory bodies of other companies, are listed from page 159 onward

Compensation of the Board of Executive Directors is described in detail in the Compensation Report from page 169 onward

Competence profile, diversity concept and succession planning for the Board of Executive Directors

The Supervisory Board works hand in hand with the Board of Executive Directors to ensure long-term succession planning for the composition of the Board of Executive Directors. BASF aims to fill most Board positions with candidates from within the company. It is the task of the Board of Executive Directors to propose a sufficient number of suitable candidates to the Supervisory Board.

BASF's long-term succession planning is guided by the corporate strategy. It is based on systematic management development characterized by the following:

- Early identification of suitable candidates of different professional backgrounds, nationalities and genders
- Systematic development of leaders through the successful assumption of tasks with increasing responsibility, where possible in different business areas, regions and functions
- Desire to shape strategic and operational decisions, and proven success in doing so, as well as leadership skills, especially under challenging business conditions
- Role model function in putting our corporate values into practice

Two-tier management system of BASF SE



The aim is to enable the Supervisory Board to ensure a reasonable level of diversity with respect to education and professional experience, cultural background, international representation, gender and age when appointing members of the Board of Executive Directors. Independent of these individual criteria, the Supervisory Board is convinced that ultimately, only a holistic approach can determine an individual's suitability for appointment to the Board of Executive Directors of BASF SE. The overall aim is to ensure that the Board of Executive Directors as a whole has the following profile, which serves as a diversity concept:

- Many years of management experience in scientific, technical and commercial fields
- International experience based on background and/or professional experience
- At least one female Board member
- A balanced age distribution to ensure the continuity of the Board's work and enable seamless succession planning

The number of Board members is based on the insights gained by BASF as a company with an integrated leadership culture and is determined by the needs arising from cooperation within the Board of Executive Directors. In May 2018, this was reduced from eight to seven members in the course of the changes to the composition of the Board of Executive Directors, and again in January 2020 to six members as part of ongoing efficiency measures. The standard age limit for members of the Board of Executive Directors is 63.

The current composition of the Board of Executive Directors meets the competence profile and the requirements of the diversity concept in full.

Supervision of company management by the Supervisory Board

- **Supervisory Board appoints, monitors and advises Board of Executive Directors**
- **Four Supervisory Board committees**

The Supervisory Board appoints the members of the Board of Executive Directors and supervises and advises the Board of Executive Directors on management issues. As members of the Supervisory Board cannot simultaneously be on the Board of Executive Directors, a high level of autonomy is already structurally ensured with regard to the supervision of the Board of Executive Directors.


In addition to the SE Council Regulation, the relevant legal basis for the size and composition of the Supervisory Board is provided by the Statutes of BASF SE and the Agreement Concerning the Involvement of Employees in BASF SE (Employee Participation Agreement), which also includes the regulations applicable to BASF for implementing the statutory gender quota for the Supervisory Board. The German Codetermination Act does not apply to BASF as a European stock corporation (Societas Europaea, SE).

The Supervisory Board of BASF SE comprises 12 members. Six members are elected by the shareholders at the Annual Shareholders' Meeting. The remaining six members are elected by the BASF Europa Betriebsrat (BASF Works Council Europe), the European employee representation body of the BASF Group. It is planned to reduce the period of appointment for the members of the Supervisory Board from five to four years. The aim is to ensure that the maximum membership duration up to which a Supervisory Board member can be classified as independent continues to correspond to a total of three election terms. The Supervisory Board reduced this duration from 15 to 12 years in accordance with the new version of the German Corporate Governance Code, which was revised in 2019 (2020 Code). A change to the Statutes to this effect will be proposed to the Annual Shareholders' Meeting 2020.

The meetings of the Supervisory Board and its committees are called by their chairpersons and, independently, at the request of one of their members or the Board of Executive Directors. The shareholder and employee representatives of the Supervisory Board prepare for Supervisory Board meetings in separate preliminary discussions in each case. Resolutions of the Supervisory Board are passed by a simple majority vote of the participating members. In the event of a tie, the vote of the Chairman of the Supervisory Board, who must always be a shareholder representative, shall be the casting vote. This resolution process is also applicable for the appointment and dismissal of members of the Board of Executive Directors by the Supervisory Board. Resolutions can, as needed, also be made in writing or through other means of communication outside of the meetings, as long as no member objects to this form of passing a resolution.

The Board of Executive Directors regularly informs the Supervisory Board about matters such as the course of business and expected developments, the financial position and results of operations, corporate planning, the implementation of the corporate strategy, business opportunities and risks, and risk and compliance management. The Supervisory Board has embedded the main reporting requirements in an information policy. The Chairman of the Supervisory Board is in regular contact with the Board of Executive Directors, especially with its chairman, outside of meetings as well.

BASF SE's Supervisory Board has established a total of four Supervisory Board Committees: the Personnel Committee, the Audit Committee, the Nomination Committee and the Strategy Committee.

 A list of the members of the Supervisory Board of BASF SE indicating which members are shareholder or employee representatives and their appointments to the supervisory bodies of other companies can be found from page 160 onward

The compensation of the Supervisory Board is presented in the Compensation Report from page 174 onward

 The Statutes of BASF SE and the Employee Participation Agreement can be found at basf.com/statutes and basf.com/en/corporategovernance

Personnel Committee

Members

Dr. Jürgen Hambrecht (chairman), Michael Diekmann (until May 3, 2019), Franz Fehrenbach (since May 3, 2019), Sinischa Horvat, Michael Vassiliadis

Duties

- Prepares the appointment of members to the Board of Executive Directors by the Supervisory Board as well as the employment contracts to be entered into with members of the Board of Executive Directors
- When making recommendations for appointments to the Board of Executive Directors, considers professional qualifications, international experience and leadership skills as well as long-term succession planning, diversity, and especially the appropriate consideration of women
- Prepares the resolutions made by the Supervisory Board with regard to the system and amount of compensation paid to members of the Board of Executive Directors

Audit Committee

Members

Dame Alison Carnwath DBE (chairman), Tatjana Diether, Franz Fehrenbach (until February 29, 2020), Anke Schäferkordt (since March 1, 2020), Michael Vassiliadis

Duties

- Prepares the negotiations and resolutions of the Supervisory Board for the approval of the Financial Statements, the Consolidated Financial Statements and the Management's Reports including the Nonfinancial Statements and discusses the quarterly statements and the half-year financial report with the Board of Executive Directors prior to their publication
- Deals with monitoring the financial reporting process, the annual audit, the effectiveness of the internal control system, the risk

management system, and the internal auditing system as well as compliance issues

- Is responsible for business relations with the company's external auditor: prepares the Supervisory Board's proposal to the Annual Shareholders' Meeting regarding the selection of an auditor, monitors the auditor's independence, defines the focus areas of the audit together with the auditor, negotiates auditing fees, evaluates the quality of the audit, and establishes the conditions for the provision of the auditor's nonaudit services; the chairman of the Audit Committee regularly discusses this with the auditor outside of meetings as well
- Deals with follow-up assessments of acquisition and investment projects
- Is authorized to request any information that it deems necessary from the auditor or Board of Executive Directors; can also view all of BASF's business documents and examine these and all other assets belonging to BASF. The Audit Committee can also engage experts such as auditors or lawyers to carry out these inspections

Financial experts

Dame Alison Carnwath DBE and Franz Fehrenbach are members with special knowledge of, and experience in, applying accounting and reporting standards and internal control methods pursuant to the German Corporate Governance Code.

Nomination Committee

Members

Dr. Jürgen Hambrecht (chairman), Prof. Dr. François Diederich (until May 3, 2019), Prof. Dr. Thomas Carell (since May 3, 2019), Dame Alison Carnwath DBE, Michael Diekmann (until May 3, 2019), Dr. Alexander C. Karp (since May 3, 2019), Franz Fehrenbach, Anke Schäferkordt

Duties

- Identifies suitable candidates for the Supervisory Board based on objectives for the composition decided on by the Supervisory Board
- Prepares the recommendations made by the Supervisory Board for the election of Supervisory Board members for the Annual Shareholders' Meeting

Strategy Committee

Members

Dr. Jürgen Hambrecht (chairman), Dame Alison Carnwath DBE, Michael Diekmann (until May 3, 2019), Franz Fehrenbach (since May 3, 2019), Waldemar Helber, Sinischa Horvat, Michael Vassiliadis

Duties

- Handles the further development of the company's strategy
- Prepares resolutions of the Supervisory Board on the company's major acquisitions and divestitures

Meetings and meeting attendance

In the 2019 business year, meetings were held as follows:

- The Supervisory Board met six times.
- The Personnel Committee met four times.
- The Audit Committee met five times.
- The Nomination Committee met once.
- The Strategy Committee met once.

With the exception of one meeting, at which one member was absent, all respective members attended all meetings of the Supervisory Board. With the exception of the meeting of the Nomination Committee, at which one member was absent, all respective

members attended all meetings of the Supervisory Board's committees.

For more information on the Supervisory Board's activities and resolutions in the 2019 business year, see the Report of the Supervisory Board from page 176 onward

For an individual overview of meeting attendance, see basf.com/supervisoryboard/meetings

The Supervisory Board's Rules of Procedure and its committees can be found at basf.com/supervisoryboard

Competence profile, diversity concept and objectives for the composition of the Supervisory Board

■ Composition criteria: professional and personal qualifications, diversity, and independence

One important concern of good corporate governance is to ensure that seats on the responsible corporate bodies, the Board of Executive Directors and the Supervisory Board, are appropriately filled. On December 21, 2017, the Supervisory Board therefore agreed on objectives for the composition, the competence profile and the diversity concept of the Supervisory Board in accordance with section 5.4.1 of the German Corporate Governance Code in the version dated February 7, 2017, and section 289f(2) no. 6 of the German Commercial Code (HGB). These were expanded on December 19, 2019, in particular with respect to the criteria for assessing independence, based on the new recommendations of the German Corporate Governance Code, which was revised and amended in 2019 (2020 Code). The guiding principle for the composition of the Supervisory Board is to ensure qualified supervision and guidance for the Board of Executive Directors of BASF SE. Candidates shall be proposed to the Annual Shareholders' Meeting for election to the Supervisory Board who can, based on their professional expertise and experience, integrity, commitment, independence and character, successfully perform the work of a supervisory board member at an international chemical company.

Competence profile

The following requirements and objectives are considered essential to the composition of the Supervisory Board as a collective body:

- Leadership experience in managing companies, associations and networks
- Members' collective knowledge of the chemical sector and the related value chains
- Appropriate knowledge within the body as a whole of finance, accounting, financial reporting, law and compliance as well as one independent member with accounting and auditing expertise ("financial expert") within the meaning of section 100(5) of the German Stock Corporation Act (AktG)
- At least one member with in-depth experience in innovation, research & development and technology
- At least one member with in-depth experience in digitalization, information technology, business models and start-ups
- At least one member with in-depth experience in human resources, society, communications and the media
- Specialist knowledge and experience in sectors outside of the chemical industry

For more information on the Supervisory Board's competence profile, see basf.com/supervisoryboard

Diversity concept

The Supervisory Board strives to achieve a reasonable level of diversity with respect to character, gender, international representation, professional background, specialist knowledge and experience as well as age distribution, and takes the following composition criteria into account:

- At least 30% women and 30% men
- At least 30% of members have international experience based on their background or professional experience
- At least 50% of members have different educational backgrounds and professional experience
- At least 30% under the age of 60

Further composition objectives

- **Character and integrity:** All members of the Supervisory Board must be personally reliable and have the knowledge and experience required to diligently and independently perform the work of a supervisory board member.

- **Availability:** Each member of the Supervisory Board ensures that they invest the time needed to properly perform their role as a member of the Supervisory Board of BASF SE. The statutory limits on appointments to governing bodies and the recommendations of the German Corporate Governance Code must be complied with when accepting further appointments.
- **Age limit and period of membership:** Persons who have reached the age of 72 on the day of election by the Annual Shareholders' Meeting should generally not be nominated for election. Membership on the Supervisory Board should generally not exceed three regular statutory periods in office; this currently corresponds to 15 years.
- **Independence:** To ensure the independent monitoring and consultation of the Board of Executive Directors, the Supervisory Board should have an appropriate number of independent members on the board as a whole, and an appropriate number of independent shareholder representatives. The Supervisory Board deems this to be the case if more than half of the shareholder representatives and at least eight members of the Supervisory Board as a whole can be considered independent. Effective immediately, the Supervisory Board's assessment of independence is based on the criteria in the new version of the German Corporate Governance Code, which was revised in 2019 (2020 Code). Among other things, this means that a member of the Supervisory Board is no longer considered independent if they have been a member of the board for 12 years or longer. The previous threshold was a membership duration of 15 years. The Supervisory Board has additionally defined the following principles to clarify the meaning of independence: The independence of employee representatives is not compromised by their role as an employee representative or employment by BASF SE or a Group company. Prior membership of the Board of Executive Directors does not preclude independence following the expiry of the statutory cooling-off period of two years. Material transactions between a Supervisory Board member or a related party or undertaking of the Supervisory Board member on the one hand, and BASF SE or a BASF Group company on the other, exclude a member of the Supervisory

Board from being qualified as independent. A material transaction is defined as one or more transactions in a single calendar year with a total volume of 1% or more of the sales of the companies involved in each case. In the same way, if a Supervisory Board member or a related party of a Supervisory Board member has a personal service or consulting agreement with BASF SE or one of its Group companies with an annual compensation of over 50% of the Supervisory Board compensation, or a Supervisory Board member or a related party of a Supervisory Board member holds more than 20% of the shares in a company in which BASF SE is indirectly or directly the majority shareholder, they likewise do not qualify as independent.

Status of implementation

According to the Supervisory Board's own assessment, its current composition meets all of the requirements of the competence profile. With the election of the new Supervisory Board member Alexander C. Karp at the Annual Shareholders' Meeting 2019, the competence area of digitalization – which is key to the future viability of BASF – is now also fully covered.

According to the Supervisory Board's assessment, 11 of the 12 current members are considered independent based on the above criteria. Only one Supervisory Board member is no longer classified as independent: Franz Fehrenbach has been a member of the Supervisory Board since January 2008 and thus no longer meets the newly applied criterion of a membership duration of less than 12 years as of January 2020. To continue to ensure the full independence of the Audit Committee, the Supervisory Board therefore resolved to appoint Anke Schäferkordt to the Audit Committee as the second shareholder representative in place of Franz Fehrenbach, effective March 1, 2020.

For more information on the statutory minimum quotas for the number of women and men on the Supervisory Board, see the following section

The independent Supervisory Board members are named under Management and Supervisory Boards from page 159 onward

Commitments to promote the participation of women in leadership positions at BASF SE

■ Minimum quota on Supervisory Board, target figures for Board of Executive Directors and top management

The supervisory board of a publicly listed European stock corporation (SE) that is composed of the same number of shareholder and employee representatives must, according to section 17(2) of the SE Implementation Act, consist of at least 30% women and 30% men. Since the 2018 Annual Shareholders' Meeting, the Supervisory Board of BASF SE comprises four women, of whom two are shareholder representatives and two are employee representatives, and eight men; its composition meets the statutory requirements.

As a target figure for the Board of Executive Directors, the Supervisory Board determined that, in accordance with section 111(5) AktG for the second target-attainment period after the law's entry into force, which began on January 1, 2017, the Board of Executive Directors should continue to have at least one female member. This represented 12.5% on the date the target was set (based on eight members of the Board of Executive Directors), and represents 16.7% as of January 1, 2020 (based on six Board members). The Board of Executive Directors also decided on target figures for the proportion of women in the two management levels below the Board of Executive Directors of BASF SE: Women are to make up 12.1% of the leadership level directly below the Board, and the level below that is to comprise 7.3% women. This corresponds to the status at the time these target figures were determined. The deadline for achieving the goals for the second target-attainment period was set for December 31, 2021.

BASF views the further development and promotion of women as a global duty independent of individual Group companies. We set ourselves ambitious global goals for this and made further progress in 2019. BASF will continue working on expanding the percentage

of women in its leadership team. The company is carrying out, and constantly enhancing, worldwide measures to this effect.

- 📖 For more information on women in leadership positions in the BASF Group worldwide, see page 27
- 📖 For more information on the inclusion of diversity, including promotion of women, see the chapter on Employees in the Management's Report on page 128
- 📖 The November 2015 Employee Participation Agreement relevant to the composition of the Supervisory Board is available at basf.com/en/corporategovernance

Shareholders' rights

■ Shareholders' rights of co-administration and supervision at the Annual Shareholders' Meeting

■ One share, one vote

Shareholders exercise their rights of co-administration and supervision at the Annual Shareholders' Meeting, which usually takes place within the first five months of the business year. The Annual Shareholders' Meeting elects half of the members of the Supervisory Board and, in particular, resolves on the formal discharge of the Board of Executive Directors and the Supervisory Board, the distribution of profits, capital measures, the authorization of share buybacks, changes to the Statutes and the selection of the auditor.

Each BASF SE share represents one vote. All of BASF SE's shares are registered shares. Shareholders are obliged to have themselves entered with their shares into the company share register and to provide the information necessary for registration in the share register according to the German Stock Corporation Act. There are no registration restrictions and there is no limit to the number of shares that can be registered to one shareholder. Only the persons listed in the share register are entitled to vote as shareholders. Listed shareholders may exercise their voting rights at the Annual Shareholders' Meeting either personally, through a representative of their choice or through a company-appointed proxy authorized by the shareholders to vote according to their instructions. Individual instructions are only forwarded to the company on the morning of the day of the Annual Shareholders' Meeting. Voting rights can be exercised according to shareholders' instructions by company-

appointed proxies until the end of the agenda discussion during the Annual Shareholders' Meeting. There are neither voting caps to limit the number of votes a shareholder may cast nor special voting rights. BASF has fully implemented the principle of "one share, one vote." All shareholders entered in the share register are entitled to participate in the Annual Shareholders' Meetings, to have their say concerning any item on the agenda and to request information about company issues insofar as this is necessary to make an informed judgment about the item on the agenda under discussion. Registered shareholders are also entitled to file motions pertaining to proposals for resolutions made by the Board of Executive Directors and Supervisory Board at the Annual Shareholders' Meeting and to contest resolutions of the Meeting and have them evaluated for their lawfulness in court. Shareholders who hold at least €500,000 of the company's share capital, a quota corresponding to 390,625 shares, are furthermore entitled to request that additional items be added to the agenda of the Annual Shareholders' Meeting.

Implementation of the German Corporate Governance Code

■ BASF SE follows all recommendations of German Corporate Governance Code

BASF advocates responsible corporate governance that focuses on sustainably increasing the value of the company. BASF SE follows all of the recommendations of the German Corporate Governance Code in the version dated February 7, 2017, the version in force on submission of the Declaration of Conformity. The additional recommendations of the new German Corporate Governance Code, which was revised in 2019 and is still to be published in the Federal Gazette (Bundesanzeiger) (2020 Code), are likewise largely already met. The remaining necessary implementation measures have already been initiated. In the same manner, BASF follows nearly all of the nonobligatory suggestions of both of the above versions of the German Corporate Governance Code. We have not implemented the suggestion to enable shareholders to follow the proceedings of the entire Annual Shareholders' Meeting online.

The Annual Shareholders' Meeting is publicly accessible via online broadcast until the end of the speech by the Chairman of the Board of Executive Directors. The subsequent discussion of items on the agenda is not accessible online in order to preserve the character of the Annual Shareholders' Meeting as a meeting attended by our shareholders on-site.

 The joint Declaration of Conformity 2019 by the Board of Executive Directors and Supervisory Board of BASF SE is rendered on page 183

For more information on the Declaration of Conformity 2019, the implementation of the Code's suggestions and the German Corporate Governance Code, see basf.com/en/corporategovernance

Disclosures according to section 315a(1) of the German Commercial Code (HGB) and explanatory report of the Board of Executive Directors according to section 176(1) sentence 1 of the German Stock Corporation Act (AktG)

As of December 31, 2019, the subscribed capital of BASF SE was €1,175,652,728.32, divided into 918,478,694 registered shares with no par value. Each share entitles the holder to one vote at the Annual Shareholders' Meeting. Restrictions on the right to vote or transfer shares do not exist. The same rights and duties apply to all shares. According to the Statutes, shareholders are not entitled to receive share certificates. There are neither different classes of shares nor shares with preferential voting rights (golden shares).

The appointment and dismissal of members of the Board of Executive Directors is legally governed by the regulations in Article 39 of the SE Council Regulation, section 16 of the SE Implementation Act and sections 84 and 85 AktG as well as Article 7 of the Statutes of BASF SE. Accordingly, the Supervisory Board determines the number of members of the Board of Executive Directors (at least two), appoints the members of the Board of Executive Directors, and can nominate a chairperson, as well as one or more vice chairpersons. The members of the Board of Executive Directors are appointed for a maximum of five years. As a general rule, the initial term of appointment for Board members at BASF is three years. Reappointments are permissible. The Supervisory Board can dis-

miss a member of the Board of Executive Directors if there is serious cause to do so. Serious cause includes, in particular, a gross breach of the duties pertaining to the Board of Executive Directors and a vote of no confidence by the Annual Shareholders' Meeting. The Supervisory Board decides on appointments and dismissals according to its own best judgment.

According to Article 59(1) of the SE Council Regulation, amendments to the Statutes of BASF SE require a resolution of the Annual Shareholders' Meeting adopted with at least a two-thirds majority of the votes cast, provided that the legal provisions applicable to German stock corporations under the German Stock Corporation Act do not stipulate or allow for larger majority requirements. In the case of amendments to the Statutes, section 179(2) of the German Stock Corporation Act requires a majority of at least three-quarters of the subscribed capital represented. Pursuant to Article 12(6) of the Statutes of BASF SE, the Supervisory Board is authorized to resolve on amendments to the Statutes that merely concern their wording. This applies in particular to the adjustment of the share capital and the number of shares after the redemption of repurchased BASF shares and after a new issue of shares from authorized capital.

By way of a resolution of the Annual Shareholders' Meeting on May 3, 2019, the Board of Executive Directors is authorized, with the consent of the Supervisory Board, to increase, until May 2, 2024, on a one-off basis or in portions on a number of occasions, the company's share capital by a total of up to €470 million by issuing new shares against contributions in cash or in kind (authorized capital). A right to subscribe to the new shares shall be granted to shareholders. This can also be achieved by a credit institution acquiring the new shares with the obligation to offer these to shareholders (indirect subscription right). The Board of Executive Directors is authorized to exclude the statutory subscription right of shareholders to a maximum amount of a total of 10% of share capital in certain exceptional cases that are defined in Article 5(8) of the BASF SE Statutes. This applies in particular if, for capital increases

in return for cash contributions, the issue price of the new shares is not substantially lower than the stock market price of BASF shares and the total number of shares issued under this authorization does not exceed 10% of the shares currently in issue or, in eligible individual cases, to acquire companies or shares in companies in exchange for surrendering BASF shares.

By way of a resolution of the Annual Shareholders' Meeting on May 12, 2017, the share capital was increased conditionally by up to €117,565,184 by issuing up to 91,847,800 new shares. The contingent capital increase serves to grant shares to the holders of convertible bonds or warrants attached to bonds with warrants of BASF SE or a subsidiary, which the Board of Executive Directors is authorized to issue up to May 11, 2022, by way of a resolution of the Annual Shareholders' Meeting on May 12, 2017. A right to subscribe to the bonds shall be granted to shareholders. The Board of Executive Directors is authorized to exclude the subscription right in certain exceptional cases that are defined in Article 5(9) of the BASF SE Statutes.

At the Annual Shareholders' Meeting on May 12, 2017, the Board of Executive Directors was authorized to purchase up to 10% of the shares in issue at the time of the resolution (10% of the company's share capital) until May 11, 2022. At the discretion of the Board of Executive Directors, the purchase can take place on the stock exchange or by way of a public purchase offer directed to all shareholders. The Board of Executive Directors is authorized to sell the repurchased company shares (a) through a stock exchange, (b) through a public offer directed to all shareholders and – with the approval of the Supervisory Board – to third parties, (c) for a cash payment that is not significantly lower than the stock exchange price at the time of sale and (d) for contributions in kind, particularly in connection with the acquisition of companies, parts of companies or shares in companies or in connection with mergers. In the cases specified under (c) and (d), the shareholders' subscription right is excluded. The Board of Executive Directors is furthermore authorized to retire the shares bought back and to reduce the share capital by

the proportion of the share capital accounted for by the retired shares.

Bonds issued by BASF SE grant the bearer the right to request early repayment of the bonds at nominal value if, after the date of issue of the bond, one person – or several persons acting together – hold or acquire a volume of BASF SE shares that corresponds to more than 50% of the voting rights (change of control), and one of the rating agencies named in the bond's terms and conditions withdraws its rating of BASF SE or the bond, or reduces it to a noninvestment grade rating within 120 days of the change of control event.

In the event of a change of control, members of the Board of Executive Directors shall, under certain additional conditions, receive compensation (details of which are listed in the Compensation Report on page 172). A change of control is assumed when a shareholder informs BASF of a shareholding of at least 25% or the increase of such a holding. This change of control compensation will no longer be awarded to outgoing members of the Board of Executive Directors effective January 1, 2020, with the introduction of the amended compensation system for the Board of Executive Directors, which will be submitted for approval to the Annual Shareholders' Meeting on April 30, 2020.

Employees of BASF SE and its subsidiaries who are classed as senior executives will receive a severance payment if their contract of employment is terminated by BASF within 18 months of a change of control event, provided the employee has not given cause for the termination. The employee whose service contract has been terminated in such a case will receive a maximum severance payment of 1.5 times the annual salary (fixed component) depending on the number of months that have passed since the change of control event. The remaining specifications stipulated in section 315a(1) HGB refer to situations that are not applicable to BASF SE.

For more information on bonds issued by BASF SE, see basf.com/bonds

Directors' and officers' liability insurance

BASF SE has taken out liability insurance that covers the activities of members of the Board of Executive Directors and the Supervisory Board (directors' and officers' liability insurance). This policy provides for the level of deductibles for the Board of Executive Directors as prescribed by section 93(2) sentence 3 AktG and for the level of deductibles for the Supervisory Board as recommended in section 3.8(3) of the German Corporate Governance Code in the version dated February 7, 2017 (10% of damages up to one-and-a-half times the fixed annual compensation).

Share ownership by members of the Board of Executive Directors and the Supervisory Board

No member of the Board of Executive Directors or the Supervisory Board owns shares in BASF SE and related options or other derivatives that account for 1% or more of the share capital. Furthermore, the total volume of BASF SE shares and related financial instruments held by members of the Board of Executive Directors and the Supervisory Board accounts for less than 1% of the shares issued by the company.

Share dealings of the Board of Executive Directors and Supervisory Board¹

As legally stipulated by Article 19(1) MAR, all members of the Board of Executive Directors and the Supervisory Board as well as certain members of their families are required to disclose the purchase or sale of financial instruments of BASF SE (e.g., shares, bonds, options, forward contracts, swaps) to the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht) and to the company if transactions within the calendar year exceed the threshold of €5,000. In 2019, a total of 26 purchases by members of the Board of Executive Directors and the Supervisory Board and members of their families subject to disclosure were reported as directors' dealings, involving between three and 10,000

BASF shares or BASF ADRs. The price per share was between €56.85 and €68.21. The volume of the individual trades was between €188.31 and €585.500. The disclosed share transactions are published on BASF SE's website.

For more information on securities transactions reported in 2019, see basf.com/en/directorsdealings
An overview of the BASF shares held by individual members of the Board of Executive Directors can be found at basf.com/shares-held

Information on the auditor

The Annual Shareholders' Meeting of May 3, 2019, once again elected KPMG AG Wirtschaftsprüfungsgesellschaft as the auditor of the BASF Group Consolidated Financial Statements and Separate Financial Statements of BASF SE for the 2019 business year, as well as the corresponding management's reports. KPMG member firms also audit the majority of companies included in the Consolidated Financial Statements. KPMG has been the continuous auditor of BASF SE since the 2006 Financial Statements. For this reason, a public call to tender was issued in 2015 to all auditors for the audit of the 2016 Consolidated and Separate Financial Statements, in line with the E.U. Regulation 537/2014 of April 16, 2014. Based on the results of the tendering process, the Audit Committee recommended to the Supervisory Board that it once again propose KPMG for election. After completing the tendering process, KPMG can now be proposed for election at the Annual Shareholders' Meeting as BASF's auditor without further tendering processes up to and including the 2025 business year. Alexander Bock has been the auditor responsible for the Consolidated Financial Statements since auditing the 2017 Financial Statements. Since the 2017 Financial Statements, the auditor responsible for the Separate Financial Statements has been Dr. Stephanie Dietz. The total fee paid to KPMG and auditing firms of the KPMG group by BASF SE and other BASF Group companies for non-audit services, in addition to the auditing fee, was €0.9 million in 2019. This represents around 4.6% of the fees for auditing the financial statements.

For more information, see Note 33 to the Consolidated Financial Statements on page 288

¹ Obligatory reportable and publishable directors' dealings under Article 19(1) of the E.U. Market Abuse Regulation 596/2014 (MAR)

Compliance

Our Group-wide Compliance Program aims to ensure adherence to legal regulations and the company's internal guidelines. Our employee Code of Conduct firmly embeds these mandatory standards into day-to-day business. Members of the Board of Executive Directors are also expressly obligated to follow these principles.

Compliance Program and Code of Conduct

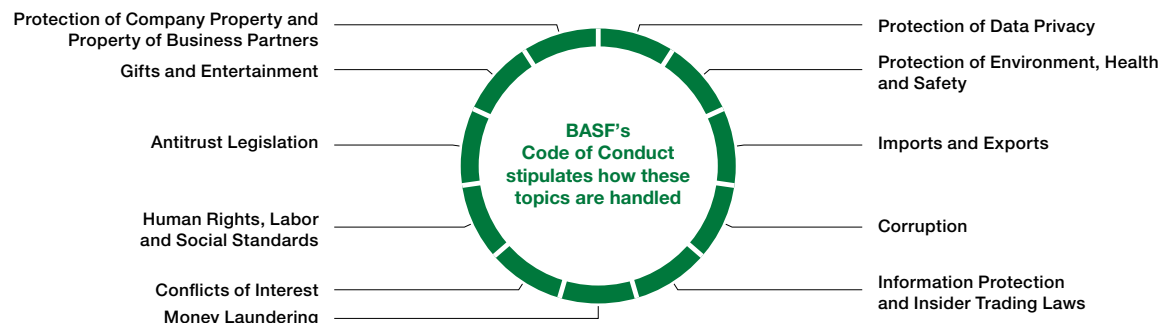
- Integrated into corporate values
- Regular compliance training for employees

BASF's Compliance Program is based on our corporate values and voluntary commitments, as well as international standards. It describes our commitment to responsible conduct and expectations around how all BASF employees interact with business partners, officials, colleagues and the community. At the core of our Compliance Program is the global, standardized Code of Conduct received by every employee. All employees and managers are obligated to adhere to its guidelines, which cover topics ranging from corruption and antitrust laws to human rights, labor and social standards, conflicts of interest and trade control, and protection of data privacy.

Abiding by compliance standards is the foundation of responsible leadership. This has also been embedded in our values. We are convinced that compliance with these standards will not only prevent the disadvantages associated with violations, such as penalties and fines; we also view compliance as the right path toward securing our company's long-term success.

Our efforts are principally aimed at preventing violations from the outset. We perform systematic risk assessments to identify the risk of compliance violations, including corruption risks. These are

BASF's Code of Conduct



conducted at divisional, regional and country levels. The regular compliance audits performed by the Corporate Audit department are another source for the systematic identification of risks. These risks are documented in the relevant risk or audit report. The same applies to specific risk minimization measures as well as the time frame for their implementation.

One key element in the prevention of compliance violations is compulsory training and workshops held as classroom or online courses. All employees are required within a prescribed time frame to take part in basic compliance training, refresher courses and special tutorials dealing with, for example, antitrust legislation, taxes or trade control regulations. Training senior executives is a particular focus. For instance, all newly appointed senior executives attend mandatory classroom training. Course materials and formats are constantly updated, taking into account the specific risks of individual target groups and business areas. In total, more than 55,000 participants worldwide received around 64,000 hours of compliance training in 2019.

For more information on the BASF Code of Conduct, see basf.com/code_of_conduct

Code of Conduct

forms core of our Compliance Program

More than 55,000

Participants in compliance training

86 internal audits

conducted on compliance

Compliance culture at BASF

We firmly believe that for corporate responsibility to be a success, there must be an active culture of living these guidelines within the company. Thanks to the early introduction of our compliance standards, which were consolidated in our global Code of Conduct in 2013, these are firmly established and recognized. We expect all employees to act in line with these compliance principles. Managers place a key role here – they serve as an example of and communicate our values and culture both internally and externally.

Monitoring adherence to our compliance principles

BASF's Chief Compliance Officer (CCO) reports directly to the Chairman of the Board of Executive Directors and manages the further development of our global compliance organization and our Compliance Management System. The CCO is supported in this task by more than 100 compliance officers worldwide in the regions and countries as well as in the divisions. Material compliance topics are regularly discussed in the compliance committees established at global and regional level. The CCO reports to the Supervisory Board's Audit Committee in at least one of its meetings each year on the status of the Compliance Program as well as any major developments. In the event of significant incidents, the Audit Committee is immediately informed by the Board of Executive Directors.

We particularly encourage our employees to actively and promptly seek guidance if in doubt. They can consult their managers, dedicated specialist departments, such as the Legal department, and company compliance officers. We have also set up more than 50 external hotlines worldwide that our employees can use – including anonymously – to report potential violations of laws or company guidelines. All hotlines are also open to the public. Each concern is documented according to specific criteria, properly investigated in line with standard internal procedures and answered as quickly as

possible. The outcome of the investigation as well as any measures taken are documented accordingly and included in internal reports.

In 2019, 408 calls and emails were received by our external hotlines (2018: 397). The information received related to all categories of our Code of Conduct, including environmental and human rights issues, corruption and handling of company property. We carefully investigated all cases of suspected misconduct that came to our attention and took countermeasures on a case-by-case basis. These included, for example, improved control mechanisms, additional informational and training measures, clarification and expansion of the relevant internal regulations, as well as disciplinary measures as appropriate. Most of the justified cases related to personal misconduct in connection with the protection of company property, inappropriate handling of conflicts of interests or gifts and invitations. In such isolated cases, we took disciplinary measures in accordance with uniform internal standards and also pursued claims for damages where there were sufficient prospects of success. In 2019, violations of our Code of Conduct led to termination of employment in a total of 52 cases (2018: 48) across all employee groups including senior executives.

BASF's Corporate Audit department monitors adherence to compliance principles, covering all areas in which compliance violations could occur. They check that employees uphold regulations and make sure that the established processes, procedures and monitoring tools are appropriate and sufficient to minimize potential risks or preclude violations in the first place. In 2019, 86 Group-wide audits of this kind were performed (2018: 84). Our compliance management system itself is also regularly audited by the internal Corporate Audit department, most recently in November 2018. Overall, the audits confirmed the effectiveness of the compliance management system.

We monitor our business partners in sales for potential compliance risks based on the global Guideline on Business Partner Due Diligence using a checklist, a questionnaire and an internet-based analysis. The results are then documented. If business partners are not prepared to answer the questionnaire, we do not enter into a business relationship with them. A dedicated global Supplier Code of Conduct applies to our suppliers, which covers compliance with environmental, social and corporate governance standards, among other requirements. As part of our trade control processes, we also check whether persons, companies or organizations appear on sanction lists due to suspicious or illegal activities, and whether there are business processes with business partners from or in countries under embargo.

We support the United Nations' Guiding Principles on Business and Human Rights and are constantly working to enhance our internal guidelines and processes in keeping with these principles. For example, there is an internal guideline to respect international labor and social standards that is applicable throughout the Group. Outside of our company, too, we support respect for human rights and the fight against corruption. We are a founding member of the United Nations Global Compact. As a member of Transparency International Deutschland and the Partnering Against Corruption Initiative (PACI) of the World Economic Forum, we assist in the implementation of these organizations' objectives.

🔗 For more information on the Supplier Code of Conduct and supplier assessments, see page 102 onward

🔗 For more information on human rights and labor and social standards, see [basf.com/human_rights](https://www.basf.com/human_rights)

Management and Supervisory Boards

Board of Executive Directors

There were seven members on the Board of Executive Directors of BASF SE as of December 31, 2019. As of January 1, 2020, the Board of Executive Directors comprises six members. The responsibilities within the Board have been reallocated.

Dr. Martin Bruder Müller

Chairman of the Board of Executive Directors

Degree: Chemistry, 58 years old, 32 years at BASF

Responsibilities until December 31, 2019: Legal, Taxes, Insurance & Intellectual Property; Corporate Development; Corporate Communications & Government Relations; Senior Executive Human Resources; Investor Relations; Compliance; Corporate Technology & Operational Excellence; Innovation Management

Responsibilities since January 1, 2020: Corporate Legal, Compliance, Tax & Insurance; Corporate Development; Corporate Communications & Government Relations; Corporate Human Resources; Corporate Investor Relations

First appointed: 2006, **term expires:** 2023

Dr. Hans-Ulrich Engel

Vice Chairman of the Board of Executive Directors

Degree: Law, 60 years old, 32 years at BASF

Responsibilities until December 31, 2019: Corporate Controlling; Corporate Audit; Finance; Catalysts; Coatings; Oil & Gas; Procurement & Supply Chain Services; Digitalization & Information Services

Responsibilities since January 1, 2020: Corporate Finance; Corporate Audit; Global Business Services; Global Digital Services; Global Procurement

First appointed: 2008, **term expires:** 2023

Internal memberships within the meaning of section 100(2) of the German Stock Corporation Act:

Wintershall Dea GmbH, until April 30, 2019 Wintershall Holding GmbH (Chairman of the Supervisory Board)

Wintershall AG (Chairman of the Supervisory Board)

Comparable German and non-German supervisory bodies:

Nord Stream AG (member of the Shareholders' Committee)

Saori Dubourg

Degree: Business, 48 years old, 23 years at BASF

Responsibilities until December 31, 2019: Agricultural Solutions; Construction Chemicals; Bioscience Research; Europe

Responsibilities since January 1, 2020: Agricultural Solutions; Care Chemicals; Nutrition & Health; Construction Chemicals; Bioscience Research; Europe

First appointed: 2017, **term expires:** 2025

Internal memberships within the meaning of section 100(2) of the German Stock Corporation Act:

Wintershall Dea GmbH (member of the Supervisory Board since May 1, 2019)

Sanjeev Gandhi (until December 31, 2019)

Degrees: Chemical Engineering, MBA, 53 years old, 26 years at BASF

Responsibilities until December 31, 2019: Intermediates; Petrochemicals; Greater China & Functions Asia Pacific; South & East Asia, ASEAN & Australia/New Zealand

First appointed: 2014, **term expires:** December 31, 2019

Michael Heinz

Degree: MBA, 55 years old, 36 years at BASF

Responsibilities until December 31, 2019: Engineering & Technical Expertise; Environmental Protection, Health & Safety; European Site & Verbund Management; Human Resources

Responsibilities since January 1, 2020: Corporate Environmental Protection, Health & Safety; European Site & Verbund Management; Global Engineering Services; South America

First appointed: 2011, **term expires:** 2024

Internal memberships within the meaning of section 100(2) of the German Stock Corporation Act:

Wintershall Dea GmbH (member of the Supervisory Board since May 1, 2019)

Comparable German and non-German supervisory bodies:

BASF Antwerpen N.V. (Chairman of the Administrative Council)

Dr. Markus Kamieth

Degree: Chemistry, 49 years old, 21 years at BASF

Responsibilities until December 31, 2019: Care Chemicals; Dispersions & Pigments; Nutrition & Health; Performance Chemicals; Advanced Materials & Systems Research; BASF New Business; South America

Responsibilities since January 1, 2020: Catalysts; Coatings; Dispersions & Pigments; Performance Chemicals; Advanced Materials & Systems Research; BASF New Business; Greater China; South & East Asia, ASEAN & Australia/New Zealand; Mega Projects Asia

First appointed: 2017, **term expires:** 2025

Comparable German and non-German supervisory bodies:

Solenis UK International Ltd. (member of the Board of Directors since February 1, 2019)

Wayne T. Smith

Degrees: Chemical Engineering, MBA, 59 years old, 16 years at BASF

Responsibilities until December 31, 2019: Monomers; Performance Materials; Process Research & Chemical Engineering; Market & Business Development, Site & Verbund Management North America; Regional Functions & Country Platforms North America

Responsibilities since January 1, 2020: Monomers; Performance Materials; Petrochemicals; Intermediates; Process Research & Chemical Engineering; Market & Business Development, Site & Verbund Management North America; Country Platforms North America

First appointed: 2012, **term expires:** 2022

Supervisory Board

In accordance with the Statutes, the Supervisory Board of BASF SE comprises 12 members

The term of office of the Supervisory Board commenced following the Annual Shareholders' Meeting on May 3, 2019, in which the shareholder representatives on the Supervisory Board were elected. It terminates upon conclusion of the Annual Shareholders' Meeting that resolves on the discharge of members of the Supervisory Board for the fourth complete business year after the term of office commenced; this is the Annual Shareholders' Meeting on April 25, 2024. The Supervisory Board comprises the following members:

Dr. Jürgen Hambrecht, Neustadt an der Weinstraße, Germany*¹

Chairman of the Supervisory Board of BASF SE

Former Chairman of the Board of Executive Directors of BASF SE (until May 2011)

Member of the Supervisory Board since: May 2, 2014

Memberships of statutory supervisory boards in Germany:

Fuchs Petrolub SE³ (chairman until May 7, 2019)

Trumpf GmbH & Co. KG⁴ (chairman)

Daimler AG³ (member)

Daimler Truck AG³ (member since September 24, 2019)

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises: none

Franz Fehrenbach, Stuttgart, Germany¹

Vice Chairman of the Supervisory Board of BASF SE

Chairman of the Supervisory Board of Robert Bosch GmbH

Member of the Supervisory Board since: January 14, 2008

Memberships of statutory supervisory boards in Germany:

Robert Bosch GmbH⁴ (chairman)

Stihl AG³ (vice chairman)

Linde AG³ (second deputy chairman until April 8, 2019)

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:

Stihl Holding AG & Co. KG⁴ (member of the Advisory Board)

Linde plc³ (member of the Board of Directors)

Sinischa Horvat, Limburgerhof, Germany*²

Vice Chairman of the Supervisory Board of BASF SE

Chairman of the Works Council of BASF SE, Ludwigshafen Site;

Chairman of BASF's Joint Works Council and of the BASF Works Council Europe

Member of the Supervisory Board since: May 12, 2017

Memberships of statutory supervisory boards in Germany: none

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises: none

Prof. Dr. Thomas Carell, Munich, Germany*¹

Professor for Organic Chemistry at Ludwig Maximilian University Munich

Member of the Supervisory Board since: May 3, 2019

Memberships of statutory supervisory boards in Germany: none

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises: none

Dame Alison Carnwath DBE, Exeter, England*¹

Senior Advisor Evercore Partners

Member of the Supervisory Board since: May 2, 2014

Memberships of statutory supervisory boards in Germany: none

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:

Zurich Insurance Group AG³ (independent, non-executive member of the Board of Directors)

Zürich Versicherungs-Gesellschaft AG (subsidiary of Zurich Insurance Group AG)⁴ (independent, non-executive member of the Board of Directors)

BP plc³ (non-executive director)

PACCAR Inc.³ (independent member of the Board of Directors)

Coller Capital Ltd.⁴ (non-executive member of the Board of Directors)

Broadwell Capital Limited⁴ (non-executive member of the Board of Directors)

Tatjana Diether, Limburgerhof, Germany*²

Member of the Works Council of BASF SE, Ludwigshafen Site, and of the BASF Works Council Europe

Member of the Supervisory Board since: May 4, 2018

Memberships of statutory supervisory boards in Germany: none

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises: none

Waldemar Helber, Otterbach, Germany*²

Deputy Chairman of the Works Council of BASF SE, Ludwigshafen Site

Member of the Supervisory Board since: April 29, 2016

Memberships of statutory supervisory boards in Germany: none

Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises: none

* Classified by the Supervisory Board as an "independent" member of the Supervisory Board (see page 153 for the criteria used to determine independence)

¹ Shareholder representative

² Employee representative

³ Publicly listed

⁴ Not publicly listed

Dr. Alexander C. Karp, Palo Alto, California*¹

CEO Palantir Technologies Inc.

Member of the Supervisory Board since: May 3, 2019**Memberships of statutory supervisory boards in Germany:**Axel Springer SE³ (member until December 31, 2019)**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:**The Economist Newspaper Limited⁴ (non-executive director until November 28, 2019)**Anke Schäferkordt, Cologne, Germany*¹**

Member of the Supervisory Board

Member of the Supervisory Board since: December 17, 2010**Memberships of statutory supervisory boards in Germany:**Serviceplan Group Management SE,⁴ partner with unlimited liability of Serviceplan Group SE & Co. KG (member since July 1, 2019)**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:**Wayfair Inc.³ (non-executive director since September 17, 2019)**Denise Schellemans, Brecht, Belgium*²**

Full-time trade union delegate

Member of the Supervisory Board since: January 14, 2008**Memberships of statutory supervisory boards in Germany:**
none**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:** none**Roland Strasser, Riedstadt, Germany*²**

Regional Manager of the Rhineland-Palatinate/Saarland branch of IG BCE

Member of the Supervisory Board since: May 4, 2018**Memberships of statutory supervisory boards in Germany:**AbbVie Komplementär GmbH⁴ (member)V & B Fliesen GmbH⁴ (member)**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:** none**Michael Vassiliadis, Hannover, Germany*²**

Chairman of the Mining, Chemical and Energy Industries Union

Member of the Supervisory Board since: August 1, 2004**Memberships of statutory supervisory boards in Germany:**Steag GmbH⁴ (member)RAG Aktiengesellschaft³ (vice chairman)RAG Deutsche Steinkohle Aktiengesellschaft,⁴ merged with RAG Aktiengesellschaft on April 23, 2019 (vice chairman)Henkel AG & Co. KGaA³ (member)Vivawest GmbH⁴ (member)**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:** none**The following members left the Supervisory Board on May 3, 2019****Michael Diekmann, Munich, Germany¹**

Vice Chairman of the Supervisory Board of BASF SE

Chairman of the Supervisory Board of Allianz SE

Member of the Supervisory Board since: May 6, 2003**Memberships of statutory supervisory boards in Germany:**Allianz SE³ (chairman)Fresenius Management SE⁴ (member)Fresenius SE & Co. KGaA³ (vice chairman)Siemens AG³ (member)**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:** none**Prof. Dr. François Diederich, Dietikon, Switzerland¹**

Professor at the Swiss Federal Institute of Technology, Zurich, Switzerland

Member of the Supervisory Board since: May 19, 1998**Memberships of statutory supervisory boards in Germany:**
none**Memberships of comparable domestic and foreign supervisory bodies of commercial enterprises:** none

* Classified by the Supervisory Board as an "independent" member of the Supervisory Board (see page 153 for the criteria used to determine independence)

¹ Shareholder representative² Employee representative³ Publicly listed⁴ Not publicly listed

Compensation Report

This report outlines the main principles of the compensation for the Board of Executive Directors and discloses the amount and structure of the compensation of each Board member. Furthermore, it provides information on end-of-service undertakings with respect to members of the Board of Executive Directors, as well as information on the compensation of Supervisory Board members.

This report meets the disclosure requirements of the German Commercial Code, supplemented by the additional requirements based on the German Act on the Disclosure of Management Board Remuneration (VorstOG) as well as the German Act on the Appropriateness of Management Board Remuneration (VorstAG), and is aligned with the recommendations of the German Corporate Governance Code (GCGC) in the version dated February 7, 2017. At its meeting on December 19, 2019, the Supervisory Board resolved to amend the existing compensation system for the Board of Executive Directors. The amendments also meet the changed requirements from the 2020 fiscal year onward arising from the German Act Implementing the Second E.U. Shareholder Rights Directive (ARUG II), which entered into force on January 1, 2020, and from the German Corporate Governance Code (GCGC) in the version dated December 16, 2019, which was submitted to the German Federal Ministry of Justice on January 23, 2020, for review and publication in the Federal Gazette (Bundesanzeiger).

Principles and structure

The compensation of the Board of Executive Directors is determined by the company's size, complexity and financial position, as well as the performance of the Board of Executive Directors as a whole. It is designed to promote sustainable corporate development and ensure a pronounced variability in relation to the performance of the Board of Executive Directors and the BASF Group's success. The

external and internal appropriateness of the Board's compensation is reviewed by an independent external auditor on a regular basis. DAX companies in Germany and globally operating companies in the rest of Europe¹ serve as an external reference. For internal comparison, the compensation of senior executives and employees of BASF SE is considered in total as well as over time.

Based on a proposal by the Personnel Committee, the Supervisory Board determines the structure and amount of compensation of members of the Board of Executive Directors.

In 2019, the Supervisory Board engaged an independent external compensation consultant with an appropriateness review. The results of the appropriateness review revealed that the compensation granted to BASF's Board of Executive Directors was within market range for the peer group (horizontal comparison). An assessment of the compensation of an ordinary member of the Board of Executive Directors in relation to the compensation paid to the company's employees and senior executives (vertical comparison) did not provide any indications of inappropriate compensation, nor did an assessment of its development over time.

[For more information on the Supervisory Board and its committees, see page 160 and from page 178 onward](#)

Individual compensation components

1. Fixed salary

The fixed salary is a set amount of yearly compensation paid out in equal installments. It is regularly reviewed by the Supervisory Board and adjusted, when appropriate.

The annual fixed salary for an ordinary member of the Board of Executive Directors has been €800,000 since January 1, 2017. The fixed salary for the chairman of the Board of Executive Directors is two times the value for an ordinary Board member, and 1.33 times this value for the vice chairman.

2. Performance bonus

Performance bonus

- Four-year, forward-looking performance period
- The amount of the performance bonus is based on the achievement of set operational targets and strategic medium-term objectives, as well as the BASF Group's ROCE.
- 50% of the performance bonus calculated after the first year is deferred for another three years and paid out after the end of the four-year performance period based on the achievement of strategic targets.
- If the target ROCE is met and the target achievement is 100%, the performance bonus is double the fixed salary (target amount).

The performance bonus is based on the performance of the Board of Executive Directors as a whole and the return on capital employed (ROCE) of the BASF Group. ROCE is also the key performance indicator for the variable compensation of all employees. The target ROCE for the variable compensation is one percentage point above the cost of capital percentage for the fiscal year, which is determined using the weighted average cost of capital (WACC) approach in accordance with the Capital Asset Pricing Model. This target reflects the strategic goal of achieving a ROCE considerably above the cost of capital percentage every year, even if the capital structure and interest rate level change over time. The target value is thus directly linked to the return expected by investors, which also serves as orientation for the BASF Group's value-based management as a whole.

[For more information on the determination of the cost of capital percentage, see Value-Based Management on page 30](#)

¹ The European peer group for the 2019 appropriateness review comprised the following companies: ABB, Air Liquide, Akzo Nobel, BAE Systems, Bayer, BHP, BMW, BP, Continental, Daimler, DSM, E.ON, EDF, Henkel, Linde, Rolls Royce, Royal Dutch Shell, Siemens, Solvay, Thyssenkrupp, Total, Volkswagen

For each fiscal year, a member of the Board of Executive Directors is entitled to a performance bonus with a four-year performance period. After the first year of this four-year performance period, the performance bonus (gross) is determined based on the achievement of operational targets (operational performance factor, OPF) and strategic targets (strategic performance factor, SPF) as well as the ROCE (ROCE factor). 50% of the amount is paid out after the Annual Shareholders' Meeting in the following year (performance bonus, part 1).

The remaining 50% is deferred for another three years and is not immediately payable (deferral component). The final amount of the deferral component is determined depending on the degree to which the strategic targets were achieved within the four-year performance period (strategic performance factor, SPF) and is paid out after the Annual Shareholders' Meeting in the year following the end of this four-year performance period (performance bonus, part 2).

Overview of compensation components

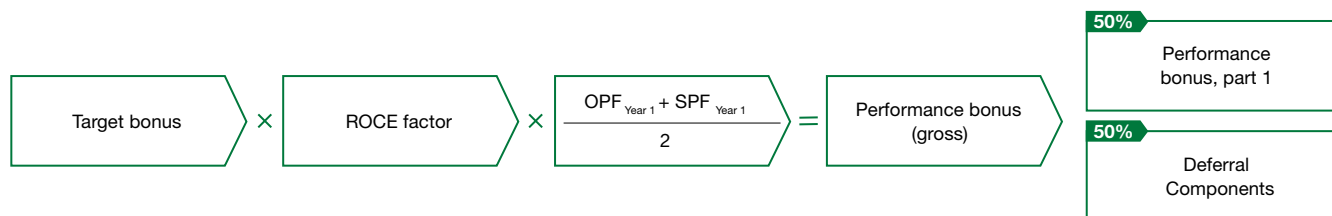
1. Fixed salary	Annual amount	€800,000 ^a
	Payment	In equal installments
2. Performance bonus	Annual target	€1,600,000 ^a
	Cap	€2,500,000 ^a
	Payment	Performance bonus, part 1: after the Annual Shareholders' Meeting for the past business year Performance bonus, part 2: after the end of the four-year performance period
3. Long-term, share price-based incentive program	The annual amount granted is dependent on the fair value of the options as of the grant date and the scope of the individual investment	
	Cap	€3,750,000 ^{a, b}
	Payment	In a period of 4 to 8 years after the grant date, depending on individual exercise date
4. Fringe benefits	The annual amount corresponds to the value of nonmonetary compensation	
5. Company pension benefits	The annual service cost is the accounting figure for the pension entitlements accrued in the relevant business year	

^a Amounts apply to an ordinary member of the Board of Executive Directors. The amount for the chairman of the Board of Executive Directors is two times this value, and 1.33 times this value for the vice chairman.

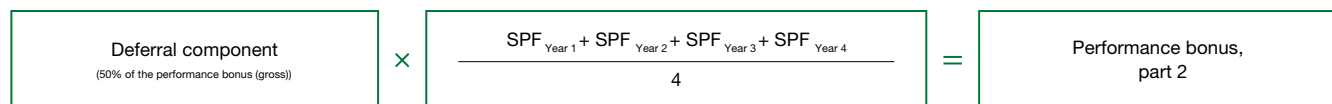
^b To reach the cap, a Board member must make the maximum individual investment based on the maximum performance bonus and the set limit on the gain from exercising the options granted must be reached.

Target agreement and evaluation

Schematic overview: performance bonus, part 1



Schematic overview: performance bonus, part 2



Target agreement

In order to assess the sustainable performance of the Board of Executive Directors, each year the Supervisory Board sets a target agreement with the Board of Executive Directors as a whole. The target agreement contains:

- One-year operational targets, primarily earnings, financial, investment and operational excellence targets such as EBITDA before special items and sales
- Multiple-year strategic targets relating to the further development of BASF, primarily targets for growth, portfolio optimization, investment and R&D strategy, digitalization, sustainability and BASF corporate values

The Board of Executive Directors' target agreement contains operational and strategic objectives. The operational targets (primarily earnings, financial, investment and operational excellence targets) cover the company's short-term financial performance. The strategic targets relate to BASF's medium and long-term development on the basis of the corporate strategy. They comprise targets for growth, portfolio optimization, investment and R&D strategy, digitalization, sustainability and the BASF corporate values.

The achievement of operational and strategic targets is evaluated separately. The amount of the performance bonus thus takes into account the Board of Executive Directors' performance for both the short-term and long-term success of the company.

Determination of performance factors

An operational performance factor and a strategic performance factor, each with a value between 0 and 1.5, are determined on the basis of the target achievement ascertained by the Supervisory Board. A target achievement rate of 100% equates to a value of 1.0 for the performance factor. The maximum performance factor of 1.5 applies for a target achievement rate of 125% and over; a target achievement rate of 50% or less represents a performance factor of 0.

Target achievement and performance factor

Target achievement	≤50%	75%	100%	≥125%
Performance factor	0	0.5	1.0	1.5

Values between these figures are interpolated

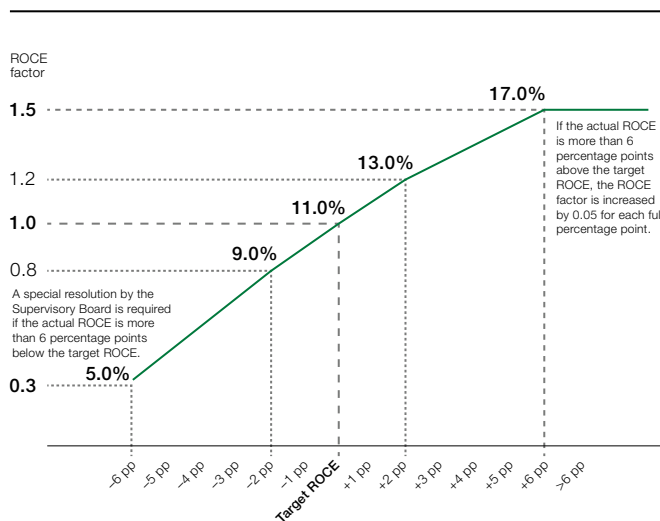
Determination of the ROCE factor

The ROCE of the particular fiscal year serves as the key performance indicator for the success of the company when determining the performance bonus. ROCE is the ratio of income from operations (EBIT) of the segments in relation to the average operating assets of the segments, plus the customer and supplier financing not included there.

For more information on operating assets, see Value-Based Management on page 30

A ROCE factor is assigned to each relevant ROCE value. If the ROCE is two percentage points or more below the target ROCE, the ROCE factor will decline at a faster rate. The ROCE factor will increase at a slower rate if the ROCE is two percentage points or more above the target ROCE.

ROCE factor



The ROCE factor is 1.0 if the ROCE achieved in the fiscal year is one percentage point above the weighted cost of capital percentage (based on the weighted average cost of capital, WACC, in accordance with the Capital Asset Pricing Model) for that year, meaning an appropriate premium on the cost of capital was earned. In calculating ROCE, adjustments are made for negative and positive special items resulting from acquisitions and divestitures (for example, integration costs in connection with acquisitions and gains or losses from the divestiture of businesses) when these exceed a corridor of plus or minus 1% of the average cost of capital basis. An adjustment of the ROCE (in the first 12 months after closing) therefore only occurs in cases of exceptionally high special items resulting from acquisitions and divestitures.

If the target ROCE is met and the target achievement is 100%, the performance bonus is double the fixed salary (target amount).

The Supervisory Board sets a maximum amount for the performance bonus (cap). The current total cap is €2,500,000 for an ordinary member of the Board of Executive Directors (performance bonus, part 1 and performance bonus, part 2). The maximum amount for the chairman of the Board of Executive Directors is two times this value, and 1.33 times this value for the vice chairman.

Target agreement and target achievement in 2019

The performance bonus (gross) for 2019 was determined on the basis of target achievement as ascertained by the Supervisory Board and ROCE for the 2019 business year.

Operational performance factor (OPF₂₀₁₉):

The comparison of operational targets (see page 120 onward of the BASF Report 2018) with target achievement, taking into account the economic environment forecast at the beginning of the year and actual economic conditions, resulted in an operational performance factor (OPF₂₀₁₉) of 0.9:

- Sales did not meet the target of slight growth, mainly from higher sales volumes and portfolio effects.
- The target for EBIT before special items (slight increase) was not met.
- The target of generating a strong free cash flow as a basis for increasing the dividend was met.

In determining the operational performance factor, the Supervisory Board took into account the fact that only 50% of its expectations for the economic environment at the time the 2019 budget was adopted (see page 117 onward of the BASF Report 2018) were fulfilled.

Strategic performance factor (SPF₂₀₁₉):

Overall, the strategic targets were reached in 2019, resulting in a strategic performance factor (SPF₂₀₁₉) of 1.0:

- The volumes growth and Accelerator sales targets were not met.
- The employee engagement target was met despite comprehensive restructuring and portfolio measures.
- The targets on the share of investment in emerging markets, portfolio restructuring, leveraging synergies, and CO₂ equivalent emissions were exceeded.

For the 2018 performance bonus period (2018–2021), a strategic performance factor of 1.1 was determined in 2019 for the deferral component based on the targets agreed in 2018.

ROCE factor 2019:

The BASF Group's ROCE, which is used to determine compensation, was 7.7% in 2019. The target ROCE for 2019 was 11%, with the average cost of capital unchanged at 10%. Accordingly, the ROCE factor for 2019 was 0.6375.

Performance bonus (gross) for a full-year ordinary member of the Board of Executive Directors

Target amount 2019 performance bonus (2019–2022):	×	ROCE factor 2019:	×	$\frac{\text{OPF}_{2019} + \text{SPF}_{2019}}{2}$	=	Actual amount 2019 performance bonus (gross) (2019–2022):
€1,600,000		0.6375		$\frac{0.9 + 1.0}{2}$		€969,000

3. Long-term, share price-based incentive program (LTI program)**LTI program**

- Absolute performance threshold: BASF share price gains at least 30% compared with the base price for the LTI program concerned
- Relative performance threshold: BASF shares outperform the MSCI World Chemicals Index and no share price loss compared with the base price on the option grant date
- Share ownership obligation: Mandatory individual investment in BASF shares with a holding obligation of 10% of the actual performance bonus (gross), plus up to an additional 20% of the actual performance bonus (gross)
- Term: eight years
- Exercise first possible: four years after the grant date (vesting period)
- Maximum exercise gain (cap): five times the individual investment

An LTI program exists for members of the Board of Executive Directors. It is also offered to all other senior executives of the BASF Group, with a small number of modifications. To take part in the program, each participant must prove an individual investment in BASF shares and hold the shares for this purpose for a defined period of time (holding period). The individual investment can amount to a maximum of 30% of the participant's performance bonus (gross) for the previous year. The members of the Board of Executive Directors are obligated to invest at least 10% of their individual performance bonus (gross) for the previous year in the LTI program each year (share ownership obligation). This mandatory investment is subject to a holding period of four years. For any further additional voluntary investment of up to 20% of the performance bonus (gross) for the previous year, the general holding period of two years applies.

Four options are granted for each BASF share brought into the LTI program as an individual investment. After a four-year vesting period, there is a four-year exercise period during which the members of the Board of Executive Directors can exercise these options if performance thresholds are met. During the exercise period, the exercising of options is prohibited during certain periods (closed periods). Each member of the Board of Executive Directors can individually decide on the timing and extent of the exercising of options. Once the options are exercised, the computed value of the options is paid out in cash (cash settlement).

Each option consists of right A (absolute performance threshold) and right B (relative performance threshold), whose value is determined by different performance targets. At least one of the two conditions must be met in order for the option to be exercised:

- Performance threshold, right A: BASF share price increases at least 30% compared with the base price on the option grant date for the LTI program concerned. The value of right A is calculated as the difference between the market price of BASF shares on the exercise date and the base price on the option grant date. It is limited to 100% of the base price (cap). The base price for an LTI program is the volume-weighted average share price in Deutsche Börse AG's electronic trading system (Xetra) on the first trading day after the Annual Shareholders' Meeting of BASF SE in the year in which the LTI program is granted. The base price for the LTI program granted in 2019 was €68.21 (2018: €85.45).
- Performance threshold, right B: The cumulative percentage performance of the BASF share exceeds that of the MSCI World Chemicals Index (outperformance) and the price of the BASF share on the exercise date equals at least the base price. The value of right B is calculated as the base price of the option multiplied by twice the outperformance of BASF shares on the exercise date. It is limited to the closing price on the date of exercise minus the computed nominal value of BASF shares.

In total, the maximum exercise gain (cap) is limited to five times the individual investment and can amount to a maximum of €3,750,000 for an ordinary member of the Board of Executive Directors. The maximum amount for the chairman of the Board of Executive Directors is two times the maximum value for an ordinary Board member, and 1.33 times this value for the vice chairman.

Due to the multiple-year exercise period, it can occur that exercise gains from several LTI program years accumulate inside of one year; there can also be years without any exercise gains.

 For more information on share ownership by members of the Board of Executive Directors, see page 156

For more information on the LTI program, see page 130 and from page 284 onward

4. Nonmonetary compensation and other additional compensation (fringe benefits)

Members of the Board of Executive Directors receive various fringe benefits in addition to the abovementioned cash compensation. Fringe benefits include delegation allowances, accident insurance premiums, transportation and benefits from the provision of security measures by the company. The fringe benefits granted by the company are subject to specific provisions and thereby also limited in its amount.

The members of the Board of Executive Directors are covered by a directors' and officers' liability insurance (D&O insurance) concluded by the company. This policy provides for the level of deductibles for the Board of Executive Directors as prescribed by section 93(2) sentence 3 of the German Stock Corporation Act.

5. Company pension benefits

Board Performance Pension

- Accrual of annual pension units, the amount of which depend on the company's success and the performance of the Board of Executive Directors as a whole
- Pension entitlement: retirement, disability and surviving dependents' pensions
- Pension benefits due: On reaching the retirement age of 60 (63 for members first appointed to the Board of Executive Directors since 2017) or on account of disability or death

As part of the pension benefits granted to the Board of Executive Directors (Board Performance Pension), company pension benefits are intended to accrue annual pension units, the amount of which depends on the company's success and the performance of the Board of Executive Directors as a whole in the business year concerned. The method used to determine the amount of the pension benefits generally corresponds to that used for all other senior executives of the BASF Group in Germany. The annual pension benefits accruing to Board members in a given reporting year (pension unit) are composed of a fixed and a variable component. The fixed component is calculated by multiplying the annual fixed salary above the social security contribution ceiling by 32% (fixed pension component).

The variable component of the pension unit is the result of multiplying the fixed pension component with a performance factor based on the relevant ROCE in the reporting year concerned, as well as the performance factors relevant to the performance bonus (variable pension component).

The amount resulting from the fixed and the variable pension component is converted into a pension unit (lifelong pension) using actuarial factors (annuity conversion factor). The currently applied annuity conversion factor is based on an actuarial interest rate of 5%, the probability of death, invalidity and bereavement according to Heubeck Richttafeln, 2005G (modified) and an assumed pension increase (at least 1% each year).

The sum of the pension units accumulated over the reporting years determines the respective Board member's pension benefit in the event of a claim.

This is the amount that is payable on retirement, disability or death. Pension benefits fall due at the end of service on reaching the age of 60 (for members first appointed to the Board of Executive Directors after January 1, 2017: on reaching the age of 63), or on account of disability or death. Pension payments are reviewed on a regular basis and adjusted by at least 1% each year. Members of the Board of Executive Directors have the option to choose between payment of their pension entitlements in the form of a lifelong pension or a lump sum. The amount of the lump-sum payment is calculated by capitalizing the annual pension entitlement accrued as of the end of the service period as a member of the Board of Executive Directors.

The pension units also include survivor benefits. Upon the death of an active or former member of the Board of Executive Directors, the surviving spouse receives a survivor pension amounting to 60% of the Board member's pension entitlement. The orphan pension amounts to 10% for each half-orphan, 33% for an orphan, 25% each for two orphans and 20% each for three or more orphans of the pension entitlement of the deceased (former) Board member. Total survivor benefits may not exceed 75% of the Board member's pension entitlement. If the survivor pensions exceed the upper limit, they will be proportionately reduced.

Board members are members of the BASF Pensionskasse VVaG, as are generally all employees of BASF SE. Contributions and benefits are determined by the Statutes of the BASF Pensionskasse VVaG and the General Conditions of Insurance.

Withholding and clawback clause

A withholding and clawback clause was introduced as of January 1, 2018, for the performance bonus and the LTI program for all members of the Board of Executive Directors. In the event that a Board member commits a serious infringement of the Code of Conduct of BASF Group or of the duty of care as a member of the management of the company, this provision allows for a reduction or cancellation of not yet paid variable compensation as well as the clawback of variable compensation paid out since January 1, 2018.

Amount of total compensation

The tables on pages 169 to 171 show the granted and allocated compensation as well as service cost of each member of the Board of Executive Directors in accordance with section 4.2.5(3) of the German Corporate Governance Code (GCGC) in the version dated February 7, 2017.

Compensation granted in accordance with the German Corporate Governance Code (GCGC)

The table "Compensation granted in accordance with the German Corporate Governance Code (GCGC)" shows: fixed salary, fringe benefits, performance bonus, LTI program measured at fair value as of the grant date and service cost. The individual compensation components are supplemented by individually attainable minimum and maximum compensation.

Furthermore, a reconciliation statement for total compensation to be reported is provided below the table "Compensation granted in accordance with the German Corporate Governance Code (GCGC)" due to the disclosures required by section 314(1) no. 6a of the German Commercial Code (HGB) in connection with the German Accounting Standard 17 (GAS 17).

Compensation granted in accordance with the German Corporate Governance Code (GCGC)

Thousand €

	Dr. Martin Brudermüller Chairman of the Board of Executive Directors (since May 4, 2018)				Dr. Hans-Ulrich Engel Vice Chairman of the Board of Executive Directors (since May 4, 2018)				Saori Dubourg				Sanjeev Gandhi (Member of the Board of Executive Directors until December 31, 2019)			
	2018	2019	2019 (min)	2019 (max)	2018	2019	2019 (min)	2019 (max)	2018	2019	2019 (min)	2019 (max)	2018	2019	2019 (min)	2019 (max)
Fixed salary	1,416	1,600	1,600	1,600	973	1,064	1,064	1,064	800	800	800	800	761 ^a	800 ^{a,d}	800 ^{a,d}	800 ^{a,d}
Fringe benefits	136	60	60	60	112	69	69	69	58	356	356	356	1,637 ^{b,c}	1,727 ^{b,c}	1,727 ^{b,c}	1,727 ^{b,c}
Total	1,552	1,660	1,660	1,660	1,085	1,133	1,133	1,133	858	1,156	1,156	1,156	2,398	2,527	2,527	2,527
One-year variable target compensation	1,416	1,600	0	2,500	973	1,064	0	1,663	800	800	0	1,250	800	800	0	1,250
50% of the 2018 performance bonus (2018–2021)	1,416	–	–	–	973	–	–	–	800	–	–	–	800	–	–	–
50% of the 2019 performance bonus (2019–2022)	–	1,600	0	2,500	–	1,064	0	1,663	–	800	0	1,250	–	800	0	1,250
Multiple-year variable compensation	2,303	2,346	0	6,253	1,640	1,577	0	4,244	1,130	1,001	0	2,263	1,467	1,221	0	3,371
50% of the 2018 performance bonus (2018–2021), deferral component	1,416	–	–	–	973	–	–	–	800	–	–	–	800	–	–	–
50% of the 2019 performance bonus (2019–2022), deferral component	–	1,600	0	2,500	–	1,064	0	1,663	–	800	0	1,250	–	800	0	1,250
LTI program 2018 (2018–2026)	887	–	–	–	667	–	–	–	330	–	–	–	667	–	–	–
LTI program 2019 (2019–2027)	–	746	0	3,753	–	513	0	2,581	–	201	0	1,013	–	421	0	2,121
Total	5,271	5,606	1,660	10,413	3,698	3,774	1,133	7,040	2,788	2,957	1,156	4,669	4,665	4,548	2,527	7,148
Service cost	1,111	573	573	573	626	366	366	366	1,029	704	704	704	789	510	510	510
Total compensation in accordance with GCGC	6,382	6,179	2,233	10,986	4,324	4,140	1,499	7,406	3,817	3,661	1,860	5,373	5,454	5,058	3,037	7,658
Reconciliation reporting of total compensation pursuant to section 314(1) no. 6a HGB in connection with GAS 17																
Less granted 2018 performance bonus (2018–2021), (one-year component and deferral component)	(2,832)	–			(1,946)	–			(1,600)	–			(1,600)	–		
Less granted 2019 performance bonus (2019–2022), (one-year component and deferral component)	–	(3,200)			–	(2,128)			–	(1,600)			–	(1,600)		
Plus allocated actual annual variable compensation (performance bonus, part 1)	1,251	969			860	644			707	485			707	485		
Less service cost	(1,111)	(573)			(626)	(366)			(1,029)	(704)			(789)	(510)		
Total compensation	3,690	3,375			2,612	2,290			1,895	1,842			3,772	3,433		

^a Payment was made partly in local currency abroad based on a theoretical net salary in Germany.^b Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.^c Fringe benefits include the payment of additional taxes for 2018 and/or 2019 and tax back payments for previous years arising in connection with transfers.^d From the 2019 reporting year onward, the fixed salary is presented on the basis of the fixed salary (gross) in accordance with the Board member's contract.

Compensation granted in accordance with the German Corporate Governance Code (GCGC)

Thousand €

	Michael Heinz				Dr. Markus Kamieth				Wayne T. Smith			
	2018	2019	2019 (min)	2019 (max)	2018	2019	2019 (min)	2019 (max)	2018	2019	2019 (min)	2019 (max)
Fixed salary	800	800	800	800	800	800	800	800	888	800 ^{a, d}	800 ^{a, d}	800 ^{a, d}
Fringe benefits	34	36	36	36	41	46	46	46	165	340 ^b	340 ^b	340 ^b
Total	834	836	836	836	841	846	846	846	1,053	1,140	1,140	1,140
One-year variable target compensation	800	800	0	1,250	800	800	0	1,250	800	800	0	1,250
50% of the 2018 performance bonus (2018–2021)	800	–	–	–	800	–	–	–	800	–	–	–
50% of the 2019 performance bonus (2019–2022)	–	800	0	1,250	–	800	0	1,250	–	800	0	1,250
Multiple-year variable compensation	1,467	1,221	0	3,371	1,292	1,221	0	3,371	1,596	1,312	0	3,371
50% of the 2018 performance bonus (2018–2021), deferral component	800	–	–	–	800	–	–	–	800	–	–	–
50% of the 2019 performance bonus (2019–2022), deferral component	–	800	0	1,250	–	800	0	1,250	–	800	0	1,250
LTI program 2018 (2018–2026)	667	–	–	–	492	–	–	–	796	–	–	–
LTI program 2019 (2019–2027)	–	421	0	2,121	–	421	0	2,121	–	512	0	2,121
Total	3,101	2,857	836	5,457	2,933	2,867	846	5,467	3,449	3,252	1,140	5,761
Service cost	661	387	387	387	1,023	699	699	699	709	491	491	491
Total compensation in accordance with GCGC	3,762	3,244	1,223	5,844	3,956	3,566	1,545	6,166	4,158	3,743	1,631	6,252
Reconciliation reporting of total compensation pursuant to section 314(1) no. 6a HGB in connection with GAS 17												
Less granted 2018 performance bonus (2018–2021), (one-year component and deferral component)	(1,600)	–			(1,600)	–			(1,600)	–		
Less granted 2019 performance bonus (2019–2022), (one-year component and deferral component)	–	(1,600)			–	(1,600)			–	(1,600)		
Plus allocated actual annual variable compensation (performance bonus, part 1)	707	485			707	485			707	485		
Less service cost	(661)	(387)			(1,023)	(699)			(709)	(491)		
Total compensation	2,208	1,742			2,040	1,752			2,556	2,137		

^a Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

^b Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

^c Fringe benefits include the payment of additional taxes for 2018 and/or 2019 and tax back payments for previous years arising in connection with transfers.

^d From the 2019 reporting year onward, the fixed salary is presented on the basis of the fixed salary (gross) in accordance with the Board member's contract.

Compensation allocated in accordance with the German Corporate Governance Code (GCGC)

The "Compensation allocated in accordance with the German Corporate Governance Code (GCGC)" presented comprises the fixed and variable compensation components actually allocated, plus the service cost calculated for each member of the Board of Executive Directors in the reporting years even though this does not actually represent payment in the narrower sense.

Compensation allocated in accordance with the German Corporate Governance Code (GCGC)

Thousand €

	Dr. Martin Brudermüller Chairman of the Board of Executive Directors (since May 4, 2018)		Dr. Hans-Ulrich Engel Vice Chairman of the Board of Executive Directors (since May 4, 2018)		Saori Dubourg		Sanjeev Gandhi (Member of the Board of Executive Directors until December 31, 2019)		Michael Heinz		Dr. Markus Kamieth		Wayne T. Smith	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Fixed salary	1,416	1,600	973	1,064	800	800	761 ^c	800 ^{c, f}	800	800	800	800	888 ^c	800 ^{c, f}
Fringe benefits	136	60	112	69	58	356	1,637 ^{d, e}	1,727 ^{d, e}	34	36	41	46	165 ^d	340 ^d
Total	1,552	1,660	1,085	1,133	858	1,156	2,398	2,527	834	836	841	846	1,053	1,140
One-year variable compensation	1,251	969	860	644	707	485	707	485	707	485	707	485	707	485
2018 performance bonus (2018–2021), part 1 ^a	1,251	–	860	–	707	–	707	–	707	–	707	–	707	–
2019 performance bonus (2019–2022), part 1 ^a	–	969	–	644	–	485	–	485	–	485	–	485	–	485
Multiple-year variable compensation	–	–	1,401	–	–	–	–	–	–	–	–	–	–	–
LTI program 2010 (2010–2018)	–	–	1,401 ^b	–	–	–	–	–	–	–	–	–	–	–
LTI program 2011 (2011–2019)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
LTI program 2012 (2012–2020)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
LTI program 2013 (2013–2021)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
LTI program 2014 (2014–2022)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	2,803	2,629	3,346	1,777	1,565	1,641	3,105	3,012	1,541	1,321	1,548	1,331	1,760	1,625
Service cost	1,111	573	626	366	1,029	704	789	510	661	387	1,023	699	709	491
Total compensation in accordance with GCGC	3,914	3,202	3,972	2,143	2,594	2,345	3,894	3,522	2,202	1,708	2,571	2,030	2,469	2,116

^a The basis for the performance bonus, part 1, is the ROCE factor and the average of the operating performance factor (OPF) and the strategic performance factor (SPF) in the year the performance bonus was granted. This includes contributions made to the deferred compensation program. 50% of the actual performance bonus is paid out; the remaining 50% of the actual performance bonus is not paid out for another three years (deferral component).

^b In 2018, at the end of the regular term of the LTI program 2010, exercise gains that were realized in 2017 and 2018 were allocated to Dr. Hans-Ulrich Engel in accordance with the special conditions of the U.S. LTI program.

^c Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

^d Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

^e Fringe benefits include the payment of additional taxes and tax back payments for previous years arising in connection with transfers.

^f From the 2019 reporting year onward, the fixed salary is presented on the basis of the fixed salary (gross) in accordance with the Board member's contract.

The table below shows the options granted to the Board of Executive Directors on July 1 of both reporting years.

Number of options granted

	2019	2018
Dr. Martin Brudermüller	44,024	33,892
Saori Dubourg	11,880	12,600
Dr. Hans-Ulrich Engel	30,268	25,484
Sanjeev Gandhi (Member of the Board of Executive Directors until December 31, 2019)	24,880	25,484
Michael Heinz	24,880	25,484
Dr. Markus Kamieth	24,880	18,792
Wayne T. Smith	24,880	25,484
Total	185,692	167,220

Accounting valuation of multiple-year variable compensation (LTI programs)

In 2019, the option rights granted resulted in an expense. This expense refers to the total of all option rights from the LTI programs 2011 to 2019 and is calculated as the difference in the fair value of the option rights on December 31, 2019, compared with the fair value on December 31, 2018, considering the option rights exercised and granted in 2019. The fair value of the option rights is based primarily on the development of the BASF share price and its relative performance compared with the benchmark index, the MSCI World Chemicals Index.

The expenses reported below are purely accounting figures that do not equate with the actual gains should options be exercised. Each member of the Board of Executive Directors may decide individually on the timing and scope of the exercise of options of the LTI

programs, while taking into account the terms and conditions of the program.

The outstanding option rights held by the members of the Board of Executive Directors resulted in the following expenses in 2019: Dr. Martin Brudermüller: expense of €464 thousand (2018: income of €4,170 thousand); Dr. Hans-Ulrich Engel: expense of €339 thousand (2018: income of €3,821 thousand); Saori Dubourg: expense of €66 thousand (2018: expense of €12 thousand); Sanjeev Gandhi: expense of €790 thousand (2018: income of €185 thousand); Michael Heinz: expense of €334 thousand (2018: income of €2,636 thousand); Dr. Markus Kamieth: expense of €124 thousand (2018: expense of €13 thousand); Wayne T. Smith: expense of €298 thousand (2018: income of €1,602 thousand).

For more information on the LTI program, see page 130 and from page 284 onward

Pension benefits

The values for service cost incurred in 2019 contain service cost for BASF Pensionskasse VVaG and for the Board Performance Pension. Service cost for the members of the Board of Executive Directors is shown individually in the tables "Compensation granted in accordance with the German Corporate Governance Code (GCGC)" and "Compensation allocated in accordance with the German Corporate Governance Code (GCGC)."

The present value of pension benefits (defined benefit obligation) is an accounting figure for the entitlements that the Board members have accumulated in their years of service at BASF. The table below shows the defined benefit obligations for the pension entitlements accrued until the end of 2019 (as of December 31 in each case).

Thousand €

	2019	2018
Dr. Martin Brudermüller	18,171	19,993
Saori Dubourg	6,983	5,067
Dr. Hans-Ulrich Engel	14,081	11,985
Sanjeev Gandhi (Member of the Board of Executive Directors until December 31, 2019)	4,824	4,586
Michael Heinz	15,201	12,735
Dr. Markus Kamieth	5,797	4,049
Wayne T. Smith	6,251	5,098
Total	71,308	63,513

End-of-service benefits

In the event that a member of the Board of Executive Directors appointed before 2017 retires from employment before the age of 60, either because their appointment was not extended or was revoked for an important reason, they are entitled to pension benefits if they have served on the Board for at least 10 years or if the period until they reach legal retirement age is less than 10 years. The company is entitled to offset compensation received for any other employment against pension benefits until the legal retirement age is reached.

The following applies to end of service due to a change of control event: A change of control event, in terms of this provision, occurs when a shareholder informs BASF of a shareholding of at least 25%, or the increase of such a holding. If a Board member's appointment is revoked within one year of a change of control event, the Board member will receive the contractually agreed payments for the remaining contractual term of office as a one-off payment (fixed salary and annual variable target compensation). The Board member may also receive the fair value of the option rights acquired in connection with the LTI program within a period of three months or

may continue to hold the existing rights under the terms of the program. For the determination of the accrued pension benefits from the Board Performance Pension, the time up to the regular expiry of office is taken into consideration.

There is a general limit on severance pay (severance payment cap) for all Board members. Accordingly, payments made to a Board member upon premature termination of their contract, without serious cause, may not exceed the value of two years' compensation, including fringe benefits, nor compensate more than the remaining term of the contract. The severance payment cap is to be calculated on the basis of the total compensation for the past business year and, if appropriate, also the expected total compensation for the current business year. If the appointment to the Board of Executive Directors is prematurely terminated as the result of a change of control event, the payments may not exceed 150% of the severance compensation cap.

Sanjeev Gandhi stepped down from the Board of Executive Directors effective the end of December 31, 2019. Based on the termination agreement, non-compete compensation of €164,583 per month was agreed for a two-year, post-contractual non-compete obligation. Sanjeev Gandhi must have any other earnings deducted from this amount if the non-compete compensation and other earnings exceed €320,000 gross per month. The same also applies if the non-compete compensation and the other earnings together exceed a total of €7,680,000 gross within 24 months.

Amendment of the compensation system for the Board of Executive Directors as of January 1, 2020

Against the background of the new BASF corporate strategy and the changed regulatory requirements under the German Act Implementing the Second E.U. Shareholder Rights Directive (ARUG II), which entered into force on January 1, 2020, and the new version of the GCGC, the Supervisory Board resolved in its meeting on December 19, 2019, to amend the existing compensation system for the Board of Executive Directors. The changes to the compensation system are to become effective as of January 1, 2020, for all current members of the Board of Executive Directors and will be submitted for approval to the Annual Shareholders' Meeting on April 30, 2020, in accordance with section 120a(1) of the German Stock Corporation Act (AktG).

The amendments to the compensation system for the Board of Executive Directors relate to the following components:

- **One-year variable compensation/short-term incentive (STI):** The previous one-year component of the performance bonus program (performance bonus, part 1) will be continued in the form of an STI. Like the performance bonus, part 1, it will be based on the achievement of operational and strategic targets as well as the return on capital employed (ROCE) for the fiscal year, which is also relevant for the compensation of all employees.
- **Multiple-year variable compensation/long-term incentive (LTI):** The previous performance bonus, part 2, which was granted for multiple years (three-year deferral component), and the long-term share price-based compensation program will be replaced by a new LTI in the form of a performance share plan with growth, profitability and sustainability targets taken directly from the corporate strategy. An LTI plan with a term of four years will be granted for each fiscal year. The amount paid out depends on the achievement of strategic targets and the development of the total shareholder return (share price and dividends) over the four-year performance period.

- **Company pension benefits:** The previous performance pension, which was structured as a defined benefit plan, will be replaced by a new pension model. The members of the Board of Executive Directors can choose between a defined contribution plan with fixed annual contributions or a pension allowance of the same amount.
- **Share ownership obligation (share ownership guideline):** The individual investment in BASF shares required under the previous LTI program will be discontinued. In the future, members of the Board of Executive Directors will have an individual share ownership obligation that requires them to hold a given number of BASF shares during the term of their Board membership and for a limited period of time thereafter. The current members of the Board of Executive Directors already held a large number of shares prior to the date the share ownership obligation came into force.

 An overview of the BASF shares held by individual members of the Board of Executive Directors can be found at basf.com/shares-held

The previous withholding and clawback clause for the STI and LTI programs remains unchanged.

A comprehensive explanation of the amendments to the compensation system for the Board of Executive Directors will be published with the invitation to the 2020 Annual Shareholders' Meeting.

Former members of the Board of Executive Directors

Total compensation for previous Board members and their surviving dependents amounted to €11.5 million in 2019 (2018: minus €5.5 million). This figure also contains payments that previous Board members have themselves financed through the deferred compensation program, as well as the expense for 2019 relating to option rights that previous members of the Board still hold from the time of their active service period. The increase in total compensation was due to the fair value measurement of these option rights, which generated total expenses of €0.6 million in 2019. This generated income of €16.1 million in 2018, mainly due to the lower accounting valuation of the option rights due to the lower share price.

Total compensation of former members of the Board of Executive Directors and their surviving dependents

Million €	2019	2018
Retirement and surviving dependents' pensions	10.9	10.6
Income/expense from the fair value measurement of option rights	0.6	(16.1)
Total	11.5	(5.5)

Option rights that have not yet been exercised on retirement are to be continued under the conditions of the program including the associated holding period to emphasize that the compensation for the Board of Executive Directors is geared to sustainability.

Pension provisions for previous Board members and their surviving dependents amounted to €198.2 million (2018: €159.5 million).

Compensation of Supervisory Board members

Compensation of Supervisory Board members

- Fixed salary: €200,000^a
- Share purchase and share holding component:
25% of the fixed compensation must be used to purchase shares in BASF; these shares must be held for the duration of membership on the Supervisory Board
- Compensation for committee memberships: €12,500^b; Audit Committee: €50,000^b
- No additional compensation is paid for the Nomination Committee

^a The amount for the chairman of the Supervisory Board is 2.5 times this value, and 1.5 times this value for the vice chairman compared with the compensation of an ordinary member.

^b The amount for the chairman of a committee is two times this value, and 1.5 times this value for the vice chairman.

The disclosure of compensation of the Supervisory Board is based on the German Commercial Code and is aligned with the recommendations of the German Corporate Governance Code (GCGC). The compensation of the Supervisory Board is regulated by the Statutes of BASF SE passed by the Annual Shareholders' Meeting.

Each member of the Supervisory Board receives an annual fixed compensation of €200,000. The amount for the chairman of the Supervisory Board is 2.5 times this value, and 1.5 times this value for the vice chairman compared with the compensation of an ordinary member.

Members of the Supervisory Board who are members of a committee, except for the Nomination Committee, receive an additional fixed compensation of €12,500. The additional fixed compensation for members of the Audit Committee is €50,000. The amount of additional fixed compensation for the chairman of a committee is two times this value, and 1.5 times this value for the vice chairman.

Each member of the Supervisory Board is required to use 25% of their fixed compensation to acquire shares in BASF SE, and to hold these shares for the duration of membership on the Supervisory Board. This does not apply to the amount of compensation that the member of the Supervisory Board transfers to a third party on a pro rata basis as a result of an obligation entered into before their appointment to the Supervisory Board. In this case, the utilization and holding obligation applies to 25% of the remaining compensation after deducting the amount transferred.

The company reimburses members of the Supervisory Board for out-of-pocket expenses and value-added tax to be paid with regard to their activities as members of the Supervisory Board or of a committee. The directors' and officers' liability insurance (D&O insurance) concluded by the company covers the duties performed by the members of the Supervisory Board. This policy provides for the level of deductibles for the Supervisory Board as recommended in section 3.8(3) of the German Corporate Governance Code (GCGC).

Total compensation of the Supervisory Board in 2019 was around €3.3 million (2018: around €3.3 million). The compensation of the individual Supervisory Board members was as follows.

Compensation of the Supervisory Board of BASF SE

Thousand €

	Fixed salary		Compensation for committee memberships		Total compensation	
	2019	2018	2019	2018	2019	2018
Dr. Jürgen Hambrecht, Chairman ^{a, b}	500.0	500.0	50.0	50.0	550.0	550.0
Michael Diekmann, Vice Chairman until May 3, 2019 ^c	125.0	300.0	13.0	31.3	138.0	331.3
Franz Fehrenbach, Vice Chairman since May 3, 2019 ^{d, e}	266.7	200.0	66.6	50.0	333.3	250.0
Sinischa Horvat, Vice Chairman ^{f, g}	300.0	300.0	25.0	25.0	325.0	325.0
Ralf-Gerd Bastian, Supervisory Board member until May 4, 2018 ^h	–	83.3	–	26.0	–	109.3
Prof. Dr. Thomas Carell, Supervisory Board member since May 3, 2019	133.3	–	–	–	133.3	–
Dame Alison Carnwath DBE ^{g, i}	200.0	200.0	112.5	112.5	312.5	312.5
Prof. Dr. François Diederich, Supervisory Board member until May 3, 2019	83.3	200.0	–	–	83.3	200.0
Tatjana Diether, Supervisory Board member since May 4, 2018 ^j	200.0	133.3	50.0	33.3	250.0	166.6
Francesco Grioli, Supervisory Board member until May 4, 2018	–	83.3	–	–	–	83.3
Waldemar Helber ^k	200.0	200.0	12.5	8.3	212.5	208.3
Dr. Alexander C. Karp, Supervisory Board member since May 3, 2019	133.3	–	–	–	133.3	–
Anke Schäferkordt	200.0	200.0	–	–	200.0	200.0
Denise Schellemans	200.0	200.0	–	–	200.0	200.0
Roland Strasser, Supervisory Board member since May 4, 2018	200.0	133.3	–	–	200.0	133.3
Michael Vassiliadis ^{d, f, g}	200.0	200.0	75.0	75.0	275.0	275.0
Total	2,941.6	2,933.2	404.6	411.4	3,346.2	3,344.6

^a Chairman of the Personnel Committee

^b Chairman of the Strategy Committee

^c Member of the Personnel Committee and Vice Chairman of the Strategy Committee until May 3, 2019

^d Member of the Audit Committee

^e Member of the Personnel and Strategy Committees since May 3, 2019

^f Member of the Personnel Committee

^g Member of the Strategy Committee

^h Member of the Audit and Strategy Committees until May 4, 2018

ⁱ Chairman of the Audit Committee

^j Member of the Audit Committee since May 4, 2018

^k Member of the Strategy Committee since May 4, 2018

Compensation for Supervisory Board membership and membership of Supervisory Board committees is payable after the Annual Shareholders' Meeting, which takes delivery of the Consolidated Financial Statements for the business year. Accordingly, compensation relating to the year 2019 will be paid following the Annual Shareholders' Meeting on April 30, 2020, taking into account and applying the share purchase obligation.

In 2019, as in 2018, the company paid Prof. Dr. François Diederich, who retired from the Supervisory Board as of May 3, 2019, a total of CHF 38,400 (2019: approximately €34,500; 2018: approximately €33,200) for consulting work in the area of chemical research based on a consulting contract approved by the Supervisory Board. Beyond this, no other Supervisory Board members received any compensation in 2019 for services rendered personally, in particular, the rendering of advisory and agency services.

For more information on share ownership by members of the Supervisory Board, see page 156

Report of the Supervisory Board



Dear Shareholders,

Amid a difficult macroeconomic environment and a slowing global economy, the Supervisory Board addressed the following focus areas in 2019:

- The updated BASF corporate strategy and the target of CO₂-neutral growth
- Portfolio measures, in particular the sale of the global pigments and construction chemicals businesses
- The expansion of the global manufacturing footprint with the establishment of a new Verbund site in southern China, a C3 value chain in India and battery materials production in Europe
- Efficiency gains and the restructuring of the company's organization
- The simplification of the compensation system for the Board of Executive Directors

The Supervisory Board addressed its task of creating the best possible foundation for BASF's successful and sustainable growth with a sense of responsibility.

Monitoring and consultation in an ongoing dialog with the Board of Executive Directors

In 2019, the Supervisory Board of BASF SE exercised its duties as required by law and the Statutes with the utmost care. It regularly monitored the management of the Board of Executive Directors and provided advice on the company's strategic development and important individual measures, about which the Supervisory Board was regularly and thoroughly informed by the Board of Executive Directors. This occurred both during and outside of the meetings of the Supervisory Board and its committees in the form of written and oral reports on, for example, all of the major financial key performance indicators (KPIs) of the BASF Group and its segments, the economic situation in the main sales and procurement markets, and on deviations in business developments from original plans. Furthermore, the Supervisory Board tackled fundamental questions of corporate planning, including financial, investment, sales volumes and personnel planning, as well as measures for designing the future of research and development. The Supervisory Board discussed in detail the reports from the Board of Executive Directors, and also deliberated on prospects for the company and its individual business areas with the Board of Executive Directors. It was convinced of the lawfulness, expediency and propriety of the Board of Executive Director's company leadership.

The Chairman of the Supervisory Board and the Chairman of the Board of Executive Directors were also in regular contact outside of Supervisory Board meetings. The Chairman of the Supervisory Board was always promptly and comprehensively informed of current developments and significant individual issues. The Supervisory Board was involved at an early stage in decisions of major importance. The Supervisory Board passed resolutions on all of those individual measures taken by the Board of Executive Directors which by law or the Statutes required the approval of the Supervisory Board. In the 2019 business year, these included authorizing:

- The divestiture of the global pigments business to the Japanese company DIC
- The sale of the construction chemicals business bundled in the Construction Chemicals division to Lone Star Funds

Supervisory Board meetings

The Supervisory Board held six meetings in the 2019 business year. With the exception of the constitutive meeting following the election of the Supervisory Board members at the Annual Shareholders' Meeting on May 3, 2019, which one member of the Supervisory Board was unable to attend, all members attended all Supervisory Board meetings in 2019. The members of the Supervisory Board elected by shareholders and those elected by the employees prepared for the meetings in separate preliminary discussions in each case, which were also attended by members of the Board of Executive Directors.

All members of the Board of Executive Directors attended the Supervisory Board meetings unless it was deemed appropriate that the Supervisory Board discuss individual topics – such as personnel matters relating to the Board of Executive Directors – without them being present. In addition, each Supervisory Board meeting includes an agenda item that provides an opportunity for discussion without the Board of Executive Directors (executive session).

 An individual overview of attendance at meetings of the Supervisory Board and its committees will be made available on the company website at basf.com/supervisoryboard/meetings

A significant component of all Supervisory Board meetings was the Board of Executive Directors' reports on the current business situation with detailed information on sales and earnings development, as well as on opportunities and risks for business development, the status of important current and planned investment projects, operational excellence and sustainability, developments on the capital markets, significant managerial measures taken by the Board of Executive Directors and innovation projects.

In all meetings, the Supervisory Board discussed the further development of the BASF Group's business activities through acquisitions, divestitures, transfers to joint ventures and investment projects. Discussions focused on:

- The sale of the global construction chemicals business bundled in the Construction Chemicals division
- The acquisition of Solvay's global polyamide business
- The merger and further development of the oil and gas businesses of BASF and LetterOne in a joint venture, Wintershall Dea
- The sale of the global pigments business

- The expansion of the battery materials business by establishing battery materials production including backward integration in Europe
- The progress of the investment project to establish a new Verbund site in southern China
- The investment in an acrylics value chain in India

At its meeting on February 21, 2019, the Supervisory Board reviewed and approved the Consolidated Financial Statements, Management's Report and the proposal for the appropriation of profit for the 2018 business year as presented by the Board of Executive Directors. The Supervisory Board met prior to the Annual Shareholders' Meeting on May 3, 2019, primarily to prepare for the Annual Shareholders' Meeting.

The main agenda items at the meeting on July 23, 2019, were BASF's digitalization strategy and the carbon management program, including the challenges, perspectives and opportunities associated with these important future issues for BASF.

At the strategy meeting on October 21/22, 2019, the Board of Executive Directors and the Supervisory Board discussed the further development and implementation of BASF's corporate strategy at length. Key topics were:

- Opportunities and risks for BASF
- Competitiveness
- Customer focus
- Sustainability and innovation
- Digitalization
- Employees, organization and corporate culture
- Capital allocation, steering and portfolio development

Other consultation topics at the strategy meeting on October 21/22, 2019, were the status and development of the automotive strategy and the strategy for and opportunities and risks associated with battery materials.

At its meeting on December 19, 2019, the Supervisory Board discussed and approved the Board of Executive Directors' operational and financial planning including the investment budget for 2020, and as usual authorized the Board of Executive Directors to procure the necessary financing in 2020.

Composition and compensation of the Board of Executive Directors

In several meetings over the 2019 business year, the Supervisory Board discussed and passed resolutions on the composition of the Board of Executive Directors and its compensation.

Based on the preparations of the Personnel Committee, it discussed and agreed on the 2019 targets for the Board of Executive Directors at its meeting on February 21, 2019. At its meeting on December 19, 2019, the Supervisory Board evaluated, based on the discussions and recommendations of the Personnel Committee, the Board of Executive Directors' performance in 2019 and the degree of target achievement.

The focus of the Supervisory Board meeting on July 23, 2019, was the composition of the Board of Executive Directors and longer-term succession planning. In this meeting, the Supervisory Board extended Wayne T. Smith's appointment to the Board of Executive Directors, which ends on conclusion of the 2020 Annual Shareholders' Meeting, until the conclusion of the 2022 Annual Shareholders' Meeting, and extended the appointments of Saori Dubourg and Dr. Markus Kamieth to the conclusion of the 2025 Annual Shareholders' Meeting. Sanjeev Gandhi stepped down from the Board of Executive Directors early at his own request as of the end of December 31, 2019. In its meeting on October 21/22, 2019, the Supervisory Board addressed at length Sanjeev Gandhi's offer to resign his seat on the Board of Executive Directors early and the modalities of his departure and termination agreement, and agreed to his early retirement without severance pay. As part of the termination agreement, the Supervisory Board agreed with Sanjeev Gandhi on a post-contractual non-compete obligation with a term of two years and non-compete compensation. At the same time, the Supervisory Board reduced the number of members of the Board of Executive Directors from seven to six. Taking into account the company's new organization as of January 2020, the proposed changes to the distribution of responsibilities within the Board of Executive Directors were agreed to.

 For more information on the division of responsibilities within the Board of Executive Directors, see the Corporate Governance Report from page 159 onward


In 2019, the Supervisory Board addressed at length the structure of the Board of Executive Directors' compensation going forward, based on the extensive preparatory work of the Personnel Committee. Discussions focused on the restructuring of both the short-term and the long-term variable compensation of the Board of Executive

Directors and Board members' pension benefits. The aim of the new system is to simplify the compensation of the Board of Executive Directors and further strengthen the focus on long-term business success. All of the requirements arising from the German Act Implementing the Shareholder Rights Directive and the new version of the German Corporate Governance Code are met. At its meeting on December 19, 2019, the Supervisory Board resolved the new compensation system for the members of the Board of Executive Directors and amended the provisions on compensation in the Board members' employment contracts accordingly. All members of the Board of Executive Directors agreed to the change to their employment contracts effective January 1, 2020. The Supervisory Board also resolved to submit the new compensation system to the Annual Shareholders' Meeting on April 30, 2020, for approval, and to have the compensation system for the Supervisory Board confirmed in unchanged form.

 For more information on the compensation of the Board of Executive Directors, see the Compensation Report on pages 162 to 174 and the notice convening the Annual Shareholders' Meeting on April 30, 2020, which will be published on March 19, 2020

Committees

The Supervisory Board of BASF SE has four committees: 1. the committee for personnel matters of the Board of Executive Directors and the granting of loans in accordance with section 89(4) of the German Stock Corporation Act (Personnel Committee); 2. the Audit Committee; 3. the Nomination Committee; and 4. the Strategy Committee. Following each Committee meeting, the chairpersons of the Committees reported in detail about the meetings and the activities of the Committees at the subsequent meeting of the Supervisory Board.

 For information on the composition of the committees and the tasks assigned to them by the Supervisory Board, see the Corporate Governance Report on pages 151 to 152

The **Personnel Committee** met four times during the reporting period. All committee members attended all meetings. At its meeting on February 21, 2019, the Personnel Committee discussed the targets for the Board of Executive Directors for the 2019 business year and the 2018 Compensation Report. A key topic at the meetings on July 23, October 21 and December 19, 2019, was the restructuring of the compensation system for the Board of Executive Directors. The counsel and recommendations of the Committee formed the basis for the resolution by the Supervisory Board on the compensation of the Board of Executive Directors and the amendments to the employment contracts. At its meeting on July 23, 2019, the Personnel Committee

addressed in particular the development of leadership at the top levels of management below the Board of Executive Directors and long-term succession planning for the Board of Executive Directors. In the meeting on December 19, 2019, it evaluated the performance of the Board of Executive Directors in the 2019 business year on the basis of the agreed targets.

The **Audit Committee** met five times during the reporting period. All committee members attended all meetings. The Audit Committee is responsible for all the tasks listed in section 107(3) sentence 2 of the German Stock Corporation Act (AktG) and the recommendations of the German Corporate Governance Code.

At the meeting on February 25, 2020, the auditor reported in detail on its audits of BASF SE's Separate and Consolidated Financial Statements for the 2019 business year, including the corresponding management's reports, and discussed the results of its audit with the Audit Committee. The committee's audit also included the nonfinancial statements of BASF SE and the BASF Group. In preparation for this audit, the Audit Committee had, following a corresponding resolution by the Supervisory Board, additionally engaged KPMG to perform a substantive audit with limited assurance of the Nonfinancial Statements and to issue an assurance report on it. KPMG also reported in detail on the focus, the procedure and the key findings of this audit.

At the meeting on July 22, 2019, the Audit Committee engaged KPMG AG Wirtschaftsprüfungsgesellschaft – the auditor elected by the Annual Shareholders' Meeting – with the audit for the 2019 reporting year and auditing fees were agreed upon. The focus areas for the annual audit were discussed and defined together with the auditor. The Audit Committee excluded in principle the engagement of the auditor to perform any services outside of the audit of the annual financial statements, including beyond prevailing legal limitations. For certain nonaudit services, the Audit Committee authorized the Board of Executive Directors to engage KPMG for such services to a very limited extent, or granted approval in individual cases. At the meeting on December 18, 2019, the auditors responsible reported on the status of the annual audit, as well as the focus areas of the audit and the most important individual items.

Other important activities included advising the Board of Executive Directors on accounting issues and the internal control system, and conducting follow-up assessments of acquisition and investment projects. The Audit Committee focused on the internal auditing system at the meeting on July 22, 2019, and compliance in the BASF

Group on December 18, 2019. In these meetings, the head of the Corporate Audit department and the Chief Compliance Officer reported to the Audit Committee and answered its questions. In all meetings, the Audit Committee also received information on the development of risks from litigation.

The **Nomination Committee** is responsible for preparing candidate proposals for the Supervisory Board members to be elected by the Annual Shareholders' Meeting. The Nomination Committee is guided by the objectives for the composition of the Supervisory Board adopted by the Supervisory Board as well as the competence profile and diversity concept for the Supervisory Board resolved at the meeting on December 21, 2017. The Nomination Committee met once in 2019. All but one committee member attended the meeting. Items discussed at the meeting were the existing competence profile and diversity concept for the Supervisory Board, potential candidates for election to the Supervisory Board in general and in the case of an unforeseen departure, as well as the assessment of the independence of the shareholder representatives on the Supervisory Board. A particular focus was the review and confirmation of the proposal to elect Dr. Kurt Bock in the Annual Shareholders' Meeting on April 30, 2020, to replace the current Chairman of the Supervisory Board Dr. Jürgen Hambrecht, who had announced on his election in 2019 his intention to leave the Supervisory Board after one year. Following this further review, the Nomination Committee continues to view Dr. Kurt Bock as the most suitable candidate to succeed Dr. Jürgen Hambrecht.

The **Strategy Committee** met once in 2019. The Committee was established to consult on strategic options for the further development of the BASF Group. All committee members attended the meeting. In the meeting, the Committee discussed the status of negotiations on the divestiture of the construction chemicals business and were informed of all material acquisition and divestiture projects.

Corporate governance and Declaration of Conformity

The Supervisory Board places great value on ensuring good corporate governance: In 2019, it was therefore once again intensely occupied with the corporate governance standards practiced in the company and the implementation of the recommendations and suggestions of the German Corporate Governance Code. An important topic of discussion here was the widely revised and restructured German Corporate Governance Code resolved by the German government in December 2019, and the translation of

the second E.U. Shareholder Rights Directive into German law. In addition, the competence profiles and diversity concepts adopted in 2017 for the Supervisory Board and the Board of Executive Directors were reviewed and confirmed.

For more information on the competence profiles, diversity concepts and composition goals, see the Corporate Governance Report on page 150 and from page 152 onward

In accordance with the recommendations of the German Corporate Governance Code and the Guiding principles for the dialog between investors and German supervisory boards, the Chairman of the Supervisory Board again sought dialog with investors where appropriate in 2019. In view of the 2020 Annual Shareholders' Meeting, the main topics were the changes to the compensation system for the Board of Executive Directors, as well as the successor to Dr. Jürgen Hambrecht, who will retire as Chairman of the Supervisory Board.

At its meeting of December 19, 2019, the Supervisory Board approved the joint Declaration of Conformity by the Supervisory Board and the Board of Executive Directors in accordance with section 161 of the German Stock Corporation Act (AktG). BASF complies with the recommendations of the German Corporate Governance Code in the version dated February 7, 2017, without exception. The Supervisory Board also resolved that, following its publication, the recommendations of the revised German Corporate Governance Code (2020 Code) are also to be complied with in the future. The Corporate Governance Report provides extensive information on the BASF Group's corporate governance.

The full Declaration of Conformity is rendered on page 183 and is available to shareholders on the company website at basf.com/en/corporategovernance

Independence and efficiency review

An important aspect of good corporate governance is the independence of Supervisory Board members and their freedom from conflicts of interest. The Supervisory Board based the assessment of the independence of its members on the recommendations of the German Corporate Governance Code and the additional criteria for assessing the independence of Supervisory Board members contained in the Rules of Procedure of the Supervisory Board, which were revised in the Supervisory Board meeting on December 19, 2019. According to the Supervisory Board's assessment, all twelve members of the Supervisory Board are considered to be independent. The criteria used for this evaluation can be found in the Corporate Governance Report on

page 153. In cases where Supervisory Board members hold supervisory or management positions at companies with which BASF has business relations, we see no impairment of their independence. The scope of these businesses is relatively marginal and furthermore takes place under conditions similar to those of a third party.

Contrary to previous practice, going forward, the Supervisory Board considers membership on the Supervisory Board for more than 12 years as a factor that precludes independence. Franz Fehrenbach reached this membership duration in January 2020, meaning that the Supervisory Board no longer considers him to be independent from this date onward. Beyond this limitation, however, the Supervisory Board does not see any indications that the Supervisory Board role is not performed completely independently. As a consequence of this change in assessed independence, the Supervisory Board resolved that Anke Schäferkordt is to replace Franz Fehrenbach on the Audit Committee as of March 1, 2020, to ensure that the shareholder representatives on the Audit Committee continue to solely be independent Supervisory Board members in the future.

The Supervisory Board reviews the efficiency of its activities every year in the form of a self-assessment. This was again conducted in 2019, with the Chairman of the Supervisory Board holding individual dialogs with each Supervisory Board member using a structured questionnaire. Topics centered in particular on Supervisory Board meeting agendas; cooperation with the Board of Executive Directors; the quality of the information supplied by the Supervisory Board; the tasks, composition and work of the committees, and cooperation between shareholder and employee representatives. The results of these dialogs, including suggestions to further improve the Supervisory Board's work, were presented and thoroughly discussed at the Supervisory Board meeting on December 19, 2019. Overall, its members rated the Supervisory Board's activity as efficient.

Independent of the efficiency review of the Supervisory Board, the Audit Committee also conducted a self-assessment of its activities in 2019 based on a written survey of the Committee members, which was conducted by the chairman of the Audit Committee using a detailed questionnaire. Material topic areas were the organization and content of the meetings, the quality of discussions, and the supply of information as the basis of the Committees' work. The Audit Committee discussed the results of the questionnaire at its meeting on December 18, 2019. It did not identify any need for change.

Separate and Consolidated Financial Statements

KPMG AG Wirtschaftsprüfungsgesellschaft, the auditor elected by the Annual Shareholders' Meeting for the 2019 reporting year, has audited the Financial Statements of BASF SE and the BASF Group Consolidated Financial Statements, which were prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union, and the additional requirements that must be applied in accordance with section 315e(1) of the German Commercial Code (HGB), including the Management's Report and the accounting records from which they were prepared, and have approved them free of qualification. Furthermore, the auditor certified that the Board of Executive Directors had taken the measures incumbent on it under section 91(2) of the German Stock Corporation Act (AktG) in an appropriate manner. In particular, it had instituted an appropriate information and monitoring system that fulfilled the requirements of the company and is applicable for the early identification of developments that could pose a risk to the continued existence of the BASF Group. The results of the audit as well as the procedure and material findings of the audit of the financial statements are presented in the Auditor's Report.

 The Auditor's Report is rendered from page 187 onward

For more information on the auditor, see the Corporate Governance Report on page 156

Beyond the statutory audit of the Financial Statements, KPMG also conducted, on behalf of the Supervisory Board, a substantive audit with limited assurance of the Nonfinancial Statements (NFSs) for BASF SE and the BASF Group, which are integral parts of the respective management's reports. On the basis of its audit, KPMG did not raise any objections to the nonfinancial reporting and the satisfaction of the relevant statutory requirements.

 The assurance report issued by KPMG on the substantive audit of the NFS can be found at basf.com/nfs-audit-2019

The auditor's reports were sent in a timely manner to every member of the Supervisory Board. The auditor attended the accounts review meeting of the Audit Committee on February 25, 2020, as well as the accounts meeting of the Supervisory Board on February 26, 2020, and reported on the procedure and material findings of its audit, including the key audit matters described in the Auditor's Report. The auditor also provided detailed explanations of the reports on the day before the accounts meeting of the Supervisory Board.

The Audit Committee reviewed the Financial Statements and Management's Report at its meeting on February 25, 2020, including the reports prepared by the auditor and the key audit matters specified in the Auditor's Report, and discussed them in detail with the auditor. The chairman gave a detailed account of the preliminary review at the Supervisory Board meeting on February 26, 2020. On this basis, the Supervisory Board has examined the Financial Statements and Management's Report of BASF SE for 2019, the proposal by the Board of Executive Directors for the appropriation of profit, and the Consolidated Financial Statements and Management's Report for 2019. The results of the preliminary review by the Audit Committee and the results of the Supervisory Board's own examination fully concur with those of the audit. The Supervisory Board sees no grounds for objection to the management or the reports submitted.

At its accounts meeting on February 26, 2020, the Supervisory Board approved the Financial Statements of BASF SE and the Consolidated Financial Statements of the BASF Group prepared by the Board of Executive Directors, making the 2019 Financial Statements final. The Supervisory Board concurs with the proposal of the Board of Executive Directors regarding the appropriation of profit and the payment of a dividend of €3.30 per share.

Composition of the Supervisory Board

The Supervisory Board's election term ended on conclusion of the Annual Shareholders' Meeting on May 3, 2019. The long-serving shareholder representatives Prof. Dr. François Diederich and Michael Diekmann did not stand for re-election. As shareholder representatives, the Annual Shareholders' Meeting elected Prof. Dr. Thomas Carell and Dr. Alexander C. Karp, who were nominated for election for the first time, and the incumbent Supervisory Board members Dame Alison Carnwath DBE, Franz Fehrenbach, Dr. Jürgen Hambrecht and Anke Schäferkordt. The six employee representative were already elected without any changes to the current composition by the BASF Works Council Europe on November 21, 2018, in accordance with the Employee Participation Agreement. We would like to thank the now retired members of the Supervisory Board, Prof. Dr. François Diederich and Michael Diekmann, for many years of constructive and trust-based cooperation, and their considerable contributions to the success and further development of the company.

According to the Supervisory Board's assessment, the current members meet in full the objectives for the composition of the Supervisory Board with respect to the competence profile and the diversity concept.

[For more information on changes within the Supervisory Board, see the Corporate Governance Report on page 153](#)

Thanks

The Supervisory Board wishes to thank all employees of the BASF Group worldwide and the management for their personal contribution in the 2019 business year.

Ludwigshafen, February 26, 2020

The Supervisory Board



Jürgen Hambrecht
Chairman of the Supervisory Board

Declaration of Conformity Pursuant to Section 161 AktG

Declaration of Conformity 2019 of the Board of Executive Directors and the Supervisory Board of BASF SE

**The Board of Executive Directors and the Supervisory
Board of BASF SE hereby declare pursuant to section 161
of the German Stock Corporation Act (AktG)**

The recommendations of the Government Commission on the German Corporate Governance Code as amended on February 7, 2017, published by the Federal Ministry of Justice on April 24, 2017, in the official section of the electronic Federal Gazette are complied with and have been complied with since the submission of the last Declaration of Conformity in December 2018.

Ludwigshafen, December 2019

The Supervisory Board
of BASF SE

The Board of Executive Directors
of BASF SE

Declaration of Corporate Governance

Declaration of Corporate Governance in accordance with section 315d HGB in connection with section 289f HGB

The Declaration of Corporate Governance, pursuant to section 315d HGB in connection with section 289f HGB, comprises the subchapters Corporate Governance Report including the description of the diversity concept for the composition of the Board of Executive Directors and the Supervisory Board (except for the disclosures pursuant to section 315a(1) HGB), Compliance and Declaration of Conformity as per section 161 of the German Stock Corporation Act (AktG) in the Corporate Governance chapter. It is a component of the Management's Report.

Pursuant to section 317(2) sentence 6 HGB, the auditor checked that the disclosures according to section 315d HGB were made.

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Consolidated Financial Statements

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Statement by the Board of Executive Directors

and assurance pursuant to sections 297(2) and 315(1) of the German Commercial Code (HGB)

The Board of Executive Directors of BASF SE is responsible for preparing the Consolidated Financial Statements and Management's Report of the BASF Group.

The BASF Group Consolidated Financial Statements for 2019 were prepared according to the International Financial Reporting Standards (IFRS), which are published by the International Accounting Standards Board (IASB), London, and have been endorsed by the European Union.

We have established effective internal control and steering systems in order to ensure that the BASF Group's Management's Report and Consolidated Financial Statements comply with applicable accounting rules and to ensure proper corporate reporting.

The risk management system we have set up is designed such that the Board of Executive Directors can identify material risks early on and take appropriate defensive measures as necessary. The reliability and effectiveness of the internal control and risk management system are continually audited throughout the Group by our internal audit department.

To the best of our knowledge, and in accordance with the applicable reporting rules, the Consolidated Financial Statements of the BASF Group give a true and fair view of the net assets, financial position and results of operations of the Group, and the Management's Report of the BASF Group includes a fair review of the development and performance of the business as well as position of the BASF Group, together with a description of the principal opportunities and risks associated with the expected development of the BASF Group.

Ludwigshafen am Rhein, February 25, 2020



Dr. Martin Bruder Müller

Chairman and Chief Technology Officer



Dr. Hans-Ulrich Engel

Vice Chairman and Chief Financial Officer



Saori Dubourg



Michael Heinz



Dr. Markus Kamieth



Wayne T. Smith

Independent Auditor's Report¹

To BASF SE, Ludwigshafen am Rhein

Report on the Audit of the Consolidated Financial Statements and of the Group Management Report

Opinions

We have audited the Consolidated Financial Statements of BASF SE and its subsidiaries (the Group), which comprise the balance sheet as at December 31, 2019, statement of income, statement of income and expense recognized in equity, statement of cash flows, statement of equity for the financial year from January 1, 2019 to December 31, 2019 and Notes to the Consolidated Financial Statements, including a summary of significant accounting policies. In addition, we have audited the Group Management Report of BASF SE for the financial year from January 1, 2019 to December 31, 2019. In addition, we have been instructed to express an opinion as to whether the Consolidated Financial Statements comply with full IFRS. In accordance with the German legal requirements we have not audited those parts of the Group Management Report which are described in section "Other Information" of our auditor's report.

The Group Management Report contains cross-references which are not intended to use by law and are identified as unaudited. In accordance with the German legal requirements we have not audited the content of those cross-references and the related referenced information.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying Consolidated Financial Statements comply, in all material respects, with the IFRSs as adopted by the EU, the additional requirements of German commercial law pursuant to

Section 315e (1) of the German Commercial Code (HGB) and full IFRS, and in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at December 31, 2019, and of its financial performance for the financial year from January 1, 2019 to December 31, 2019, and

- the accompanying Group Management Report as a whole provides an appropriate view of the Group's position. In all material respects, this Group Management Report is consistent with the Consolidated Financial Statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our opinion on the Group Management Report does not cover the content of those parts of the Group Management Report which are described in section "Other Information" of our auditor's report. The Group Management Report contains cross-references which are not legally required and are identified as unaudited. Our opinion does not cover those cross-references and the related referenced information.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the Consolidated Financial Statements and of the Group Management Report.

Basis for the Opinions

We conducted our audit of the Consolidated Financial Statements and of the Group Management Report in accordance with Section 317 HGB and the EU Audit Regulation No. 537/2014 (referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer, IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commer-

cial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the Consolidated Financial Statements and on the Group Management Report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the Consolidated Financial Statements for the financial year from January 1, 2019 to December 31, 2019. These matters were addressed in the context of our audit of the Consolidated Financial Statements as a whole, and in forming our opinion thereon, we do not provide a separate opinion on these matters.

Recoverability of goodwill

For information on the accounting principles applied, please refer to Note 1.4 to the Consolidated Financial Statements on page 205. The underlying assumptions used in the calculation and the disclosures on the impairment tests performed are included in Note 14 to the Consolidated Financial Statements from page 239 onward.

Financial statement risk

Intangible assets in the Consolidated Financial Statements of BASF SE include goodwill in the amount of €8,105 million. Goodwill must be tested for impairment annually and whenever there is an indication that goodwill may be impaired.

Goodwill impairment testing is complex and based on a range of discretionary assumptions. These include the forecasts for future cash inflows in the detailed planning period, the assumed growth rate for subsequent periods, as well as the cost of capital. These

¹ This is a translation of the German original. Solely the original text in German language is authoritative.

assumptions have a material impact on the recoverability of goodwill. The growth forecasts of the Board of Executive Directors are associated with risks and can be revised in light of volatile raw materials prices and an instable macroeconomic environment.

There is the risk for the financial statements that impairment has not been identified. In addition, there is also a risk that the disclosures in the Notes on the key assumptions are not appropriate.

Our audit approach

We examined the forecast for future cash inflows in the detailed planning period, in particular with respect to whether the expected development of the relevant sales markets were given appropriate consideration and are consistent with the current budget adopted by the Board of Executive Directors and the Supervisory Board. We compared internal growth forecasts with industry expectations and those of significant competitors. We also reviewed whether the assumptions in the budget adopted by the Board of Executive Directors and the Supervisory Board about the future development of margins and the amount of investments are appropriate. Our review of the appropriateness of the budget adopted by the Board of Executive Directors and the Supervisory Board also included a comparison of planning in past business years with the results actually achieved. For selected units, we examined whether reasons for not reaching planned values in the past were given appropriate consideration in current planning, to the extent that this was relevant.

We assessed the appropriateness of the assumed growth rate for the period following the detailed planning period on the basis of industry and macroeconomic studies. We satisfied ourselves of the methodological appropriateness of the calculation and the appropriateness of the weighted cost of capital rates. To this end, we calculated our own expected values for the assumptions and parameters underlying the weighted cost of capital rates and compared these with the assumptions and parameters used. The audit team was supported by our company valuation specialists.

Finally, we assessed whether the disclosures in the Notes on the key assumptions are appropriate.

Our observations

The assumptions underlying the calculations of the Board of Executive Directors are balanced overall. The disclosures in the Notes on the key assumptions are appropriate.

Accounting for the interest in Wintershall Dea

For information on the accounting principles applied and on BASF's oil and gas price scenario, please refer to Note 1.4 to the Consolidated Financial Statements on pages 205 to 206. The underlying assumptions used in the calculation can be found in Note 2.5 to the Consolidated Financial Statements from page 216 onward.

Financial statement risk

BASF and LetterOne completed the merger of their oil and gas businesses on May 1, 2019. BASF's oil and gas activities, which had been accounted for as a discontinued operation until this date, were contributed to the joint venture Wintershall Dea. The share retained in Wintershall Dea in connection with the loss of control over the oil and gas activities is recognized at fair value on the date of the transaction in accordance with IFRS 10. The resulting gain of €5,684 million is included in income after taxes from discontinued operations. Since the transaction was completed, BASF has accounted for the interest according to the equity method.

The fair value of the interest in the Wintershall Dea joint venture was calculated internally by BASF on closing of the transaction; this calculation is complex and based on discretionary assumptions. These include, in particular, BASF's forecasts on production volumes of the joint venture's oil and gas fields based on expected license terms and production profiles, the development of oil and gas prices, and the cost of capital. In addition, the identification of the assets, liabilities and equity components of the oil and gas activities

to be derecognized on initial recognition of the interest in the joint venture is a complex process.

There is a risk for the Consolidated Financial Statements that the fair value of the interest in the Wintershall Dea joint venture is not calculated properly, and that the assets, liabilities and equity components allocated to BASF's oil and gas business have not been properly identified. Furthermore, there is a risk that the disclosures on the divestiture of the oil and gas business and on the interest in the Wintershall Dea joint venture in the Notes to the Consolidated Financial Statements are not sufficiently detailed and appropriate.

Our audit approach

We started by assessing whether the assets, liabilities and noncontrolling interests to be derecognized in connection with the loss of control were properly identified. In addition, we evaluated whether the equity components were properly reclassified to profit or loss for the year or recognized directly in retained earnings.

We consulted our valuation specialists in order to assess, among other things, whether the calculation of the fair value of the interest in the Wintershall Dea joint venture is consistent with the relevant accounting principles, and whether the key assumptions made in this calculation are appropriate. In doing so, we assessed the competence, abilities and objectivity of the internal experts used by BASF to measure the interest in the Wintershall Dea joint venture. We also evaluated whether the underlying process used to identify Wintershall Dea's assets and liabilities is appropriate based on our knowledge of BASF's business model.

We discussed the projected development of production volumes and oil and gas prices with the persons responsible for planning. We evaluated the production profiles used in the measurement of the exploration and production business's assets on the basis of discussions with the client's experts, taking into account the assessments submitted. In order to assess its suitability as a basis for calculation, we had the oil and gas price scenario used by the company explained to us. To assess its appropriateness, we compared the oil and gas price scenario used by BASF with the published forecasts of industry associations, analysts, international institutions and other market participants. We compared the assumptions and parameters underlying the cost of capital, in particular the risk-free rate, the market risk premium and the beta factor, with our own assumptions and publicly available data.

In order to assess the accuracy of the measurement of the interest in the Wintershall Dea joint venture, we reproduced selected calculations taking into account risk-based considerations.

In addition, we satisfied ourselves of the correct presentation of the transaction in the Consolidated Financial Statements of BASF SE. In doing so, we also assessed whether the disclosures on the divestiture of the oil and gas business and on the interest in the Wintershall Dea joint venture contained in the Notes to the Consolidated Financial Statements are sufficiently detailed and appropriate.

Our observations

The assumptions and parameters underlying the calculation of the fair value of the interest in the Wintershall Dea joint venture are appropriate. The assets, liabilities and equity components allocated to the oil and gas activities of BASF for the calculation of the disposal gain have been properly identified. The disclosures in the Notes to the Consolidated Financial Statements on the divestiture of the oil and gas business, as well as on the interest in the Wintershall Dea joint venture, are sufficiently detailed and appropriate.

Accounting treatment of the construction chemicals business

For information on the accounting principles applied, please refer to Note 1.4 to the Consolidated Financial Statements on pages 204 to 205. Information on the discontinued construction chemicals business can be found in Note 2.5 to the Consolidated Financial Statements from page 215 onward.

Financial statement risk

On December 21, 2019, BASF signed an agreement with Lone Star Funds on the sale of the construction chemicals business. The construction chemicals business represents a separate, material business area of BASF. Until conclusion of the agreement, it was accounted for as the Construction Chemicals division in the Surface Technologies segment. Since signing of the agreement, the Construction Chemicals division has been classified as a discontinued operation in accordance with IFRS 5. The transaction is expected to be concluded in the third quarter of 2020. The income after tax of the construction chemicals business (€24 million; previous year: €34 million) is included in income after taxes from discontinued operations.

The accounting treatment of the Construction Chemicals division as a discontinued operation in accordance with IFRS 5 is complex. This applies in particular to the identification of the assets and liabilities allocated to discontinued operations in Group companies that have activities in several divisions. In addition, the explanatory disclosures on the discontinued operation in the Notes to the Consolidated Financial Statements are complex.

There is a risk for the Consolidated Financial Statements that the expenses and income, and the assets and liabilities allocated to discontinued operation have not been properly identified and thus that the presentation of discontinued operations in the consolidated statement of income and in the balance sheet is not correct. With respect to the explanatory disclosures on discontinued operations in the Notes to the Consolidated Financial Statements, there is a risk that the explanations are not sufficiently detailed and appropriate.

Our audit approach

In a first step, we gained an understanding of the process used by BASF to identify the activities of the discontinued operation. To this end, we analyzed, among other things, the underlying allocation concept with respect to completeness and conformity with IFRS 5. The risk-based focus of our audit procedures on the allocation of assets and liabilities, and expenses and income, was on Group companies that have activities in several divisions. In doing so, we examined whether the allocation is consistent with BASF's internal reporting systems and the provisions of the purchase agreement signed with Lone Star Funds.

In addition, we evaluated whether the explanations on the discontinued operation contained in the Notes to the Consolidated Financial Statements are sufficiently detailed and appropriate.

Our observations

The allocation of the assets and liabilities, as well as the expenses and income of the Construction Chemicals division to discontinued operations is appropriate and consistent with IFRS 5. The corresponding explanations in the Notes to the Consolidated Financial Statements are sufficiently detailed and appropriate.

Accounting treatment of the pigments business

For information on the accounting principles applied, please refer to Note 1.4 to the Consolidated Financial Statements on pages 204 to 205. Information on the disposal group can be found in Note 2.5 to the Consolidated Financial Statements from page 217 onward.

Financial statement risk

On August 28, 2019, BASF signed an agreement with DIC on the sale of the pigments business. The pigments business is part of the Dispersions & Pigments division in the Industrial Solutions segment. The pigments business has been classified as a disposal group in accordance with IFRS 5 since signing of the agreement. The transaction is expected to be concluded in the fourth quarter of 2020. The measurement of the disposal group at fair value less costs to sell in accordance with IFRS 5 led to an impairment charge of €73 million.

The measurement of the disposal group for the pigments business in accordance with IFRS 5 is complex and based on discretionary assumptions. These include valuation assumptions such as expected future cash inflows and risk-equivalent discount rates, which market participants would be able to use to determine the price for the disposal group. In addition, the explanatory disclosures on the disposal group in the Notes to the Consolidated Financial Statements are complex.

There is the risk for the financial statements that the measurement of the disposal group is not appropriate. There is a risk that the explanatory disclosures on the disposal group in the Notes to the Consolidated Financial Statements are not sufficiently detailed and appropriate.

Our audit approach

In a first step, we gained an understanding of the approach used by BASF to measure the fair values less costs to sell of the pigments business. To this end, we analyzed whether the approach underlying the measurement is consistent with IFRS.

We examined the calculation of fair value less costs to sell, in particular with respect to whether the transaction price used can be derived from the underlying agreement, and whether the other input factors are appropriate, such as future cash inflows until the completion of the transaction and risk-equivalent discount rates.

Furthermore, we evaluated whether the explanations on the disposal group in the Notes to the Consolidated Financial Statements are sufficiently detailed and appropriate.

Our observations

The assumptions and parameters underlying the measurement of the disposal group for the pigments business are appropriate. The explanations relating to the disposal group in the Notes to the Consolidated Financial Statements are sufficiently detailed and appropriate.

Initial application of the new IFRS 16 – Leases accounting standard

For information on the accounting principles applied, please refer to Note 28 to the Consolidated Financial Statements on page 279. Disclosures on the effects of initial application and reconciliations can be found in Note 28 on pages 280 to 281 of the Notes to the Consolidated Financial Statements.

Financial statement risk

As of December 31, 2019, right-of-use assets in the amount of €1,655 million and lease liabilities in the amount of €1,420 million were recognized in BASF's Consolidated Financial Statements.

Lease liabilities account for 1.6% of total assets and thus have a material impact on the company's net assets and financial position.

The initial application of the new IFRS 16 – Leases accounting standard led to material effects on the opening balance for the fiscal year and their development as of the balance sheet date. BASF SE applies the new standard in accordance with the modified retrospective method.

The calculation of the lease term and the incremental borrowing rates used as discount rates can be discretionary and based on estimates. In addition, extensive data from the leases must be recorded to calculate the initial effects of IFRS 16 and the development of lease liabilities and right-of-use assets in accordance with the standard. This data is the basis for the measurement and recognition of the lease liabilities and right-of-use assets.

There is a risk for the Consolidated Financial Statements that the lease liabilities and right-of-use assets are not recognized in full in the balance sheet. Furthermore, there is a risk that the lease liabilities and right-of-use assets have not been measured correctly.

Our audit approach

In a first step, we gained an understanding of the process used by BASF SE to implement the new IFRS 16 accounting standard. We then analyzed the accounting instructions underlying the implementation for completeness and conformity with IFRS 16.

For selected leases, chosen in part on a representative and in part on a risk-oriented basis, we reviewed whether the relevant data was recorded correctly and in full. To the extent that discretionary decisions were made regarding the lease term, we reviewed whether, in light of the market conditions and risks in the industry, the underlying assumptions are plausible and consistent with other assumptions made in the Consolidated Financial Statements.

In consultation with our valuation specialists, we compared the assumptions and parameters underlying the incremental borrowing rates with our own assumptions and publicly available data. In addition, we evaluated the appropriateness of the model used to calculate the interest rate and reproduced the calculation of the incremental borrowing rates on a risk-oriented basis.

We reproduced BASF's calculations of the carrying amounts of the lease liabilities and right-of-use assets. To this end, we evaluated the measurement and recognition of lease liabilities and right-of-use assets performed by the IT system for selected leases, chosen in part on a representative and in part on a risk-oriented basis. The risk-based assessment included an evaluation of proper measurement in the case of changes to or reassessments of the underlying contract.

To the extent that IT processing systems were used to calculate and consolidate the relevant data, in consultation with our IT specialists, we tested the effectiveness of the rules and processes in the underlying accounting-relevant IT system.

Our observations

BASF SE has established an appropriate process to recognize leases in accordance with IFRS 16. The assumptions and parameters underlying the measurement of lease liabilities and right-of-use assets are appropriate overall.

Other information

The Board of Executive Directors and the Supervisory Board are responsible for the other information. The other information comprises:

- the information of the integrated non-financial statement which is identified as unaudited
- the corporate governance statement in the section Corporate Governance of the Group Management Report, and
- the disclosures which are not normally part of the Group Management Report and which are identified as unaudited.

Additionally the other information comprises the remaining parts of the BASF Report 2019.

The other information does not comprise the Consolidated Financial Statements, the audited parts of the Group Management Report and our auditor's report.

Our opinions on the Consolidated Financial Statements and on the Group Management Report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the Consolidated Financial Statements, with the Group Management Report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the Board of Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

Board of Executive Directors is responsible for the preparation of the Consolidated Financial Statements that comply, in all material respects, with IFRSs as adopted by the EU, the additional requirements of German commercial law pursuant to Section 315e (1) HGB and full IFRS and that the Consolidated Financial Statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the Board of Executive Directors is responsible for such internal control as they have determined necessary to enable the preparation of Consolidated Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Consolidated Financial Statements, the Board of Executive Directors is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the Board of Executive Directors is responsible for the preparation of the Group Management Report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the Consolidated Financial Statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the Board of Executive Directors is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a Group Management Report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the Group Management Report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the Consolidated Financial Statements and of the Group Management Report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the Consolidated Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and whether the Group Management Report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the Consolidated Financial Statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the Consolidated Financial Statements and on the Group Management Report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Consolidated Financial Statements and this Group Management Report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Consolidated Financial Statements and of the Group Management Report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the Consolidated Financial Statements and of arrangements and measures (systems) relevant to the audit of the Group Management Report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the Board of Executive Directors and the reasonableness of estimates made by the Board of Executive Directors and related disclosures.
- Conclude on the appropriateness of the Board of Executive Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the Consolidated Financial Statements and in the Group Management Report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the Consolidated Financial Statements, including the disclosures, and whether the Consolidated Financial Statements present the underlying transactions and events in a manner that the Consolidated Financial Statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU, the additional requirements of German commercial law pursuant to Section 315e (1) HGB and full IFRS.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the Consolidated Financial Statements and on the Group Management Report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the Group Management Report with the Consolidated Financial Statements, its conformity with law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the Board of Executive Directors in the Group Management Report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the Board of Executive Directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with the audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the audit committee with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with the audit committee, we determine those matters that were of most significance in the audit of the Consolidated Financial Statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other Legal and Regulatory Requirements

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on May 3, 2019. We were engaged by the Chairwoman of the audit committee on July 18, 2019. We have been the group auditor of BASF SE without interruption since the financial year 2006.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

German Public Auditor Responsible for the Engagement

The German Public Auditor responsible for the engagement is Alexander Bock.

Frankfurt am Main, February 25, 2020

KPMG AG
Wirtschaftsprüfungsgesellschaft
[Original German version signed by:]

Sailer

Wirtschaftsprüfer
[German Public Auditor]

Bock

Wirtschaftsprüfer
[German Public Auditor]

Statement of Income

BASF Group

Statement of income

Million €

	Explanations in Note	2019	2018 restated ^a	2018 previous
Sales revenue	[6]	59,316	60,220	62,675
Cost of sales	[6]	(43,061)	(42,914)	(44,319)
Gross profit on sales		16,255	17,306	18,356
Selling expenses	[7]	(7,912)	(7,715)	(8,588)
General administrative expenses	[7]	(1,310)	(1,356)	(1,426)
Research and development expenses	[7]	(2,158)	(1,994)	(2,028)
Other operating income	[8]	2,095	1,812	1,815
Other operating expenses	[8]	(3,034)	(2,348)	(2,365)
Income from companies accounted for using the equity method	[9]	116	269	269
Income from operations	[4]	4,052	5,974	6,033
Income from other shareholdings		33	35	36
Expenses from other shareholdings		(78)	(78)	(78)
Net income from shareholdings		(45)	(43)	(42)
Interest income		183	174	174
Interest expenses		(648)	(537)	(540)
Interest result		(465)	(363)	(366)
Other financial income		35	33	32
Other financial expenses		(275)	(368)	(369)
Other financial result		(240)	(335)	(337)
Financial result	[10]	(750)	(741)	(745)
Income before income taxes		3,302	5,233	5,288
Income taxes	[11]	(756)	(1,117)	(1,138)
Income after taxes from continuing operations		2,546	4,116	4,150
Income after taxes from discontinued operations	[2]	5,945	863	829
Income after taxes		8,491	4,979	4,979
Noncontrolling interests	[12]	(70)	(272)	(272)
Net income		8,421	4,707	4,707
Earnings per share from continuing operations (€)	[5]	2.72	4.26	4.29
Earnings per share from discontinued operations (€)	[5]	6.45	0.86	0.83
Earnings per share (€)	[5]	9.17	5.12	5.12
Dilution effect (€)	[5]	(0.02)	(0.01)	(0.01)
Diluted earnings per share (€)	[5]	9.15	5.11	5.11

^a Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations. For more information, see Note 1.4 on page 204 of these Notes.

Statement of Income and Expense Recognized in Equity

BASF Group

Statement of comprehensive income^a

Million €

	2019			2018		
	BASF Group	Shareholders of BASF SE	Noncontrolling interests	BASF Group	Shareholders of BASF SE	Noncontrolling interests
Income after taxes	8,491	8,421	70	4,979	4,707	272
Remeasurement of defined benefit plans ^b	(706)	(706)	–	(977)	(977)	–
Deferred taxes on nonreclassifiable gains/losses	359	359	–	235	235	–
Nonreclassifiable gains/losses after taxes from equity-accounted investments	(46)	(46)	–	(3)	(3)	–
Nonreclassifiable gains/losses	(393)	(393)	–	(745)	(745)	–
Unrealized gains/losses from fair value changes in securities measured at FVOCI ^c	–	–	–	1	1	–
Reclassification of realized gains/losses recognized in the statement of income	–	–	–	–	–	–
Fair value changes in securities measured through other comprehensive income, net^d	–	–	–	1	1	–
Unrealized gains/losses in connection with cash flow hedges	25	25	–	19	19	–
Reclassification of realized gains/losses recognized in the statement of income	54	54	–	(44)	(44)	–
Fair value changes in options designated as cash flow hedges, net^d	79	79	–	(25)	(25)	–
Unrealized gains/losses from currency translation	481	466	15	194	172	22
Reclassification of realized gains/losses from currency translation recognized in the statement of income	834	834	–	–	–	–
Deferred taxes on reclassifiable gains/losses	(28)	(28)	–	9	9	–
Reclassifiable gains/losses after taxes from equity-accounted investments	(9)	(9)	–	(20)	(20)	–
Reclassifiable gains/losses	1,357	1,342	15	159	137	22
Other comprehensive income after taxes	964	949	15	(586)	(608)	22
Comprehensive income	9,455	9,370	85	4,393	4,099	294

^a For more information on other comprehensive income, see Note 20 on page 252 of the Notes.

^b For more information, see Note 22 from page 253 onward.

^c FVOCI: fair value through other comprehensive income

^d For more information, see Note 27 from page 266 onward.

Development of income and expense recognized in equity attributable to shareholders of BASF SE

Million €

	Other comprehensive income				
	Remeasurement of defined benefit plans	Unrealized gains/losses from currency translation	Measurement of securities at fair value	Cash flow hedges	Total income and expense recognized in equity
As of January 1, 2019	(5,365)	(466)	5	(113)	(5,939)
Changes	(752)	1,279	–	91	618
Transfers	140	–	–	–	140
Deferred taxes	359	(15)	–	(13)	331
As of December 31, 2019	(5,618)	798	5	(35)	(4,850)
As of January 1, 2018	(4,620)	(605)	4	(110)	(5,331)
Changes	(980)	141	1	(14)	(852)
Transfers	–	–	–	–	–
Deferred taxes	235	(2)	–	11	244
As of December 31, 2018	(5,365)	(466)	5	(113)	(5,939)

Balance Sheet

BASF Group

Assets

Million €		December 31, 2019	December 31, 2018
	Explanations in Note		
Intangible assets	[14]	14,525	16,554
Property, plant and equipment	[15]	21,792	20,780
Investments accounted for using the equity method	[16]	15,008	2,203
Other financial assets	[16]	636	570
Deferred tax assets	[11]	2,887	2,342
Other receivables and miscellaneous assets	[18]	1,112	886
Noncurrent assets		55,960	43,335
Inventories	[17]	11,223	12,166
Accounts receivable, trade	[18]	9,093	10,665
Other receivables and miscellaneous assets	[18]	3,790	3,139
Marketable securities		444	344
Cash and cash equivalents ^a		2,427	2,300
Assets of disposal groups	[2]	4,013	14,607
Current assets		30,990	43,221
Total assets		86,950	86,556

^a For a reconciliation of the amounts in the statement of cash flows with the balance sheet item cash and cash equivalents, see page 199.

Equity and liabilities

Million €			December 31, 2019	December 31, 2018
	Explanations in Note			
Subscribed capital	[19]		1,176	1,176
Capital reserves	[19]		3,115	3,118
Retained earnings	[19]		42,056	36,699
Other comprehensive income	[20]		(4,850)	(5,939)
Equity attributable to shareholders of BASF SE			41,497	35,054
Noncontrolling interests	[21]		853	1,055
Equity			42,350	36,109
Provisions for pensions and similar obligations	[22]		7,683	7,434
Tax provisions and deferred tax liabilities	[11]		2,280	2,346
Other provisions	[23]		1,340	1,301
Financial indebtedness	[24]		15,015	15,332
Other liabilities	[24]		1,678	705
Noncurrent liabilities			27,996	27,118
Accounts payable, trade			5,087	5,122
Provisions	[23]		2,938	3,252
Tax liabilities	[11]		756	695
Financial indebtedness	[24]		3,362	5,509
Other liabilities	[24]		3,427	2,998
Liabilities of disposal groups	[2]		1,034	5,753
Current liabilities			16,604	23,329
Total equity and liabilities			86,950	86,556

Statement of Cash Flows

BASF Group

Statement of cash flows^a

Million €

	2019	2018
Net income	8,421	4,707
Depreciation and amortization of intangible assets and property, plant and equipment	4,218	3,750
Changes in inventories	479	(1,249)
Changes in receivables	25	(394)
Changes in operating liabilities and other provisions	906	1,113
Changes in pension provisions, defined benefit assets and other items	(5,941)	78
Gains (-) / losses (+) from the disposal of noncurrent assets and securities	(634)	(66)
Cash flows from operating activities	7,474	7,939
Payments made for intangible assets and property, plant and equipment	(3,824)	(3,894)
Payments made for financial assets and securities	(1,126)	(1,210)
Payments made for acquisitions	(239)	(7,362)
Payments received for divestitures	2,600	107
Payments received from the disposal of noncurrent assets and securities	1,399	555
Cash flows from investing activities	(1,190)	(11,804)
Capital increases/repayments and other equity transactions	1	3
Additions to financial and similar liabilities	10,357	6,355
Repayment of financial and similar liabilities	(13,699)	(3,389)
Dividends paid		
To shareholders of BASF SE	(2,939)	(2,847)
noncontrolling interests	(125)	(174)
Cash flows from financing activities	(6,405)	(52)
Net changes in cash and cash equivalents	(121)	(3,917)
Changes in cash and cash equivalents		
From foreign exchange rates	37	(59)
changes in the scope of consolidation	20	–
Cash and cash equivalents at the beginning of the year^b	2,519	6,495
Cash and cash equivalents at the end of the year^b	2,455	2,519

^a More information on the statement of cash flows can be found in the Management's Report (Financial Position) on page 54. Other information on cash flows can be found in Note 29 from page 282 onward.

^b In 2019 and 2018, cash and cash equivalents presented in the statement of cash flows deviate from the figures in the balance sheet due to the reclassification of cash and cash equivalents to disposal groups: for the construction chemicals business (€21 million) and the pigments business (€7 million) in 2019, and for the oil and gas business (€219 million) in 2018.

Statement of Changes in Equity

BASF Group

Statement of changes in equity^a

Million €

	Number of shares outstanding	Subscribed capital	Capital reserves	Retained earnings	Other comprehensive income ^b	Equity attributable to shareholders of BASF SE	Noncontrolling interests	Equity
As of January 1, 2019	918,478,694	1,176	3,118	36,699	(5,939)	35,054	1,055	36,109
Effects of acquisitions achieved in stages	–	–	–	–	–	–	–	–
Dividends paid	–	–	–	(2,939)	–	(2,939)	(125) ^c	(3,064)
Income after taxes	–	–	–	8,421	–	8,421	70	8,491
Changes to income and expense recognized directly in equity	–	–	–	–	949	949	15	964
Changes in scope of consolidation and other changes	–	–	(3) ^d	(125)	140	12	(162)	(150)
As of December 31, 2019	918,478,694	1,176	3,115	42,056	(4,850)	41,497	853	42,350
As of January 1, 2018	918,478,694	1,176	3,117	34,847	(5,331)	33,809	917	34,726
Effects of acquisitions achieved in stages	–	–	–	–	–	–	–	–
Dividends paid	–	–	–	(2,847)	–	(2,847)	(174) ^c	(3,021)
Income after taxes	–	–	–	4,707	–	4,707	272	4,979
Changes to income and expense recognized directly in equity	–	–	–	–	(608)	(608)	22	(586)
Changes in scope of consolidation and other changes	–	–	1 ^d	(8)	–	(7)	18	11
As of December 31, 2018	918,478,694	1,176	3,118	36,699	(5,939)	35,054	1,055	36,109

^a For more information on the items relating to equity, see Notes 19 and 20 from page 251 onward.

^b Details are provided in the Statement of Income and Expense Recognized in Equity on page 195.

^c Including profit and loss transfers

^d Granting of BASF shares under BASF's "plus" share program

Notes

Policies and Scope of Consolidation

1 Summary of accounting policies

1.1 General information

BASF SE (registered at the district trade register, or *Amtsgericht*, for Ludwigshafen am Rhein, number HRB 6000) is a publicly listed corporation headquartered in Ludwigshafen am Rhein, Germany. Its official address is Carl-Bosch-Str. 38, 67056 Ludwigshafen am Rhein, Germany.

The Consolidated Financial Statements of BASF SE as of December 31, 2019, have been prepared in accordance with the International Financial Reporting Standards (IFRS) of the International Accounting Standards Board (IASB), and section 315a (1) of the German Commercial Code (HGB). IFRSs are generally only applied after they have been endorsed by the European Union. For the 2019 fiscal year, all of the binding IFRSs and pronouncements of the International Financial Reporting Interpretations Committee (IFRIC) were applied.

The Consolidated Financial Statements are presented in euros. All amounts, including the figures for previous years, are given in million euros unless otherwise indicated.

The individual financial statements of the consolidated companies are prepared as of the balance sheet date of the Consolidated Financial Statements. The accounting policies applied are largely the same as those used in 2018, with the exception of any changes arising from the application of new or revised accounting standards.

On February 24, 2020, the Board of Executive Directors prepared the Consolidated Financial Statements, submitted them to the Supervisory Board for review and approval, and released them for publication.

1.2 Changes in accounting principles

Accounting policies applied for the first time in 2019

IFRS 16 – Leases

IFRS 16 – Leases was endorsed by the European Union on October 31, 2017, and applied by BASF for the first time as of January 1, 2019. IFRS 16 requires an accounting model for a lessee that recognizes all right-of-use assets and liabilities from lease agreements in the balance sheet. As for the lessor, the new standard substantially carries forward the accounting requirements of IAS 17 – Leases because lessors must continue to classify leases as either finance or operating leases.

The effects of first-time application of IFRS 16 on BASF are presented in Note 28.

 For more information on leases, see Note 28 from page 279 onward

Amendments to IFRS 9 – Financial Assets with a Prepayment Feature with Negative Compensation

The amendments pertain to the relevant criteria for the classification of financial assets and were endorsed by the European Union on March 22, 2018. Financial assets with a prepayment feature with negative compensation may be recognized under certain conditions at amortized cost or at fair value through other comprehensive income instead of at fair value through profit and loss. The amendments have no effect on BASF.

IFRIC 23 – Uncertainty over Income Tax Treatments

IFRIC 23 expands on the requirements in IAS 12 on how to account for uncertainties surrounding the income tax treatment of circumstances and transactions with respect to both actual and deferred taxes. The amendments were endorsed by the European Union on October 23, 2018. They have no material effect on BASF.

Amendments to IAS 28 – Long-Term Interests in Associates and Joint Ventures

On October 12, 2017, the IASB published amendments with respect to the accounting treatment of long-term interests in associated companies and joint ventures. These amendments were endorsed by the European Union on February 8, 2019. They clarify that IFRS 9 is to be applied to long-term interests in associated companies or joint ventures that are not accounted for using the equity method. The amendments have no material effect on BASF.

Annual Improvements to IFRS 2015–2017

Four standards were amended in the Annual Improvements to IFRSs (2015–2017). The amendments were endorsed by the European Union on March 14, 2019. They have no material effect on BASF.

In IFRS 3 – Business Combinations, it was clarified that when a party to a joint arrangement obtains control of a business that is a joint operation and had rights to the assets and obligations for the liabilities relating to that joint operation immediately before the acquisition date, the transaction is a business combination achieved in stages. The acquirer shall therefore apply the requirements for a business combination achieved in stages, including remeasuring its previously held interest in the joint operation.

In IFRS 11 – Joint Arrangements, it was clarified that if an entity obtains joint control of a business that is a joint operation and had rights to the assets and obligations for the liabilities relating to that joint operation immediately before the acquisition date, the previously held interest in that business is not remeasured.

IAS 12 – Income Taxes was amended to the extent that all income tax effects of dividend payments must be considered in the same way as the income on which the dividends are based.

In IAS 23 – Borrowing Costs, it was determined that when entities borrow funds in general for the acquisition of qualifying assets that those costs for capital borrowed specifically for the acquisition of qualifying assets should not be considered in the determination of the financing rate until their completion.

Improvements to IAS 19 – Plan Amendment, Curtailment or Settlement

The amendments relate to the measurement of pension obligations based on updated assumptions if plan amendment, curtailment or settlement occurs. After such an event, the past service cost as well as any gains or losses on the basis of current actuarial assumptions and a comparison of the resulting pension benefits must be calculated before and after the change. The periods before and after the plan amendment, curtailment or settlement are treated separately in subsequent measurement. The improvements were endorsed by the European Union on March 13, 2019. Only minor effects resulted from the improvements to IAS 19 for BASF in 2019.

IFRSs and IFRICs not yet to be considered but already endorsed by the E.U.

The effects on the BASF Group financial statements of the IFRSs and IFRICs not yet in force in 2019 but already endorsed by the European Union were reviewed and are explained below. BASF currently assumes that they will have no material effect on the Consolidated Financial Statements.

Amendments to References to the Conceptual Framework in IFRS Standards

The amendments update references to and quotes from the Conceptual Framework. The amendments were endorsed by the E.U. on November 29, 2019. The revised Conceptual Framework issued on March 29, 2018 replaces the previous Conceptual Framework from 2010. The main changes primarily relate to the definition, recognition and measurement of assets and liabilities, as well as the differentiation between income and expense and other comprehensive income. The amendments are to be applied for the first time in the first reporting period of the fiscal year beginning on or after January 1, 2020.

Amendments to IAS 1 – Financial Statement Presentation and IAS 8 – Accounting Policies, Changes in Accounting Estimates and Errors

The amendments issued by the IASB on October 31, 2018 provide a uniform and more precise definition of the materiality of information provided in the financial statements, together with accompanying examples. In this connection, the definitions in the Conceptual Framework, IAS 1, IAS 8 and the IFRS Practice Statement 2 (Making Materiality Judgements) were harmonized. The amendments were endorsed by the E.U. on November 29, 2019 and are to be applied for the first time on or after January 1, 2020.

Amendments to IFRS 9, IAS 39 and IFRS 7 – Interest Rate Benchmark Reform

The IASB issued amendments to IFRS 9, IAS 39 and IFRS 7 on September 26, 2019. They are based on existing uncertainties with regard to the IBOR reform. According to current hedge accounting policies, pending adjustments to benchmark interest rates would, in many cases, result in an end to hedging relationships. It is now possible to continue accounting for existing hedge accounting relationships during the transition period. The amendments stipulate specific mandatory exceptions to the previous hedge accounting rules, for example, the assessment of highly probable criteria for expected cash flow hedging transactions. The amendments were endorsed by the E.U. on January 15, 2020 and are to be applied for the first time on or after January 1, 2020.

IFRSs and IFRICs not yet to be considered and not yet endorsed by the E.U.

The IASB issued further amendments to standards and interpretations which are still subject to E.U. endorsement and whose application is not yet mandatory. These amendments are unlikely to have a material impact on the reporting of BASF. BASF does not plan on early adoption of these amendments.

Amendments to IFRS 10 and IAS 28 – Sale or Contribution of Assets between an Investor and its Associate or Joint Venture

The IASB issued amendments to IFRS 10 and IAS 28 on September 11, 2014. The amendments address a known inconsistency between the requirements of IFRS 10 and IAS 28 (2011) in the case of the sale of an asset to an associated company or a joint venture or the contribution of an asset to an associated company or a joint venture. Pursuant to IFRS 10, a parent company must recognize the total amount of any gains or losses in profit or loss from the sale of a subsidiary when control ceases to exist. By contrast, IAS 28.28 requires that profits from a disposal from a transaction between an investor and an associated company or joint venture must only be recognized in the amount of the others' share in this company.

IASB has postponed the effective date of the changes indefinitely.

Amendments to IFRS 3 – Business Combinations

The amendments issued on October 22, 2018, clarify that a business is a set of activities and assets with at least one input and one substantive process that together significantly contribute to the ability to create outputs. Outputs are defined as the provision of goods and services to customers. The existing reference to cost reduction was removed. In addition, the new provisions also contain an optional concentration test designed to simplify identification of a business. Subject to adoption by EU legislation, the modified definition is to be applied to business combinations with an acquisition date on or after January 1, 2020.

1.3 Group accounting principles

Scope of consolidation: The scope of consolidation is based on the application of the standards IFRS 10 and 11.

According to IFRS 10, a group consists of a parent entity and the subsidiaries controlled by the parent. "Control" of an investee assumes the simultaneous fulfillment of the following three criteria:

- The parent company holds decision-making power over the relevant activities of the investee
- The parent company has rights to variable returns from the investee
- The parent company can use its decision-making power to affect the variable returns

Based on corporate governance and any additional agreements, companies are analyzed for their relevant activities and variable returns, and the link between the variable returns and the extent to which their relevant activities could be influenced.

According to IFRS 11, which regulates the accounting of joint arrangements, a distinction must be made between joint ventures and joint operations. In the case of a joint venture, the parties that have joint control of a legally independent company have rights to the net assets of that arrangement. In joint operations, the parties that have joint control have direct rights to the assets and obligations for the liabilities relating to the arrangement. This requirement is particularly fulfilled if the production output of the joint arrangement is almost entirely transferred to the partners, through which the partners guarantee the joint arrangements' ongoing financing.

Companies whose corporate governance structures classify them as joint arrangements are analyzed to determine if they meet the criteria for joint ventures or joint operations in accordance with IFRS 11. Should the arrangement be structured through a separate vehicle, its legal form, contractual arrangements and all other facts and circumstances are reviewed.

In addition to BASF SE, the Consolidated Financial Statements include all material subsidiaries on a fully consolidated and all material joint operations on a proportionally consolidated basis. Companies whose business is dormant or of low volume, and are of minor importance for the presentation of a true and fair view of the net assets, financial position and results of operations, are not consolidated, but rather are reported under other shareholdings. These companies are carried at amortized cost and are written down in the case of an impairment. The aggregate assets and equity of these companies amount to less than 1% of the corresponding value at Group level.

Joint ventures and associated companies are accounted for using the **equity method** in the Consolidated Financial Statements. Associated companies are entities that are not subsidiaries, joint ventures or joint operations, and over whose operating and financial policies significant influence can be exercised. In general, this applies to companies in which BASF has an investment of between 20% and 50%. Equity-accounted income is reported as part of income from operations (EBIT).

Consolidation methods: Assets and liabilities of consolidated companies are uniformly recognized and measured in accordance with the principles described herein. For companies accounted for using the equity method, material deviations in measurement resulting from the application of other accounting principles are adjusted for.

Transactions between consolidated companies as well as intercompany profits resulting from trade between consolidated companies are eliminated in full; for joint operations, they are proportionally eliminated. Material intercompany profits related to companies accounted for using the equity method are eliminated.

Capital consolidation is conducted at the acquisition date according to the purchase method. Initially, all assets, liabilities and additional intangible assets that are to be capitalized are measured at fair value. Finally, the cost is compared with the proportional share of the net assets acquired at fair value. The resulting positive differences are capitalized as goodwill. Negative differences are reviewed once more, then recognized directly in the income statement.

The incidental acquisition costs of a business combination are recognized in the income statement under other operating expenses.

Foreign currency translation: The cost of assets acquired in foreign currencies and revenue from sales in foreign currencies are determined by the exchange rate on the date the transaction is recognized. Foreign currency receivables and liabilities are valued at the exchange rates on the balance sheet date. Changes in assets and liabilities arising from foreign currency translation are recognized in the income statement, and reported under other operating expenses or income, other financial result, and in the case of financial assets measured at fair value through other comprehensive income, in other comprehensive income.

Translation of foreign currency financial statements: The translation of foreign currency financial statements depends on the functional currency of the consolidated companies. For companies whose functional currency is not the euro, translation into the reporting currency is based on the closing rate method: Balance sheet items are translated into euros using closing rates on the balance sheet date; expenses and income are translated into euros at monthly average rates and accumulated for the year. The difference between a company's translated equity at historical rates at the time of acquisition or retention and its equity at closing rates on the balance sheet date is reported separately in equity under other comprehensive income (translation adjustments) and is recognized in profit or loss only upon the company's disposal.

For certain companies outside the eurozone or U.S. dollar zone, the euro or U.S. dollar is the functional currency. In such cases, financial statements prepared in the local currency are translated into the functional currency using the temporal method: All nonmonetary assets and related depreciation and amortization as well as equity are translated at the exchange rate applying to the respective transactions. All other balance sheet items are translated using closing rates on the balance sheet date; other expenses and income are translated at monthly average rates. The resulting translation differences are recognized in the income statement under other operating income or expenses. If necessary, financial statements in the functional currency are translated into the presentation currency according to the closing rate method.

Selected exchange rates

EUR 1 equals

	Closing rates		Average rates	
	Dec. 31, 2019	Dec. 31, 2018	2019	2018
Brazil (BRL)	4.52	4.44	4.41	4.31
China (CNY)	7.82	7.88	7.74	7.81
United Kingdom (GBP)	0.85	0.89	0.88	0.88
Japan (JPY)	121.94	125.85	122.01	130.40
Malaysia (MYR)	4.60	4.73	4.64	4.76
Mexico (MXN)	21.22	22.49	21.56	22.71
Norway (NOK)	9.86	9.95	9.85	9.60
Russia (RUB)	69.96	79.72	72.46	74.04
Switzerland (CHF)	1.09	1.13	1.11	1.15
South Korea (KRW)	1,296.28	1,277.93	1,305.32	1,299.07
United States (USD)	1.12	1.15	1.12	1.18

1.4 Accounting policies

Business combinations: In business combinations, the acquired assets and liabilities are recognized at fair value on the date the acquirer effectively obtains control. The fair value of acquired assets and assumed liabilities at the date of acquisition, as well as the useful lives of the acquired assets, are determined on the basis of assumptions. Measurement is largely based on projected cash flows. Actual cash flows can deviate significantly from those. Independent external appraisals are typically used for the purchase price allocation of material business combinations. Valuations in the course of business combinations are based on existing information as of the acquisition date.

Groups of assets and liabilities held for sale (disposal groups):

These comprise those assets and directly associated liabilities shown separately on the balance sheet whose sale in the context of a single transaction is highly probable. A transaction is assumed to be highly probable if there are no significant risks of completion of the transaction, which usually requires the conclusion of binding contracts. The assets and liabilities of disposal groups are recognized at the lower of the sum of their carrying amounts or fair value less costs to sell; this does not apply to assets that do not fall under the valuation principles of IFRS 5. Depreciation of noncurrent assets and the use of the equity method are suspended.

Discontinued operations: These are classified as held for sale and are presented as discontinued operations in BASF's Consolidated Financial Statements in accordance with IFRS 5. Until closing, the income after taxes of discontinued operations is shown in income after taxes of the BASF Group as a separate item (income after taxes from discontinued operations). The BASF Group's sales and earnings are retroactively adjusted for the consolidated figures for discontinued operations as of the beginning of the fiscal year. The prior-year figures are restated. In addition, the assets and liabilities of the discontinued operations are reclassified to a disposal group (assets or liabilities of disposal groups). Depreciation of noncurrent

assets and the use of the equity method are suspended as of the date when the disposal group is initially presented. The statement of cash flows is not restated. The activities of discontinued operations are not allocated to any reportable segment in financial reporting.

For more information, see Note 2.5 from page 215 onward and Note 4 from page 219 onward

Exploration and development expenditures in the **oil and gas business**, now accounted for using the equity method, are accounted for using the successful efforts method. Under this method, costs of successful exploratory drilling as well as successful and dry development wells are capitalized.

Use of estimates and assumptions in preparing the Consolidated Financial Statements

The carrying amount of assets, liabilities and provisions, contingent liabilities and other financial obligations reported in the Consolidated Financial Statements depends on the use of estimates, assumptions and discretionary scope. Specific estimates or assumptions used in individual accounting or valuation methods are disclosed in their respective sections of the Notes to the Consolidated Financial Statements. They are based on the circumstances and estimates on the balance sheet date and thus affect the amounts of income and expenses shown for the reporting periods presented. These assumptions primarily relate to the determination of discounted cash flows in the context of impairment tests and purchase price allocations; the useful lives of property, plant and equipment and intangible assets; the carrying amount of shareholdings; and the measurement of provisions for items such as employee benefits, warranties, trade discounts, environmental protection and taxes. Although uncertainty is appropriately incorporated in the valuation factors, actual results can differ from these estimates.

Impairment tests on assets are carried out whenever certain triggering events indicate potential impairment. External triggering events include, for example, changes in customer industries, technologies used and economic downturns. Internal triggering events for an impairment test include lower product profitability, planned restructuring measures or physical damage to assets. Impairment tests are based on a comparison of the carrying amount and the recoverable amount. The recoverable amount is the higher of fair value less costs to sell and the value in use. As a rule, value in use is determined using the discounted cash flow method. The estimation of cash flows and the assumptions used consider all information available on the respective balance sheet date on the future development of the operating business. Actual future developments may vary. Impairment testing relies upon the cash-generating unit's long-term earnings forecasts, which are based on macroeconomic trends. The weighted average cost of capital (WACC) based on the capital asset pricing model plays an important role in impairment testing. It comprises a risk-free interest rate, the market risk premium and the industry-specific spread for the credit risk. Additional important assumptions are the forecasts for the detailed planning period and the terminal growth rates used. Fair value less costs to sell must be determined for the impairment test of the disposal groups; specific assumptions relating to the respective transaction must be made for this determination.

For more information, see Note 2.5 from page 215 onward and Note 14 from page 239 onward

An impairment is recognized if the recoverable amount of the asset is lower than the carrying amount. The impaired asset (excluding goodwill) is written down by the amount of the difference between these amounts.

The goodwill impairment test is based on cash-generating units. At BASF, these largely correspond to the business units, or in individual cases the divisions. If there is a need for impairment, the existing goodwill is, if necessary, completely written off as a first step. If there is further need for impairment, this is allocated to the remaining assets of the cash-generating unit. Goodwill impairments are reported under other operating expenses.

The assumptions regarding the long-term development of oil and gas prices were significant for impairment tests in the discontinued oil and gas business in 2018. Internal company projections were based on an empirical analysis of global oil and gas supply and demand. Short-term estimates up to three years also considered the current prices on active markets or forward transactions. In long-term estimates, assumptions were made regarding factors such as inflation, production quantities and costs as well as energy efficiency and the substitution of energy sources. Using external sources and reports, the oil and gas price estimates were regularly checked for plausibility.

A valuation model based on a field-related valuation approach was used for the impairment test for the Exploration & Production unit in the discontinued oil and gas business when the disposal group was set up in 2018. It took into account the expected cash flows as well as the tax payments in the individual countries. The period under consideration included the planned license terms and the production profiles of the included oil and gas fields. Furthermore, instead of using a single weighted average cost of capital rate, the country risk and the specific tax rate were considered in each case; this led to a more precise calculation of the recoverable amount. Allowing for these parameters, the cost of capital rate after taxes in 2018 varied from 6.56% to 10.63% and before taxes from 9.62% to 30.37%.

The determination of fair value for the initial recognition of Wintershall Dea GmbH, which is accounted for using the equity method, was based on assumptions, particularly for production profiles of oil and gas fields, oil and/or gas prices, and discount factors.

For planning purposes, BASF assumes an oil price of \$60/bbl (Brent) and for gas of approximately €18/MWh (roughly \$6/mmBtu) in 2020.

Further accounting policies are included in the respective notes to the balance sheet and to the statement of income.

2 Scope of consolidation

2.1 Changes in scope of consolidation

In 2019, a total of 302 companies were included, either proportionally or fully, in the scope of consolidation for the Consolidated Financial Statements (2018: 331). Of these, seven companies were first-time consolidations (2018: 42). Since the beginning of 2019, a total of 36 companies (2018: five) were deconsolidated due to divestiture, merger, liquidation or immateriality.

First-time consolidations in 2019 comprised:

- One acquired company with headquarters in Europe
- One newly established company with headquarters in Asia Pacific
- Five companies with headquarters in Europe (three, two of those are in Germany) and in Asia Pacific (two) that had not been consolidated at the time of initial inclusion in the Consolidated Financial Statements.

First-time consolidations in 2018 comprised:

- 22 acquired companies with headquarters in Europe (11; one of those is in Germany), North America (two), Asia Pacific (three) and South America, Africa, Middle East (six)
- Three newly established companies with headquarters in Europe (two; none of those is in Germany) and Asia Pacific (one)
- 17 companies that had not been consolidated at the time of initial inclusion in the Consolidated Financial Statements in Europe (five; two of those are in Germany), North America (eight), Asia Pacific (two), South America, Africa, Middle East (two).

Of the 42 companies that were consolidated in the Consolidated Financial Statements for the first time in 2018, 35 companies were included for the first time due to the acquisition of significant parts of Bayer's seed and non-selective herbicide business (13) and its vegetable seeds business (22) as acquired, new or previously non-consolidated entities. As a result of the integration of the seed and non-selective herbicide business in 2019, 11 new entities from 2018 were deconsolidated due to mergers with BASF companies or reduced materiality.

Scope of consolidation

	Europe	Of which Germany	North America	Asia Pacific	South America, Africa, Middle East	2019	2018
As of January 1	170	59	52	75	34	331	294
of which proportionally consolidated	6	–	–	2	–	8	8
First-time consolidations	4	2	–	3	–	7	42
of which proportionally consolidated	–	–	–	–	–	–	–
Deconsolidations	22	11	6	4	4	36	5
of which proportionally consolidated	1	–	–	–	–	1	–
As of December 31	152	50	46	74	30	302	331
of which proportionally consolidated	5	–	–	2	–	7	8

Although BASF does not hold the majority of shares in ZAO Gazprom YRGM Trading, BASF was entitled to the earnings of the company due to profit distribution arrangements. As a result, the company was fully consolidated in the Consolidated Financial Statements until April 30, 2019. 18 companies including ZAO Gazprom YRGM Trading were deconsolidated due to the merger of Wintershall and DEA for the Wintershall Dea joint venture.

A list of the companies included in the Consolidated Financial Statements and a list of all companies in which BASF SE has a shareholding as required by section 313(2) of the German Commercial Code (HGB) is provided in the list of shares held.

🔗 For more information, see Note 3 on page 219

🌐 For more information, see basf.com/en/corporategovernance

Overview of impact of changes to the scope of consolidation (excluding acquisitions and divestitures)

	2019		2018	
	Million €	%	Million €	%
Sales	11	0.0	2	0.0
Noncurrent assets	44	0.1	2	0.0
of which property, plant and equipment	13	0.1	79	0.4
Current assets	(1)	0.0	(8)	0.0
of which cash and cash equivalents	21	0.9	–	–
Assets	43	0.0	(6)	0.0
Equity	20	0.0	(1)	0.0
Noncurrent liabilities	(1)	0.0	1	0.0
of which financial indebtedness	–	–	–	–
Current liabilities	24	0.1	(6)	0.0
of which financial indebtedness	–	–	–	–
Total equity and liabilities	43	0.0	(6)	0.0
Other financial obligations	–	–	–	–

2.2 Joint operations

Proportionally consolidated joint operations include, in particular:

- Ellba C.V., Rotterdam, Netherlands, which is jointly operated with Shell for the production of propylene oxide and styrene monomer
- BASF DOW HPPO Production B.V.B.A., Antwerp, Belgium, which is jointly operated with Dow for the production of propylene oxide

BASF holds a 50% share in each of these companies and controls them jointly with the respective partner. The companies sell their products directly to the partners. The partners ensure ongoing financing of the companies by purchasing the production. The companies were therefore classified as joint operations in accordance with IFRS 11.

AO Achimgaz, Novy Urengoy, Russia, which was jointly operated with Gazprom for the production of natural gas and condensate, was derecognized in connection with the deconsolidation of the oil and gas business.

2.3 Joint ventures and associated companies

BASF has shareholdings in two material joint ventures.

Wintershall Dea GmbH, Kassel/Hamburg, Germany, is jointly operated by BASF and LetterOne. BASF holds a 72.7% share in the company's equity. The joint venture became effective on May 1, 2019 and is accounted for using the equity method. The company is considered a joint venture because BASF and LetterOne defined the decision-making processes in the governing bodies as such that neither party alone can control the relevant activities of Wintershall Dea.

The following table shows values for the Wintershall Dea group, Kassel/Hamburg, Germany, including adjustments for fair value made at initial recognition and the resulting effects on earnings.

Financial information on the Wintershall Dea group, Kassel/Hamburg, Germany (100%)

Million €	
Balance sheet	2019
Noncurrent assets	31,920
of which goodwill from fair value adjustments	2,688
Current assets	2,589
of which marketable securities, cash and cash equivalents	814
Assets	34,509
Equity	17,058
Noncurrent liabilities	15,273
of which financial indebtedness	6,028
Current liabilities	2,178
of which financial indebtedness	576
Total equity and liabilities	34,509
Statement of income from May 1, 2019 to December 31, 2019	
Sales revenue	3,272
Depreciation and amortization	(1,544)
Interest income	75
Interest expenses	(68)
Income taxes	(286)
Total comprehensive income	(187)
Carrying amount according to the equity method as of May 1, 2019 (initial recognition at fair value)	14,078
Proportional comprehensive income	(136)
of which proportional net income	(86)
Capital measures/dividends/changes in the scope of consolidation/other adjustments	(1,541)
of which dividends	–
Carrying amount according to the equity method as of December 31, 2019	12,401

BASF-YPC Company Ltd., Nanjing, China, in which BASF and Sinopec each has a 50% share, operates the Verbund site in Nanjing.

Financial information on BASF-YPC Company Ltd., Nanjing, China (100%)

Million €

	2019	2018
Balance sheet		
Noncurrent assets	1,032	1,110
Current assets	768	932
of which marketable securities, cash and cash equivalents	148	201
Assets	1,800	2,042
Equity	1,542	1,691
Noncurrent liabilities	3	29
of which financial indebtedness	0	28
Current liabilities	255	322
of which financial indebtedness	28	92
Total equity and liabilities	1,800	2,042
Statement of income		
Sales revenue	2,536	2,764
Depreciation and amortization	209	206
Interest income	3	5
Interest expenses	4	6
Income taxes	71	112
Income after taxes	212	343
Carrying amount according to the equity method as of the beginning of the year	847	879
Proportional income after taxes	106	171
Proportional change of other comprehensive income	–	(6)
Total comprehensive income	106	165
Capital measures / dividends / changes in the scope of consolidation / other adjustments	(181)	(197)
of which dividends	(200)	(197)
Other adjustments to income and expenses	–	–
Carrying amount according to the equity method as of the end of the year	772	847

Non-material joint ventures accounted for using the equity method include, in particular:

- Heesung Catalysts Corporation, Seoul, South Korea, which is jointly operated with the partner, Heesung (BASF interest: 50%)
- N.E. Chemcat Corporation, Tokyo, Japan, which is jointly operated with the partner, Sumitomo Metal Mining Co. Ltd. (BASF interest: 50%)

Non-material joint ventures accounted for using the equity method (BASF interest)

Million €	2019	2018
Carrying amount according to the equity method as of the beginning of the year	553	1,509
Proportional income after taxes ^a	98	106
Proportional change of other comprehensive income Equity	1	16
Total comprehensive income	99	122
Capital measures/dividends/changes in the scope of consolidation/other adjustments ^b	(94)	(1,054)
Other adjustments to income and expenses ^a	(21)	(24)
Carrying amount according to the equity method as of the end of the year	537	553

^a This item includes accumulated effects from the discontinued oil and gas business in the amount of €12 million in 2018.

^b In 2018, the amount of €939 million was transferred to the assets of the oil and gas disposal group.

Non-material associated companies accounted for using the equity method include, in particular:

- Solenis UK International Ltd., London, United Kingdom (BASF interest: 49%)
- Stahl Lux 2 S.A., Luxembourg (BASF interest: 16.32%) is classified as an associated company as BASF can exercise significant influence over the company due to the fact that its approval is required for certain relevant board resolutions
- Yara Freeport LLC, Wilmington, Delaware (BASF interest: 32%)
- BASF Huntsman Shanghai Isocyanate Investment B.V., Arnhem, Netherlands (BASF interest: 50%)

Non-material associated companies accounted for using the equity method (BASF interest)

Million €	2019	2018
Carrying amount according to the equity method as of the beginning of the year	803	2,327
Proportional income after taxes ^a	22	115
Proportional change of other comprehensive income Equity	(16)	11
Total comprehensive income	6	126
Capital measures/dividends/changes in the scope of consolidation/other adjustments ^b	492	(1,650)
Other adjustments to income and expenses	(3)	–
Carrying amount according to the equity method as of the beginning of the year	1,298	803

^a This item includes effects from the discontinued oil and gas business in the amount of €87 million in 2018.

^b In 2019, the shareholding in Solenis UK International Ltd. was recognized for the first time, in the amount of €590 million. The amount of €65 million was transferred to the assets of the disposal group for the pigments business. In 2018, the amount of €1,613 million was transferred to the assets of the disposal group for the oil and gas business.

As of August 31, 2019, 70% of the carrying amount of CIMO Compagnie industrielle de Monthey S.A., Monthey, Switzerland (BASF interest: 50%), was reclassified to assets of the disposal group for the pigments business. This represents the 35% interest of BASF Colors & Effects Switzerland AG in the company.

2.4 Acquisitions and divestitures

Acquisitions

In 2019, BASF acquired the following activity:

- BASF acquired 100% of shares in Isobionics B.V., Geleen, Netherlands, on September 26, 2019. The company develops and produces a wide range of natural flavors and fragrances with a focus on citrus oil components. The acquisition affects the Nutrition & Health division.

In 2018, BASF acquired the following activities:

- On March 7, 2018, BASF closed the agreement to form BASF TODA America LLC (BTA), Iselin, New Jersey, for battery materials. BTA is a cooperative venture between BASF and TODA. BASF holds the majority share in and control over BTA. With the Battle Creek site in Michigan and the site contributed by BASF in Elyria, Ohio, the new company took over production of high energy cathode active materials for e-mobility applications. The transaction strengthened the Catalysts division's battery materials business.
- On August 1, 2018, BASF closed the acquisition of a range of businesses and assets from Bayer to complement its own activities in crop protection, biotechnology and digital farming. At the same time, the transaction marked BASF's entry into the seeds, non-selective herbicides and nematocide seed treatments businesses. The assets acquired included Bayer's global glufosinate-ammonium business, commercialized under the Liberty®, Basta® and Finale® trademarks, as well as its seed businesses for key field crops in selected markets. The transaction also covered Bayer's trait research and breeding capabilities for these crops. BASF acquired the sites for glufosinate-ammonium production and formulation in Germany, the United States and Canada, seed breeding facilities in the Americas and Europe as well as trait research facilities in the United States and Europe. BASF also closed the acquisition of Bayer's global vegetable seeds business, which mainly operates under the trademark Nunhems®, on August 16, 2018. The acquired vegetable seeds business comprised 24 crops and about 2,600 varieties. It also included R&D breeding systems with more than 100 breeding programs in over 15 crops. This strengthened BASF's Agricultural Solutions division. The purchase price totaled €7.5 billion. The preliminary purchase price allocation for the acquisition of these Bayer businesses was reviewed at the conclusion of the 12-month valuation period in accordance with IFRS 3 and restated due to more detailed information and purchase price adjustments. This adjustment of the purchase price allocation gave rise to the effects presented in the following table.

- Wintershall Middle East GmbH acquired a 10% share in Abu Dhabi National Oil Company's (ADNOC) Ghasha concession in the United Arab Emirates (UAE) on November 25, 2018. The Hail, Ghasha, Dalma and other ultra-sour gas and condensate fields are located in the Al Dhafra region off the coast of the Gulf Emirate. The acquisition in the discontinued oil and gas business marked Wintershall's entry into natural gas and condensate production in Abu Dhabi.

Adjustment of the preliminary purchase price allocation for the acquisition of assets and liabilities from Bayer

Million €	Fair values as of date of acquisition	Adjustments	As of August 16, 2019
Goodwill	1,253	(65)	1,188
Other intangible assets	4,285	(24)	4,261
Property, plant and equipment	1,404	2	1,406
Investments accounted for using the equity method	–	–	–
Other financial assets	–	–	–
Deferred taxes	65	–	65
Other receivables and miscellaneous assets	2	–	2
Noncurrent assets	7,009	(87)	6,922
Inventories	887	61	948
Accounts receivable, trade	61	–	61
Other receivables and miscellaneous assets	169	26	195
Marketable securities	–	–	–
Cash and cash equivalents	69	1	70
Current assets	1,186	88	1,274
Total assets	8,195	1	8,196
Provisions for pensions and similar obligations	34	–	34
Other provisions	240	13	253
Deferred taxes	353	(45)	308
Financial indebtedness	–	–	–
Other liabilities	9	–	9
Noncurrent liabilities	636	(32)	604
Accounts payable, trade	18	–	18
Provisions	58	–	58
Tax liabilities	5	–	5
Financial indebtedness	–	–	–
Other liabilities	57	(21)	36
Current liabilities	138	(21)	117
Total liabilities	774	(53)	721
Total purchase price	7,421	54	7,475

The purchase prices for businesses acquired in 2019 and the purchase price adjustments for acquisitions from 2018 totaled €104 million. Related payments amounted to €239 million in 2019. Purchase price allocations were carried out in accordance with IFRS 3. This resulted in a total decrease in goodwill of €47 million.

The following overview shows the effects of acquisitions in 2019 and 2018 on the Consolidated Financial Statements. When acquisitions resulted in the transfer of assets or the assumption of additional liabilities, these are shown as a net impact.

Effects of acquisitions and changes in the preliminary purchase price allocations

	2019		2018	
	Million €	% ^a	Million €	% ^a
Goodwill	(47)	(0.6)	1,261	13.7
Other intangible assets	10	0.2	4,279	58.3
Property, plant and equipment	3	0.0	1,425	6.9
Financial assets	–	–	–	–
Other noncurrent assets	2	0.1	67	2.1
Noncurrent assets	(32)	(0.1)	7,032	16.2
Current assets	94	0.3	1,324	3.1
of which cash and cash equivalents	1	0.0	69	3.0
Assets	62	0.1	8,356	9.7
Equity	–	–	10	–
Noncurrent liabilities	(23)	(0.1)	634	2.3
of which financial indebtedness	–	–	–	–
Current liabilities	(154)	(0.9)	281	1.2
of which financial indebtedness	–	–	–	–
Total equity and liabilities	(177)	(0.2)	925	1.1
Payments made for acquisitions	239		7,431	

^a Proportional share in relation to the BASF Group

Divestitures

In 2019, BASF sold the following activities:

- On January 31, 2019, following the approval of all relevant authorities, BASF and Solenis concluded the transfer of BASF's paper and water chemicals business to Solenis. Since February 1, 2019, the combined company has operated under the name Solenis UK International Ltd., London, United Kingdom, and offers bundled sales, service and production capabilities across the globe. BASF holds a 49% share in the combined entity; 51% of the shares are held by funds managed by Clayton, Dubilier & Rice, and by Solenis management. The transaction included production sites and plants of BASF's paper and water chemicals business in Bradford and Grimsby, England; Suffolk, Virginia; Altamira, Mexico; Ankleshwar, India; and Kwinana, Australia. BASF reports its share of Solenis' income after taxes using the equity method in income from operations of the BASF Group. The divestiture affected the Performance Chemicals division and the equity-accounted interest assumed in the transaction is reported under Other.

🔗 The effects of the disposal are disclosed in the Notes under "Groups of assets and liabilities held for sale"

- BASF and LetterOne completed the merger of Wintershall and DEA on April 30, 2019. On September 27, 2018, BASF and LetterOne had signed a transaction agreement to merge their respective oil and gas businesses in a joint venture, creating a leading independent European exploration and production company with international operations in core regions. LetterOne contributed all shares in DEA Deutsche Erdöl AG to Wintershall Holding GmbH and received new shares in the latter. The company was renamed Wintershall Dea GmbH. Including preference shares, BASF has a shareholding of 72.7% in Wintershall Dea GmbH. No later than 36 months after closing but in all cases before an IPO, these preference shares will be converted into ordinary shares in Wintershall Dea GmbH. From the signing of the agreement in September 2018 until the closing of the merger, BASF's oil and gas business was reported as a discontinued operation. Since the merger, BASF's interest in Wintershall

Dea GmbH has been accounted for using the equity method. The gain from the transition from full consolidation to the equity method is reported in income after taxes from discontinued operations. Since May 1, 2019, BASF has reported its share of Wintershall Dea GmbH's net income in income from operations of Other.

🔗 The effects of the disposal are disclosed in the Notes under "Discontinued operations"

- On December 6, 2019, BASF India Limited sold its stilbene-based optical brightening agents (OBA) business for paper and powder detergent applications to Archroma India Private Limited, Mumbai, India. The transaction includes the stilbene-based OBA product portfolio and the production plant in Ankleshwar, India. The production plant was part of the Performance Chemicals division and the stilbene-based OBA product portfolio was allocated to the Performance Chemicals and Care Chemicals divisions.
- BASF sold its ultrafiltration membrane business to DuPont Safety & Construction (DuPont) on December 31, 2019. The divestiture includes the shares of inge GmbH, the business' headquarters and production site in Greifenberg, Germany, including all employees, its international sales force, and certain intellectual property rights which were previously owned by BASF SE. The ultrafiltration membrane business had been part of the Performance Chemicals division.

In 2018, BASF sold the following activities:

- Shares in the Aguada Pichana Este concession in Argentina were sold on January 23, 2018. The sale pertained to the discontinued oil and gas business.
- On January 31, 2018, BASF's production site for styrene butadiene-based paper dispersions in Pischelsdorf, Austria was sold to Synthomer Austria GmbH, a subsidiary of the British specialty chemicals manufacturer Synthomer plc. The styrene acrylic dispersions that were produced in Pischelsdorf were not included in the sale. They were bundled with the businesses in Ludwigshafen, Germany. The sale was made in connection with the concentration of paper dispersions production in Europe at

the sites in Ludwigshafen and Hamina, Finland, to strengthen the Dispersions & Pigments division.

The following overview shows the effects of the divestitures conducted in 2019 and 2018 on the Consolidated Financial Statements. The sales line item shows the year-on-year decline resulting from divestitures. Noncurrent assets primarily include the addition of investments accounted for using the equity method, while current assets and current liabilities have until now shown the assets and liabilities of the disposal groups. The impact on equity related mainly to gains and losses from divestitures.

Effects of divestitures

	2019		2018	
	Million €	% ^a	Million €	% ^a
Sales	(414)	(0.7)	(157)	(0.3)
Noncurrent assets	14,686	26.2	(21)	–
of which property, plant and equipment	(19)	(0.1)	(15)	(0.1)
Current assets	(13,877)	(44.8)	(39)	(0.1)
of which cash and cash equivalents ^b	(802)	(33.0)	–	–
Assets	809	0.9	(60)	(0.1)
Equity	6,562	15.5	48	0.1
Noncurrent liabilities	235	0.8	(1)	–
of which financial indebtedness	–	–	–	–
Current liabilities	(5,779)	(34.8)	–	–
of which financial indebtedness	–	–	–	–
Total equity and liabilities	1,018	1.2	47	0.1
Further effects in connection with divestitures ^c	2,391	–	–	–
Payments received from divestitures	2,600		107	

^a Proportional share in relation to the BASF Group

^b Includes €800 million from the discontinued oil and gas business

^c Payments received from capital repayments, settlement of receivables and derecognition of cash and cash equivalents

Agreed transactions

- On September 18, 2017, BASF had signed an agreement with the Solvay group on the acquisition of Solvay's global polyamide business, subject to the approval of the relevant antitrust authorities. The E.U. Commission granted conditional clearance for BASF to acquire the polyamide business on January 18, 2019. They required divesting parts of the original transaction scope to a third-party buyer. These include manufacturing assets of Solvay for engineering plastics in Europe. Domo Chemicals was approved by the E.U. Commission as the buyer of the European polyamide business. The transaction closed on January 31, 2020.

For more information, see Note 35 on page 289

- On August 29, 2019, BASF and the fine chemicals company DIC, Tokyo, Japan, reached an agreement to transfer the global pigments business. The purchase price on a cash and debt-free basis is €1.15 billion. The transaction is expected to close in the fourth quarter of 2020. The sale is subject to approval by the relevant antitrust authorities. The transaction affects the Dispersions & Pigments division and approximately 2,600 employees.
- On December 21, 2019, BASF and a subsidiary of Lone Star, Dallas, Texas, a global private equity firm, signed an agreement for the sale of BASF's construction chemicals business. The purchase price on a cash and debt-free basis is €3.17 billion. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant antitrust authorities. The planned sale affects more than 7,000 employees as well as production sites and sales offices in more than 60 countries in the former Construction Chemicals division.

2.5 Discontinued operations / disposal groups

Discontinued operations

- With the binding agreement on the sale of BASF's construction chemicals business to a subsidiary of Lone Star, this business is presented as a discontinued operation. Through the agreed sale of the business, BASF experts, recognized across the industry for their know-how and competence in construction chemicals, will be prepared for further growth with the industry-specific approach of Lone Star. Impairments were not recorded for the discontinued construction chemicals business on the date of reclassification to discontinued operations or at the end of the reporting period.

The amounts in the following tables illustrate the consolidated contribution of discontinued operations.

Earnings from the discontinued construction chemicals business are as follows:

Statement of income from the discontinued construction chemicals business

Million €	2019	2018
Sales revenue	2,553	2,455
Cost of sales	(1,412)	(1,405)
Gross profit on sales	1,141	1,050
Selling expenses	(866)	(873)
General administrative expenses	(66)	(70)
Research and development expenses	(36)	(34)
Other operating income and expenses	(121)	(14)
Income from companies accounted for using the equity method	0	0
EBIT	52	59
Financial result	(4)	(4)
Income before income taxes	48	55
Income taxes	(24)	(21)
Income after income taxes	24	34
of which attributable to noncontrolling interests	5	11
Income after noncontrolling interests	19	23
Earnings per share from discontinued operations €	0.02	0.03
Depreciation and amortization of property, plant and equipment and intangible assets	(162)	(137)
of which impairments and reversals of impairments	(1)	(1)

The carrying amounts of the balance sheet items of the discontinued operations are presented in the following table "Disposal groups as of December 31, 2019" on page 218.

The discontinued construction chemicals business accounted for the following amounts in BASF's statement of cash flows:

Cash flows from the discontinued construction chemicals business

Million €	2019	2018
Cash flows from operating activities	219	128
Cash flows from investing activities	(107)	(74)
Cash flows from financing activities	(18)	1
Total	94	55

- The oil and gas business has been presented as a discontinued operation since the signing of the binding agreement between BASF and LetterOne to merge their respective activities on September 27, 2018. The disposal group was derecognized on closing of the transaction on April 30, 2019.

Earnings from the discontinued oil and gas business until April 2019 were as follows:

Statement of income from the discontinued oil and gas business

Million €	January 1– April 30, 2019	2018
Sales revenue	1,318	4,094
Cost of sales	(433)	(2,024)
Gross profit on sales	885	2,070
Selling expenses	(60)	(94)
General administrative expenses	(33)	(68)
Research and development expenses	(8)	(26)
Other operating income and expenses	(273)	(248)
Gain on the disposal before income taxes	5,828	–
Income from companies accounted for using the equity method	–	99
EBIT	6,339	1,733
Financial result	(37)	(19)
Income before income taxes	6,302	1,714
Income taxes	(381)	(885)
Income after income taxes	5,921	829
of which attributable to noncontrolling interests	18	61
Income after noncontrolling interests	5,903	768
Earnings per share from discontinued operations	€ 6.43	0.83

The effects of the disposal of the discontinued oil and gas business are presented in the following table:

Calculation of disposal gain on the discontinued oil and gas business

Million €	April 30, 2019
Fair value 72.7% Wintershall Dea GmbH	14,078
Disposed net assets	(7,540)
Assets of the disposal group	(15,597)
Reinstated receivables	2,246
Liabilities of the disposal group	6,447
Reinstated liabilities	(636)
Recycling of income and expenses previously recognized directly in equity (recognized in income on disposal)	(870)
Noncontrolling interests	160
Income taxes	(144)
Disposal gain after taxes	5,684

The discontinued oil and gas business accounted for the following amounts in BASF's statement of cash flows:

Cash flows from the discontinued oil and gas business (excluding effects from the divestiture)

Million €	January 1– April 30, 2019	2018
Cash flows from operating activities	456	1,554
Cash flows from investing activities	(263)	(1,011)
Cash flows from financing activities	(50)	(346)
Total	143	197

The shares held in Wintershall Dea GmbH were initially measured at fair value as of the date of deconsolidation on April 30, 2019, using the discounted cash flow method on the basis of the income approach according to IFRS 13.62. Fair value is calculated as the present value of future cash inflows and outflows on the basis of unobservable inputs (Level 3). Significant inputs are assumptions on the long-term development of oil and gas prices, which were based, among other things, on market values and expert assessments. The valuation of Wintershall Dea GmbH as of April 30, 2019, assumes an oil price of \$66 per bbl (Brent) and a gas price of approximately €16 per MWh (roughly \$6 per mmBtu) for 2020 that increases moderately in the medium to long term.

The estimation of cash flows and the assumptions are based on relevant information on the future development of the operating business on the measurement date.

A model based on a field-related valuation approach was used for the exploration and production business. This took into account the expected cash flows as well as the tax payments in the individual countries. The period under consideration includes the planned license terms and the production profiles of the included oil and gas fields. A significant factor here is the cost of capital rate, which takes into consideration the country risk for the country concerned and the applicable tax rate. Other components are a risk-free interest rate, a market risk premium and a spread for credit risk based on the respective industry-specific peer group. Taking into account these parameters, a cost of capital rate after tax of between 6.17% and 11.49% was used.

For the transportation business, regulated gas transportation rates and specific average cost of capital rates were used where relevant. The cost of capital rate after tax was between 5.52% and 5.91%.

The valuation also took into account expected synergy effects from the merger due to lower ongoing operating costs or from the optimization of investment measures.

Initial recognition at fair value (€14.1 billion) uncovered hidden reserves and liabilities. In line with the purchase price allocation, the hidden reserves and liabilities were mainly attributable to exploration and production assets.

Of other comprehensive income after taxes attributable to BASF SE shareholders totaling €949 million (2018: minus €608 million), minus €8 million (2018: €10 million) related to the discontinued construction chemicals business, €1,034 million (2018: minus €102 million) to the discontinued oil and gas business, and minus €77 million (2018: minus €516 million) to continuing operations.

Groups of assets and liabilities held for sale (disposal groups)

– On January 31, 2019, following the approval of all relevant authorities, BASF and Solenis concluded the transfer of BASF's paper and water chemicals business to Solenis. The disposal group was derecognized on divestiture of the paper and water chemicals business, and a shareholding accounted for using the equity method in the amount of €590 million was added and accounted for in the sales price. The calculation of the disposal gain is presented in the following table:

Calculation of disposal gain on the paper and water chemicals business

Million €	January 31, 2019
Sales price	768
Disposed net assets	(611)
Assets of the disposal group	(504)
Reinstated assets	43
Liabilities of the disposal group	–
Reinstated liabilities	(150)
Disposal gain before taxes	157
Tax expense	(44)
Disposal gain after taxes	113

– With the agreement on the acquisition of the global pigments business by the fine chemical company DIC, the affected assets and liabilities were reclassified to a disposal group. The business is allocated to the Dispersions & Pigments division. An impairment test was conducted for the disposal group for the pigments business on December 31, 2019. In accordance with IFRS 5, the fair value less costs to sell must be used as the recoverable amount and compared with the carrying amount. The recoverable amount was determined as of December 31, 2019 by discounting expected cash flows until closing, including income from the sale, at a WACC of 7.98%. This resulted in an impairment in the amount of €73 million, which reduced the goodwill of the disposal group for the pigments business accordingly.

The values for the disposal groups are presented in the following table.

Other comprehensive income included minus €61 million for the construction chemicals business disposal group and minus €79 million for the pigments business as of December 31, 2019.

Disposal groups as of December 31, 2019

Million €

	Pigments business	Construction chemicals business	Total
Balance sheet			
Goodwill	(336)	(772)	(1,108)
Other intangible assets	(22)	(537)	(559)
Property, plant and equipment	(266)	(503)	(769)
Investments accounted for using the equity method	(65)	–	(65)
Other financial assets	(8)	(28)	(36)
Deferred tax assets	(58)	(22)	(80)
Other receivables and miscellaneous assets	(2)	(1)	(3)
Noncurrent assets	(757)	(1,863)	(2,620)
Inventories	(383)	(299)	(682)
Accounts receivable, trade	(109)	(522)	(631)
Other receivables and miscellaneous assets	(22)	(30)	(52)
Marketable securities	–	–	–
Cash and cash equivalents	(7)	(21)	(28)
Current assets	(521)	(872)	(1,393)
Assets of the disposal group	1,278	2,735	4,013
Provisions for pensions and similar obligations	(213)	(154)	(367)
Other provisions	(9)	(23)	(32)
Deferred tax liabilities	(17)	(118)	(135)
Financial indebtedness	–	(5)	(5)
Other liabilities	(15)	(32)	(47)
Noncurrent liabilities	(254)	(332)	(586)
Accounts payable, trade	(51)	(191)	(242)
Provisions	(20)	(82)	(102)
Tax liabilities	(6)	(13)	(19)
Financial indebtedness	–	(10)	(10)
Other liabilities	(27)	(48)	(75)
Current liabilities	(104)	(344)	(448)
Liabilities of the disposal group	358	676	1,034
Net assets	920	2,059	2,979

3 BASF Group list of shares held pursuant to section 313(2) of the German Commercial Code (HGB)

The list of consolidated companies and the complete list of all companies in which BASF SE holds shares as required by section 313(2) HGB and information on the exemption of subsidiaries from accounting and disclosure obligations are an integral component of the audited Consolidated Financial Statements submitted to the electronic Federal Gazette (Bundesanzeiger). The list of shares held is also published online.

For more information, see basf.com/en/corporategovernance

4 Reporting by segment and region

As of January 1, 2019, we have 11 divisions grouped into six segments as follows:

- **Chemicals:** Petrochemicals, Intermediates
- **Materials:** Performance Materials, Monomers
- **Industrial Solutions:** Dispersions & Pigments, Performance Chemicals
- **Surface Technologies:** Catalysts, Coatings
- **Nutrition & Care:** Care Chemicals, Nutrition & Health
- **Agricultural Solutions:** Agricultural Solutions

The Construction Chemicals division was part of the Surface Technologies segment until December 21, 2019. The division was reclassified to Other as a discontinued operation with the agreement on the sale of BASF's construction chemicals business to an affiliate of Lone Star. The prior-year figures have been restated accordingly.

The composition of a number of divisions also changed at the beginning of 2019. The propylene oxide and propylene glycol business was transferred from the Petrochemicals division to the Monomers division. The superabsorbents business was reallocated from the Care Chemicals division to the Petrochemicals division. The styrene, polystyrene and styrene-based foams business, which previously mainly fell under the Performance Materials division and a small part under Other, is bundled in the Petrochemicals division.

The divisions are allocated to the segments based on their business models and according to their focal points, customer groups, the focus of their innovations, their investment relevance and sustainability aspects.

The **Chemicals** segment comprises the Petrochemicals and Intermediates divisions and is the cornerstone of BASF's Verbund structure. It supplies the other segments with basic chemicals and intermediates, contributing to the organic growth of our key value chains. Alongside internal transfers, customers include the chemical and plastics industries. The segment's competitiveness is strengthened by technological leadership and operational excellence.

The **Materials** segment is composed of the Performance Materials division and the Monomers division. The segment offers advanced materials and their precursors for new applications and systems. Its product portfolio includes isocyanates and polyamides as well as inorganic basic products and specialties for plastics and plastics processing.

The **Industrial Solutions** segment consists of the Dispersions & Pigments and the Performance Chemicals divisions. The segment develops and markets ingredients and additives for industrial applications, such as polymer dispersions, pigments, resins, electronic materials, antioxidants and additives. Its customers come from key industries such as automotive, plastics and electronics.

The **Surface Technologies** segment bundles chemical solutions for surfaces with the Catalysts and Coatings divisions. Its product spectrum includes catalysts and battery materials for the automotive and chemical industries, surface treatments, colors and coatings.

The **Nutrition & Care** segment comprises the Care Chemicals division and the Nutrition & Health division. The segment produces ingredients and solutions for consumer applications in the areas of nutrition, home and personal care. Its customers include food and feed producers as well as the pharmaceutical, cosmetics, detergent and cleaner industries.

The **Agricultural Solutions** segment consists of the division of the same name. As an integrated provider, its portfolio comprises fungicides, herbicides, insecticides and biological crop protection products, as well as seeds and seed treatment products. Furthermore, Agricultural Solutions offers farmers innovative solutions, including those based on digital technologies, combined with practical advice.

Activities that are not allocated to any of the segments are recorded under **Other**. These include other businesses, which comprise commodity trading, engineering and other services, as well as rental income and leases. Discontinued operations and all remaining activities after divestitures not previously reported under Other have also been reported here since January 1, 2019. These remaining activities include, for example, equity-accounted participating interests assumed in the context of divestitures or supply obligations. The remaining activities for the leather and textile chemicals business, previously recorded in the Performance Products segment, and the remaining activities for the industrial coatings business, previously recorded in the Functional Materials & Solutions segment, were reclassified to Other. Discontinued operations include the business of the former Construction Chemicals division and the oil and gas business. Following the merger of the oil and gas businesses of Wintershall and DEA, the equity-accounted interest in Wintershall Dea GmbH, Kassel/Hamburg, Germany, and the resulting contribution to earnings have also been reported under other businesses since May 1, 2019. The assets and liabilities of the oil and gas business were already presented under Other following the signing of the binding agreement between BASF and LetterOne to merge their oil and gas activities in the third quarter of 2018 until closing of the transaction.

The following activities are also presented under Other:

- The steering of the BASF Group by corporate headquarters.
- Cross-divisional corporate research, which includes plant biotechnology research, works on long-term topics of strategic importance to the BASF Group. Furthermore, it focuses on the development of specific key technologies, which are of central importance for the divisions.
- Results from currency translation that are not allocated to the segments; earnings from the hedging of raw materials prices and foreign currency exchange risks; and gains and losses from the long-term incentive (LTI) program.
- Miscellaneous income and expenses include expenses and income in connection with contaminated sites, project costs that are not allocated to the segments and, since the beginning of 2019, remanent fixed costs resulting from organizational changes or restructuring, function and region-related restructuring costs not allocated to a division, and idle capacity costs from internal human resource platforms.

Income from operations (EBIT) of Other

Million €	2019	2018
Costs for cross-divisional corporate research	(397)	(414)
Costs of corporate headquarters	(231)	(249)
Other businesses	15	17
Foreign currency results, hedging and other measurement effects	(89)	324
Miscellaneous income and expenses	35	(184)
Income from operations of Other	(667)	(506)

Income from operations of Other declined by €161 million year on year, from minus €506 million to minus €667 million. **The costs for cross-divisional corporate research** decreased by €17 million to minus €397 million, and the **costs of corporate headquarters** were €18 million lower at minus €231 million. Income from **other businesses** declined by €2 million to €15 million. The line item **foreign currency results, hedging and other measurement effects** decreased by €413 million to minus €89 million. This was due to expenses resulting from the addition to provisions for the LTI program in 2019, compared with income from the release of provisions in the previous year, as well as negative currency effects. The line item **miscellaneous income and expenses** rose by €219 million to €35 million and includes the gain on the sale of our share of the Klybeck site in Basel, Switzerland.

Reconciliation of the assets of Other to the assets of the BASF Group

Million €

	December 31, 2019	December 31, 2018
Segment assets	59,365	59,700
Assets of businesses included in Other	15,904	2,528
Financial assets	636	570
Deferred tax assets	2,887	2,342
Cash and cash equivalents / marketable securities	2,871	2,644
Defined benefit assets	123	63
Other receivables / prepaid expenses	2,429	1,901
Operating assets of the oil and gas business disposal group	–	12,570
Other assets of the oil and gas business disposal group	–	1,518
Operating assets of the former Construction Chemicals division (2018) and of the construction chemicals business disposal group (2019) ^a	2,661	2,720
Other assets of the construction chemicals business disposal group (2019) ^a	74	–
Assets of Other	27,585	26,856
Assets of the BASF Group	86,950	86,556

^a For more information, see Note 2.5 from page 215 onward.**Reconciliation of segment income to income before income taxes**

Million €

	2019	2018
EBIT before special items of the segments	5,224	6,742
EBIT before special items of Other	(688)	(461)
EBIT before special items	4,536	6,281
Special items of the segments	(505)	(262)
Special items of Other	21	(45)
Special items	(484)	(307)
EBIT of the segments	4,719	6,480
EBIT of Other	(667)	(506)
EBIT	4,052	5,974
Financial result	(750)	(741)
Income before income taxes	3,302	5,233

The same accounting rules are used for segment reporting as those used for the Group, which are presented in these Notes. Transfers between the segments are generally executed at adjusted market-based prices, taking into account the higher cost efficiency and lower risk of intragroup transactions. Assets, as well as their depreciation and amortization, are allocated to the segments based on economic control. Assets used by more than one segment are allocated based on the percentage of usage. Assets not used by the segments are reported under Other.

Income from operations (EBIT) before special items is used for the internal steering of the segments and complements the key management indicator, ROCE. EBIT is calculated from gross profit on sales, selling expenses, general administrative expenses, research and development expenses, other operating income and expenses, and income from companies accounted for using the equity method. To calculate EBIT before special items, this figure is then adjusted for special items. Special items arise from the integration of acquired businesses, restructuring costs, certain impairments, gains or losses resulting from divestitures and sales of shareholdings accounted for using the equity method, and other expenses and income that arise outside of ordinary business activities. EBIT and EBIT before special items are alternative performance measures that are not defined under IFRS and are to be considered as being complementary to the indicators defined by IFRS.

Segments 2019

Million €

	Chemicals	Materials	Industrial Solutions	Surface Technologies	Nutrition & Care	Agricultural Solutions	Other ^a	BASF Group
Sales	9,532	11,466	8,389	13,142	6,075	7,814	2,898	59,316
Intersegment transfers	3,428	849	524	212	490	197	77	5,777
Sales including transfers	12,960	12,315	8,913	13,354	6,565	8,011	2,975	65,093
Income from companies accounted for using the equity method	99	22	–	26	5	–	(36)	116
Income from operations	622	973	889	663	644	928	(667)	4,052
Assets	8,978	8,782	6,903	11,773	6,399	16,530	27,585	86,950
of which goodwill	201	172	649	2,912	884	3,219	68	8,105
other intangible assets	65	102	256	1,158	558	4,224	57	6,420
property, plant and equipment	5,117	4,999	2,226	3,078	2,347	2,938	1,087	21,792
investments accounted for using the equity method	763	235	37	388	43	–	13,542	15,008
Liabilities	3,507	3,603	2,886	3,152	2,897	3,251	25,304	44,600
Research and development expenses	108	193	192	214	161	879	411	2,158
Additions to intangible assets and property, plant and equipment (including acquisitions)	1,108	784	426	565	595	320	299	4,097
Depreciation and amortization of intangible assets and property, plant and equipment	923	718	438	457	545	719	346	4,146
of which impairments and reversals of impairments	146	8	19	9	124	12	6	324

^a Other includes assets and liabilities as well as amortization of intangible assets and depreciation of property, plant and equipment of the discontinued construction chemicals business. For more information, see Note 2.5 from page 215 onward. Until reclassification to the disposal group, additions to intangible assets and property, plant and equipment (including acquisitions) of the discontinued construction chemicals business, also included in Other, amounted to €176 million. The assets of Other also include the equity-accounted interest in Wintershall Dea GmbH.

Segments 2018

Million €

	Chemicals	Materials	Industrial Solutions	Surface Technologies	Nutrition & Care	Agricultural Solutions	Other ^a	BASF Group
Sales	11,694	13,270	9,120	11,199	5,940	6,156	2,841	60,220
Intersegment transfers	3,611	962	525	192	470	58	15	5,833
Sales including transfers	15,305	14,232	9,645	11,391	6,410	6,214	2,856	66,053
Income from companies accounted for using the equity method	200	11	(3)	38	4	–	19	269
Income from operations	1,573	2,374	653	574	715	591	(506)	5,974
Assets	8,947	9,005	7,464	11,062	6,230	16,992	26,856	86,556
of which goodwill	197	170	1,060	2,881	846	3,236	821	9,211
other intangible assets	55	99	343	1,231	548	4,441	626	7,343
property, plant and equipment	4,700	4,789	2,345	2,723	2,133	2,660	1,430	20,780
investments accounted for using the equity method	854	235	57	384	48	–	625	2,203
Liabilities	2,953	2,952	2,712	2,232	2,431	3,080	34,087	50,447
Research and development expenses	114	194	224	217	152	679	414	1,994
Additions to intangible assets and property, plant and equipment (including acquisitions)	962	639	436	531	298	7,110	759	10,735
Depreciation and amortization of intangible assets and property, plant and equipment	661	619	423	379	392	394	882	3,750
of which impairments and reversals of impairments	26	4	5	4	5	7	2	53

^a Other includes assets and liabilities as well as amortization of intangible assets and depreciation of property, plant and equipment of the discontinued construction chemicals business. For more information, see Note 2.5 from page 215 onward. Additions to intangible assets and property, plant and equipment (including acquisitions) of the discontinued construction chemicals business, also included in Other, amounted to €87 million in 2018. Other also includes assets and liabilities as well as amortization of intangible assets and depreciation of property, plant and equipment of the discontinued oil and gas business until the assets were reclassified to the disposal group at the end of the third quarter of 2018. Until reclassification to the disposal group, additions to intangible assets and property, plant and equipment (including acquisitions) of the discontinued oil and gas business, also included in Other, amounted to €468 million.

Regions 2019

Million €

	Europe	Of which Germany	North America	Asia Pacific	South America, Africa, Middle East	BASF Group
Location of customer						
Sales	23,827	6,123	15,948	14,203	5,338	59,316
Share	40.2	10.3	26.9	23.9	9.0	100.0
Location of company						
Sales	25,706	14,049	16,420	13,384	3,806	59,316
Income from companies accounted for using the equity method	(45)	(18)	2	159	–	116
Income from operations	1,976	418	692	1,082	302	4,052
Assets	47,347	34,412	21,345	13,912	4,346	86,950
of which intangible assets	6,652	3,588	6,152	1,353	368	14,525
property, plant and equipment	9,857	6,928	6,467	4,644	824	21,792
investments accounted for using the equity method	13,516	12,761	125	1,367	–	15,008
Additions to intangible assets and property, plant and equipment (including acquisitions)	2,135	1,459	1,310	581	71	4,097
Amortization of intangible assets and depreciation of property, plant and equipment including impairments and reversals of impairments	1,896	1,235	1,501	599	150	4,146

In the United States, sales to third parties in 2019 amounted to €14,211 million (2018: €14,202 million) according to location of companies and €13,506 million (2018: €13,496 million) according to location of customers. In the United States, intangible assets, property, plant and equipment, and investments accounted for using the equity method amounted to €12,115 million on December 31, 2019, compared with €12,958 million in the previous year.

In China, sales to third parties in 2019 amounted to €7,216 million (2018: €7,501 million) according to location of companies and €6,734 million (2018: €6,644 million) according to location of customers. In China, intangible assets, property, plant and equipment, and investments accounted for using the equity method amounted to €4,299 million on December 31, 2019, compared with €4,162 million in the previous year.

Regions 2018

Million €

	Europe	Of which Germany	North America	Asia Pacific	South America, Africa, Middle East	BASF Group
Location of customer						
Sales	25,589	6,687	15,388	14,210	5,033	60,220
Share	42.4	11.1	25.6	23.6	8.4	100.0
Location of company						
Sales	27,526	17,767	15,900	13,454	3,340	60,220
Income from companies accounted for using the equity method	36	10	0	233	–	269
Income from operations	3,210	1,146	794	1,793	177	5,974
Assets	45,562	23,739	22,079	13,576	5,339	86,556
of which intangible assets	7,281	3,874	7,308	1,499	466	16,554
property, plant and equipment	9,231	6,357	6,286	4,416	847	20,780
investments accounted for using the equity method	637	289	122	1,444	–	2,203
Additions to intangible assets and property, plant and equipment (including acquisitions)	5,317	3,674	4,461	585	372	10,735
Amortization of intangible assets and depreciation of property, plant and equipment including impairments and reversals of impairments	2,031	1,180	990	479	250	3,750

Notes to the Statement of Income

5 Earnings per share

Earnings per share

		2019	2018
Income after taxes from continuing operations	million €	2,546	4,116
of which noncontrolling interests	million €	46	200
Net income from continuing operations	million €	2,500	3,916
Income after taxes from discontinued operations	million €	5,945	863
of which noncontrolling interests	million €	24	72
Net income from discontinued operations	million €	5,921	791
Income after taxes	million €	8,491	4,979
of which noncontrolling interests	million €	70	272
Net income	million €	8,421	4,707
Weighted average number of outstanding shares	1,000	918,479	918,479
Earnings per share			
From continuing operations	€	2.72	4.26
Diluted	€	2.70	4.25
From discontinued operations	€	6.45	0.86
Diluted	€	6.45	0.86
From continuing and discontinued operations	€	9.17	5.12
Diluted	€	9.15	5.11

In accordance with IAS 33, a potential dilutive effect must be considered in the **diluted earnings per share** for those BASF shares that will be granted in the future as part of BASF's "plus" share program. This applies regardless of the fact that the necessary shares are acquired on the market by third parties on behalf of

BASF and that there are no plans to issue new shares. The dilutive effect of the issue of "plus" shares amounted to €0.02 in 2019 (2018: €0.01).

6 Sales revenue

Sales revenue from contracts with customers is recognized in the amount of the consideration BASF expects to receive in exchange for the goods or services when control of the goods or services is transferred to the customer.

BASF primarily generates income from the sale of goods. It is recognized as sales revenue at the point in time when control of the product is transferred from BASF to the customer; this is generally the case on delivery. If products are delivered to a consignment warehouse, BASF normally retains control. Revenue is recognized when the customer consumes the goods. Long-term supply agreements usually contain variable prices dependent on the development of raw materials prices and variable volumes.

Sales revenue from the sale or licensing of technologies or technical expertise is recognized according to the contractually agreed-upon transfer of the rights and obligations associated with these technologies. Recognition of revenue from granting licenses for technology and intellectual property depends on whether they are based on usage rights or access rights. Revenue from usage-based rights is recognized at the point in time when the license is granted. Revenue from access-based rights is recognized over the term of the contract with the customer. Sales revenue from sales and usage-based licenses is recognized in accordance with the underlying settlement agreements.

Sales revenue from the sale of precious metals to industrial customers is recognized on delivery and the corresponding purchase prices are recorded as cost of sales. In the trading of precious metals and their derivatives with traders, where there is usually no physical delivery, revenues are netted against the associated costs.

Services rendered to customers are invoiced according to work completed and recognized as revenue accordingly.

🔗 For more information on the allocation of sales revenue, see the Management's Report from page 47 onward

If the consideration promised in a contract includes variable components, BASF estimates the amount of consideration to which it will be entitled in exchange for transferring the promised goods to the customer. Variable components are only recognized as revenue when it is highly unlikely that a reversal of sales revenue will occur.

Expected rebates and other trade discounts are accrued in accordance with the principle of individual measurement to cover probable risks related to the return of goods, future warranty obligations and other claims.

BASF grants customers rebates if the goods purchased by the customer exceed a contractually defined threshold within the period specified. Rebates are usually deducted from the amounts payable by the customer. Depending on the terms of the underlying contract, BASF uses either the expected value or the most likely amount to estimate the variable consideration for expected future rebates. The method that is the best predictor of variable consideration is primarily determined by the number of volume thresholds contained in the contract. All available historical, current and forecast information is taken into account when calculating rebates. Customers generally have a right of return if the supplied goods do not meet the agreed specifications. Furthermore, certain contracts grant the customer the right to return the goods within a defined period of time. BASF uses the expected value method to estimate the goods that will be returned, as this method is the best predictor of the amount of variable consideration to which BASF will be entitled.

BASF applies the practical expedient in IFRS 15, which means that it does not adjust the promised amount of consideration for the effects of a significant financing component if, at contract inception, it is expected that the period between the transfer of the promised goods or services to a customer and payment for these goods or services by the customer will be one year or less.

Pursuant to IFRS 15, no information on remaining performance obligations as of December 31, 2019 that have an expected original term of one year or less was reported.

Sales by division and by indication and sector

Million €

	2019	2018
Petrochemicals	6,670	8,561
Intermediates	2,862	3,133
Chemicals	9,532	11,694
Performance Materials	6,064	6,517
Monomers	5,402	6,753
Materials	11,466	13,270
Dispersions & Pigments	5,178	5,292
Performance Chemicals	3,211	3,828
Industrial Solutions	8,389	9,120
Catalysts	9,396	7,469
Coatings	3,746	3,730
Surface Technologies	13,142	11,199
Care Chemicals	4,118	4,244
Nutrition & Health	1,957	1,696
Nutrition & Care	6,075	5,940
Fungicides	2,305	2,287
Herbicides	2,616	2,436
Insecticides	800	670
Seed Treatment	639	463
Seeds & Traits	1,454	300
Agricultural Solutions	7,814	6,156
Other	2,898	2,841
BASF Group	59,316	60,220

Sales revenue of €44 million, that was included in contract liabilities as of January 1, 2019, was recognized in 2019.

Sales revenue for the 2019 fiscal year includes €279 million from performance obligations fulfilled in prior periods in connection with sales and usage-based licenses.

7 Functional costs

Under the cost of sales method, functional costs incurred by the operating functions are determined on the basis of cost center accounting. The functional costs particularly contain the personnel costs, depreciation and amortization accumulated on the underlying final cost centers as well as allocated costs within the cost accounting cycle. Operating expenses that cannot be allocated to the functional costs are reported as other operating expenses.

For more information on other operating expenses, see Note 8 from page 229 onward

Cost of sales

Cost of sales includes all production and purchase costs of the company's own products as well as merchandise that has been sold in the period, particularly plant, energy and personnel costs.

Selling expenses

Selling expenses primarily include marketing and advertising costs, freight costs, packaging costs, distribution management costs, commissions and licensing costs.

General administrative expenses

General and administrative expenses primarily include the costs of the central units, the costs of managing business units and divisions, and costs of general management, the Board of Executive Directors and the Supervisory Board.

Research and development expenses

Research and development expenses include the costs resulting from research projects as well as the necessary license fees for research activities.

For more information on research and development expenses by segment, see Note 4 from page 219 onward

8 Other operating income / other operating expenses

Other operating income

Million €	2019	2018
Income from the adjustment and release of provisions recognized in other operating expenses	111	81
Revenue from miscellaneous activities	189	158
Income from foreign currency and hedging transactions as well as from the measurement of LTI options	55	411
Income from the translation of financial statements in foreign currencies	11	7
Gains on divestitures and the disposal of noncurrent assets	822	118
Reversals of impairment losses on noncurrent assets	6	3
Income from the reversal of valuation allowances for business-related receivables	19	40
Other	882	994
Other operating income	2,095	1,812

Income from the adjustment and release of provisions recognized in other operating expenses was largely related to risks from lawsuits and damage claims, closures and restructuring measures, employee obligations, and various other individual items as part of the normal course of business. Provisions were reversed or adjusted if, based on the circumstances on the balance sheet date, utilization was no longer expected, or expected to a lesser extent.

Revenue from miscellaneous activities primarily included income from rentals, catering operations, cultural events and logistics services.

Income from foreign currency and hedging transactions as well as from the measurement of LTI options pertained to the foreign currency translation of receivables and payables as well as of currency derivatives and other hedging transactions. Of material significance to the decline was income arising from the release of provisions for the long-term incentive (LTI) program in the amount of

€262 million in the previous year, while only a low amount was released in 2019.

Income from the translation of financial statements in foreign currencies included gains from the translation of companies' financial statements whose local currency is different from the functional currency.

Gains on divestitures and the disposal of noncurrent assets amounting to €390 million in 2019 related mainly to earnings from the transfer of BASF's paper and water chemicals business to the Solenis group and the sale of businesses in the Agricultural Solutions segment in accordance with the conditions imposed by antitrust authorities in connection with the acquisition of the Bayer businesses. In 2018, this line item included earnings in the amount of €21 million for the sale of the Austrian production site for styrene butadiene-based paper dispersions in Pischelsdorf. Furthermore, income of €421 million resulted from real estate divestitures in several countries in 2019 (2018: €14 million). Of material significance

here was the sale of a building complex in Switzerland in the amount of €400 million.

Income from the reversal of valuation allowances for business-related receivables resulted both from the reversal of impairments for settled customer receivables for which impairments had been recorded previously as well as from adjusted expectations regarding default on individual customer receivables.

Other income included government grants and government assistance from several countries amounting to €27 million in 2019 and €43 million in 2018. These were primarily due to grants for research projects, regional business development subsidies in China and electricity price compensation in the 2019 fiscal year.

Further income resulted from refunds and compensation payments in the amount of €232 million in 2019 and €569 million in 2018. In 2019, these included insurance refunds in the amount of €44 million for damage at the citral plant in Ludwigshafen, Germany, in 2017, for which insurance refunds were also made in 2018, and earnings from a contractually agreed compensation payment in the amount of €46 million. Insurance refunds in the previous year also related to income for fire damages at the North Harbor in Ludwigshafen, Germany. Additional income resulted in 2019 from plan adjustments for pension benefits and similar obligations in the amount of €137 million. Moreover, income in both years was related to gains from precious metal trading, refunds of consumption taxes and a number of additional items.

Other operating expenses

Million €

	2019	2018
Restructuring and integration measures	697	404
Environmental protection and safety measures, costs of demolition and removal, and project costs not subject to mandatory capitalization	320	342
Depreciation, amortization and impairments of noncurrent assets	426	72
Costs from miscellaneous revenue-generating activities	173	151
Expenses from foreign currency and hedging transactions as well as from the measurement of LTI options	249	160
Losses from the translation of financial statements in foreign currencies	18	39
Losses from divestitures and the disposal of noncurrent assets	16	75
Expenses from the addition of valuation allowances on business-related receivables	67	62
Expenses for derecognition of obsolete inventory	286	242
Other	782	801
Other operating expenses	3,034	2,348

In 2019, expenses from **restructuring and integration measures** in the amount of €481 million were mainly attributable to the implementation of the new BASF strategy and, to a lesser extent, to site closures in North America and Asia. In 2018, expenses resulting from site closures in North America amounted to €13 million and from outsourcing computer centers in the amount of €11 million as well as from restructuring measures in the Care Chemicals division in the amount of €20 million. In 2018, expenses also arose from global restructuring measures in the Coatings division in the amount of €17 million and in the Catalysts division in the amount of €16 million due primarily to the restructuring of the global emissions catalysts business and the restructuring of the licensed battery materials business.

Expenses from integration measures amounted to €43 million in 2019 and related to the integration of significant parts of Bayer's seed and non-selective herbicide business as well as its vegetable seeds business, which were acquired in 2018. These expenses totaled €99 million in the previous year. In both years, expenses also

arose in connection with the preparation of the acquisition of Solvay's global polyamide business.

Environmental protection and safety measures, costs of demolition and removal, and project costs were expensed if they were not subject to mandatory capitalization pursuant to IFRS. Expenses for demolition, removal and project planning totaled €243 million in 2019 and €245 million in 2018. In both years, these mainly related to the Ludwigshafen site in Germany. Further expenses of €77 million in 2019 and €97 million in 2018 arose from the addition to environmental provisions. In both years, these concerned several discontinued sites in North America.

Depreciation, amortization and impairments of noncurrent assets amounting to €426 million in 2019 related primarily to the impairment of project costs for a planned methane-based propylene production plant on the U.S. Gulf Coast, as well as to the optimization of production sites within the Nutrition & Health division in Europe. In 2018, amortization, depreciation and impairments of noncurrent assets amounted to €72 million. The impairments resulted primarily from discontinued investment projects.

Costs from miscellaneous revenue-generating activities relate to the items presented in other operating income.

Expenses from foreign currency and hedging transactions as well as from the measurement of LTI options related to foreign currency translation of receivables and payables as well as changes in the fair value of currency derivatives and other hedging transactions. Expenses resulting from the measurement of LTI options amounted to €39 million in 2019. Higher currency hedging costs also arose in 2019 due to a changed position with respect to the U.S. dollar after the acquisition of Bayer's seed and non-selective herbicide business.

Losses from divestitures and the disposal of noncurrent assets resulted in 2019 in connection with the planned divestiture of the global pigments business. Expenses totaling €26 million in 2018 were related to the merger of the paper and water chemicals business with Solenis.

In both years, **other** expenses included expenses for litigation, for REACH, for the provision of services, for activities related to the BASF 4.0 project and for planning the new Verbund site in Guangdong, China.

9 Income from companies accounted for using the equity method

Income from companies accounted for using the equity method

Million €	2019	2018
Proportional income after taxes	433	279
of which joint ventures	412	250
associated companies	21	29
Other adjustments to income and expenses	(317)	(10)
of which joint ventures	(314)	(9)
associated companies	(3)	(1)
Income from companies accounted for using the equity method	116	269

Income from companies accounted for using the equity method decreased by a total of €153 million in 2019 primarily due to lower earnings at BASF-YPC Company Ltd., Nanjing, China. Wintershall Dea GmbH, Kassel/Hamburg, Germany, which was recognized as a joint venture for the first time, accounted for a loss in earnings due in part to additional impairments from the purchase price allocation. Moreover, adjustments were made for Wintershall Dea GmbH's earnings contributions, which had already been recognized at BASF Group level as part of initial measurement of the shareholding at fair value.

10 Financial result

Financial result

Million €

	2019	2018
Dividends and similar income	15	21
Income from the disposal of shareholdings	17	13
Income from profit transfer agreements	2	1
Income from tax allocation to shareholdings	(1)	–
Income from other shareholdings	33	35
Expenses from loss transfer agreements	(55)	(54)
Write-downs on / losses from the sale of shareholdings	(23)	(24)
Expenses from other shareholdings	(78)	(78)
Net income from shareholdings	(45)	(43)
Interest income from cash and cash equivalents	168	160
Interest and dividend income from securities and loans	15	14
Interest income	183	174
Interest expenses	(648)	(537)
Interest result	(465)	(363)
Net interest income from overfunded pension plans and similar obligations	–	2
Income from the capitalization of borrowing costs	35	31
Miscellaneous financial income	–	–
Other financial income	35	33
Write-downs on / losses from securities and loans	(8)	(22)
Net interest expense from underfunded pension plans and similar obligations	(155)	(131)
Net interest expense from other long-term personnel obligations	(5)	–
Unwinding the discount on other noncurrent liabilities	(11)	(5)
Miscellaneous financial expenses	(96)	(210)
Other financial expenses	(275)	(368)
Other financial result	(240)	(335)
Financial result	(750)	(741)

Net income from shareholdings was at prior-year level at minus €45 million.

The **interest result** declined by €102 million year on year, from minus €363 million to minus €465 million, as a result of higher interest expenses. The increase in interest expenses was mainly due to the higher financial debt, particularly commercial paper and interest on lease liabilities.

Write-downs on / losses from securities and loans decreased due to lower impairments on loans and to lower losses from fair value measurement of securities.

The **net interest expense from underfunded pension plans and similar obligations** increased in comparison with the previous year as a result of the increase in net defined benefit liability as of December 31, 2018. Net interest expense of the respective fiscal year is based on the discount rate and the defined benefit obligation at the beginning of the year.

The decline in **other financial expenses** was primarily due to lower expenses for hedging bonds and U.S. dollar commercial paper against interest and currency risk.

11 Income taxes

Accounting policies

In Germany, a uniform corporate income tax rate of 15.0% as well as a solidarity surcharge of 5.5% thereon are levied on all distributed and retained earnings. In addition to corporate income tax, income generated in Germany is subject to a trade tax that varies depending on the municipality in which the company is represented. Due to a higher rate of assessment for Ludwigshafen, Germany, in 2019, the weighted average trade tax rate was 14.5% (2018: 14.1%). The 30% rate used to calculate deferred taxes for German Group companies remained unchanged in 2019. The income of foreign Group companies is assessed using the tax rates applicable in their respective countries. These are also generally used to calculate deferred taxes to the extent that tax rate adjustments for the future have not yet been enacted.

Deferred taxes are recorded for temporary differences between the carrying amount of assets and liabilities in the financial statements according to IFRS and the carrying amounts for tax purposes as well as for tax loss carryforwards and unused tax credits. These also comprise temporary differences arising from business combinations, with the exception of goodwill. Deferred tax assets and liabilities are calculated using the respective country-specific tax rates applicable for the period in which the asset or liability is realized or settled. Tax rate changes enacted or substantively enacted on or before the balance sheet date are taken into consideration.

Deferred tax assets are offset against deferred tax liabilities provided they are related to the same taxation authority and have the same maturities. Surpluses of deferred tax assets are only recognized provided that the tax benefits are likely to be realized. The valuation of deferred tax assets is based on the probability of a reversal of the differences and the assessment of the ability to utilize tax loss carryforwards and unused tax credits. This depends on whether future taxable profits will exist during the period in which temporary differences are reversed and in which tax loss carryforwards and unused tax credits can be claimed. The valuation of deferred tax assets is based on internal projections of the future earnings of the particular Group company.

Changes in deferred taxes in the balance sheet are recorded as deferred tax expense or income if the underlying transaction is not to be recognized directly in equity or in income and expenses recognized in equity. For those effects which have been recognized in equity, changes to deferred tax assets and tax liabilities are also recognized directly in equity.

Deferred tax liabilities are recognized for differences between the proportional IFRS equity and the tax base of the investment in a consolidated subsidiary if a reversal of these differences is expected in the foreseeable future. Deferred tax liabilities are recognized for dividend distributions planned for the following year if these distributions lead to a reversal of temporary differences.

Provisions for German trade income tax, corporate income tax and similar income taxes are calculated and recognized based on the expected taxable income of the consolidated companies less any prepayments that have been made. Provisions are set up for interest accrued. Other taxes to be assessed are considered accordingly.

Tax expense and tax rate

The current tax expense for corporate income tax, solidarity surcharge and trade taxes (Germany) declined due to lower income from tax group companies in Germany.

As in the previous year, changes in valuation allowances on deferred tax assets for tax loss carryforwards resulted in an expense of €1 million in 2019. Other taxes included real estate taxes and other comparable taxes totaling €101 million in 2019 and €103 million in 2018.

The BASF Group tax rate amounted to 22.9% in 2019, after 21.3% in 2018. The increase was mainly attributable to taxes for prior years, especially in Germany and the United States. In Germany, income from the release of tax provisions in 2018 contrasted with expenses for additions to tax provisions in 2019. In the United States, tax-exempt income for prior years was lower than in 2018. The main offsetting effect was lower trade tax expenses as a result of the lower taxable income of the German companies.

Tax expense

Million €

	2019	2018
Current tax expense	1,053	1,229
Corporate income tax, solidarity surcharge and trade taxes (Germany)	114	394
Foreign income tax	929	1,094
Taxes for prior years	10	(259)
Deferred tax expense (+) / income (-)	(297)	(112)
From changes in temporary differences	(298)	(67)
From changes in tax loss carryforwards/unused tax credits	23	(35)
From changes in the tax rate	(26)	(18)
From valuation allowances on deferred tax assets	4	8
Income taxes	756	1,117
Other taxes as well as sales and consumption taxes	224	229
Tax expense	980	1,346

Reconciliation of income taxes and the effective tax rate

	2019		2018	
	Million €	%	Million €	%
Income before income taxes	3,302		5,233	
Expected tax based on German corporate income tax rate (15%)	495	15.0	783	15.0
Solidarity surcharge	2	0.1	12	0.2
German trade tax	12	0.4	154	2.9
Foreign tax rate differential	257	7.8	432	8.2
Tax-exempt income	(41)	(1.2)	(24)	(0.5)
Nondeductible expenses	61	1.8	62	1.2
Income of companies accounted for using the equity method (Income after taxes)	(17)	(0.5)	(40)	(0.8)
Taxes for prior years	10	0.3	(259)	(4.9)
Deferred tax liabilities for the future reversal of temporary differences associated with shares in participating interests	(6)	(0.2)	(5)	(0.1)
Changes in the tax rate	(26)	(0.8)	(18)	(0.3)
Other	9	0.2	20	0.4
Income taxes/effective tax rate	756	22.9	1,117	21.3

Deferred taxes result from temporary differences between tax balances and the measurement of assets and liabilities according to IFRS as well as from tax loss carryforwards and unused tax credits. The remeasurement of all the assets and liabilities associated with acquisitions according to IFRS 3 has resulted in significant deviations

between fair values and the values in the tax accounts. This primarily leads to deferred tax liabilities.

Deferred taxes

Deferred tax assets and liabilities 2019

Million €

	January 1, 2019, net	Effects recognized in income	Effects recognized in equity (OCI)	Business combinations	Other	Recognized in equity	December 31, 2019, net	Deferred tax assets	Deferred tax liabilities
Intangible assets	(1,265)	149	(4)	59	125	–	(934)	148	(1.082)
Property, plant and equipment	(976)	(113)	(16)	(2)	26	–	(1.081)	122	(1.203)
Financial assets	12	35	(1)	–	(182)	–	(136)	54	(190)
Inventories and accounts receivable	(203)	48	(47)	(14)	17	–	(199)	261	(460)
Provisions for pensions and similar obligations	2,149	(48)	354	–	(31)	–	2.424	3.153	(729)
Other provisions and liabilities	633	222	(23)	–	9	–	841	942	(101)
Tax loss carryforwards	205	13	1	5	(31)	–	193	193	–
Other	0	(9)	(5)	(4)	33	–	15	83	(68)
Deferred tax assets (liabilities) before netting	555	297	259	44	(34)	–	1.123	4.956	(3.833)
Netting	–	–	–	–	–	–	–	(2.069)	2.069
Deferred tax assets (liabilities) after netting	555	297	259	44	(34)	–	1.123	2.887	(1.764)

Deferred tax assets and liabilities 2018

Million €

	January 1, 2018, net	Effects recognized in income	Effects recognized in equity (OCI)	Business combinations	Other	Recognized in equity	December 31, 2018, net	Deferred tax assets	Deferred tax liabilities
Intangible assets	(1,184)	34	(5)	(272)	162	–	(1,265)	94	(1,359)
Property, plant and equipment	(2,464)	(127)	(1)	6	1,610	–	(976)	115	(1,091)
Financial assets	(39)	52	0	–	(1)	–	12	60	(48)
Inventories and accounts receivable	(69)	(62)	38	(40)	(70)	–	(203)	272	(475)
Provisions for pensions and similar obligations	1,986	2	122	13	26	–	2,149	2,657	(508)
Other provisions and liabilities	975	148	(1)	6	(495)	–	633	738	(105)
Tax loss carryforwards	222	(11)	0	0	(6)	–	205	205	–
Other	(40)	76	0	0	(36)	–	0	83	(83)
Deferred tax assets (liabilities) before netting	(613)	112	153	(287)	1,190	–	555	4,224	(3,669)
Netting	–	–	–	–	–	–	–	(1,882)	1,882
Deferred tax assets (liabilities) after netting	(613)	112	153	(287)	1,190	–	555	2,342	(1,787)

Undistributed earnings of subsidiaries resulted in temporary differences of €13,335 million in 2019 (2018: €14,088 million) for which deferred tax liabilities were not recognized, as they are either not subject to taxation on payout or they are expected to be reinvested for an indefinite period of time.

Changes in valuation allowances on deferred tax assets amounted to €98 million in 2019, compared with €87 million in 2018. Of this figure, €65 million pertained to tax loss carryforwards in 2019 (2018: €23 million).

Tax loss carryforwards

The regional distribution of tax loss carryforwards is as follows:

Tax loss carryforwards

Million €

	Tax loss carryforwards		Deferred tax assets	
	2019	2018	2019	2018
Germany	0	0	–	–
Foreign	950	1,143	195	205
Total	950	1,143	195	205

Tax loss carryforwards exist in all regions. Tax losses in Germany may be carried forward indefinitely. In some foreign countries, tax loss carryforwards are only possible for a limited period of time. Overall, just under half of the tax loss carryforwards will expire. The

bulk of the expirable tax loss carryforwards will expire in Asia by 2023 and in Europe and North America after 2024. No deferred tax assets were recognized for tax loss carryforwards of €205 million in 2019 (2018: €370 million).

Tax liabilities

Tax liabilities primarily include assessed income taxes and other taxes as well as estimated income taxes not yet assessed for the current year. BASF began reporting tax provisions, previously included in other provisions, with effective and deferred tax liabilities in 2019. The prior-year figures have been restated accordingly. Tax liabilities amounted to €3,036 million as of December 31, 2019 (December 31, 2018: €3,041 million).

12 Noncontrolling interests

Noncontrolling interests

Million €	2019	2018
Noncontrolling interests in profits	98	292
Noncontrolling interests in losses	(28)	(20)
Total	70	272

Noncontrolling interests in profits declined year on year in 2019, especially at Shanghai BASF Polyurethane Company Ltd., Shanghai, China, primarily due to lower TDI and MDI sales prices and margins, and at BASF TOTAL Petrochemicals LLC, Port Arthur, Texas, mainly due to the scheduled turnaround of the steam cracker and lower propylene sales prices.

Noncontrolling interests in profits were only recognized for Wintershall companies until April 30, 2019.

For more information on noncontrolling interests in consolidated companies, see Note 21 on page 253

13 Personnel expenses and employees

Personnel expenses

The BASF Group's expenses for wages and salaries, social security contributions and pensions and assistance in 2019 totaled €10,924 million (2018: €10,659 million). In 2019, this amount included personnel expenses from the disposal group for the construction chemicals business and proportionally for the oil and gas business in the amount of €557 million. By contrast, the amount in 2018 included personnel expenses from the disposal group for the oil and gas business in the amount of €276 million. The increase in personnel expenses was due primarily to higher expenses for the long-term incentive program, a higher level of wages and salaries and the higher average number of employees resulting from the acquisition of significant businesses from Bayer. Offsetting factors were the merger of the oil and gas businesses of Wintershall and DEA in the joint venture Wintershall Dea, as well as the decrease in expenses for pension benefits due to plan curtailments.

Personnel expenses

Million €	2019	2018
Wages and salaries	8,825	8,470
Social security contributions and assistance expenses	1,545	1,459
Pension expenses	554	730
Personnel expenses	10,924	10,659

Number of employees

As of December 31, 2019, the number of employees decreased to 117,628 employees compared with 122,404 employees as of December 31, 2018. This number includes 6,964 employees in the disposal group for the construction chemicals business as of December 31, 2019 (December 31, 2018: 2,017 employees in the disposal group for the oil and gas business).

Of material significance to the decrease in the number of employees were the merger of the oil and gas businesses of Wintershall and DEA in the joint venture Wintershall Dea, as well as the sale of the paper and water chemicals business. As a result, the number of employees decreased by more than 3,000 employees.

The number of employees in the BASF Group was distributed over the regions as follows:

Number of employees as of December 31

	2019	2018
Europe	72,153	75,188
of which Germany	54,028	55,839
North America	19,355	20,069
Asia Pacific	18,634	19,303
South America, Africa, Middle East	7,486	7,844
BASF Group	117,628	122,404
of which apprentices and trainees	3,161	3,174
temporary staff	2,606	3,226

Employees from joint operations are included in the number of employees as of the year-end relative to BASF's share in the company. These had a total of 96 employees (2018: 526 employees). Of material significance to the decrease in the number of employees in

joint operations was the merger of the oil and gas businesses of Wintershall and DEA in the joint venture, Wintershall Dea.

The average number of employees was distributed over the regions as follows:

Average number of employees

	2019	2018
Europe	73,126	73,067
of which Germany	54,722	54,749
North America	19,624	19,051
Asia Pacific	18,843	18,713
South America, Africa, Middle East	7,607	7,540
BASF Group	119,200	118,371
of which apprentices and trainees	2,811	2,819
temporary staff	2,922	3,120

Employees from joint operations are included in the average number of employees relative to BASF's share in the company. On average, these had a total of 206 employees (2018: 492 employees).

BASF Group's average number of employees for 2019 includes 6,801 employees from the disposal group for the construction chemicals business and for 2018 2,021 employees from the disposal group for the oil and gas business.

Notes to the Balance Sheet

14 Intangible assets

Accounting policies

Acquired intangible assets (excluding goodwill) with defined useful lives are generally measured at cost less straight-line amortization. The useful life is determined using the period of the underlying contract or the period of time over which the intangible asset can be expected to be used.

Impairments are recognized if the recoverable amount of the asset is lower than the carrying amount. The recoverable amount is the higher of either fair value less costs to sell or the value in use. The value in use is determined on the basis of future cash inflows and outflows, and the weighted average cost of capital after taxes, depending on tax rates and country-related risks. If the reasons for an impairment no longer exist, the write-downs are reversed up to the value of the asset, had an impairment not been recognized. Depending on the type of intangible asset, amortization is reported under cost of sales, selling expenses, research and development expenses or other operating expenses.

Intangible assets with indefinite useful lives are trade names and trademarks that have been acquired as part of acquisitions. These are measured at cost and tested for impairment annually, or if there is an indication that their value has declined.

Internally generated intangible assets primarily comprise internally developed software. Such software and other internally generated intangible assets are measured at cost and amortized over their estimated useful lives. Impairments are recognized if the carrying amount of an asset exceeds the recoverable amount. In addition to those costs directly attributable to the asset, costs of internally generated intangible assets also include an appropriate portion of overhead costs.

The expected useful lives and amortization methods of intangible assets are based on historical values, plans and estimates. The weighted average amortization periods of intangible assets were as follows:

Average weighted amortization in years

	2019	2018
Distribution, supply and similar rights	15	15
Product rights, licenses and trademarks	19	19
Know-how, patents and production technologies	15	15
Internally generated intangible assets	4	4
Other rights and values	5	4

Emission rights: Emission certificates, which are granted free of charge by the German Emissions Trading Authority (Deutsche Emissionshandelsstelle) or a similar authority in other countries, are recognized in the balance sheet with a value of zero. Certificates purchased on the market are capitalized at cost as intangible assets. Emissions generated create an obligation to surrender the emission certificates. Emission certificates purchased on the market are subsequently measured at fair value, up to a maximum of the amount of the acquisition costs. If the fair value is lower than the carrying amount on the balance sheet date, the emission rights are impaired.

Goodwill is only written down in the case of an impairment. Impairment testing is performed once a year and whenever there is an indication of impairment. Goodwill impairments are not reversed.

Goodwill

BASF's goodwill is allocated to 22 cash-generating units (2018: 23), which are defined either on the basis of business units or at a higher level. Goodwill for two of these cash-generating units, Pigments and Construction Chemicals, was reclassified to the disposal groups in 2019.

Annual impairment testing was performed in the fourth quarter of 2019 on the basis of the cash-generating units with the exception of the goodwill of the two units affected by the reclassification. Recoverable amounts were determined using the value in use. This was based on plans approved by company management and their respective cash flows, generally for the next five years. For the period thereafter, a terminal value was calculated using a forward projection from the last detailed planning year as a perpetual annuity. Planning is based on experience, current performance and management's best possible estimates on the future development of individual parameters, such as raw materials prices and profit margins. Oil and gas prices are also among the main input parameters that provide the basis for the forecast of cash flows in the current financial plans. Market assumptions regarding, for example, economic development and market growth are included based on external macroeconomic and industry-specific sources.

The required discounting of cash flows for impairment testing is calculated using the weighted average cost of capital rate after tax, which is determined using the capital asset pricing model. It comprises a risk-free interest rate, a market risk premium, and a spread for credit risk based on the respective industry-specific peer group. The calculation also takes into account capital structure and the beta factor of the respective peer group as well as the average tax rate of each cash-generating unit. Impairment tests of the units were conducted assuming a weighted average cost of capital rate after taxes of between 5.16% and 7.73% (2018: between 5.83% and 6.90%). This corresponds to a weighted average cost of capital rate before taxes of between 6.38% and 10.00% (2018: between 7.00% and 8.50%).

The impairment tests for the construction chemicals and pigments cash-generating units were conducted before reclassification of goodwill to the disposal groups.

The recoverable amount for the two cash-generating units was calculated using fair value less expected costs to sell or the value in use. The weighted average cost of capital rates on the respective dates of impairment testing were 5.32% for construction chemicals and 7.03% for pigments.

After determining the recoverable amount for the cash-generating units, the conclusion was that reasonable possible deviations from the key assumptions would not lead to the carrying amounts of the 22 units exceeding their respective recoverable amounts.

Goodwill of cash-generating units

Million €

Cash-generating unit	2019		2018	
	Goodwill	Growth rate ^a	Goodwill	Growth rate ^a
Agricultural Solutions division	3,219	2.0%	3,236	2.0%
Catalysts division (excluding battery materials)	1,315	2.0%	1,298	2.0%
Construction Chemicals division ^b	–	–	753	2.0%
Personal Care Ingredients in the Care Chemicals division	515	2.0%	518	2.0%
Pigments in the Dispersions & Pigments division ^c	–	–	403	1.5%
Surface Treatment in the Coatings division	1,512	2.0%	1,500	2.0%
Other cash-generating units	1,544	0.0–2.0%	1,503	0.0–2.0%
Goodwill as of December 31	8,105		9,211	

^a Growth rates used in impairment tests to determine terminal values in accordance with IAS 36

^b Reclassification of goodwill from the construction chemicals business to the disposal group in the amount of €772 million as of December 21, 2019

^c Reclassification of goodwill from the pigments business to the disposal group in the amount of €414 million as of August 29, 2019

Development of intangible assets

Development of intangible assets 2019

Million €

	Distribution, supply and similar rights	Product rights, licenses and trademarks	Know-how, patents and production technologies	Internally generated intangible assets	Other rights and values ^a	Goodwill	Total
Cost							
As of January 1, 2019	4,038	1,839	4,575	152	553	9,211	20,368
Changes in the scope of consolidation	–	–	0	–	–	0	0
Additions	(2)	0	86	45	163	–	292
Additions from acquisitions	3	1	52	–	(46)	(47)	(37)
Disposals	(157)	(8)	(25)	(2)	(86)	(3)	(281)
Transfers	–	–	(6)	–	26	–	20
Transfers to disposal groups	(1,038)	(410)	(409)	–	(5)	(1,186)	(3,048)
Currency effects	47	11	46	1	6	130	241
As of December 31, 2019	2,891	1,433	4,319	196	611	8,105	17,555
Accumulated amortization							
As of January 1, 2019	2,043	376	1,046	94	255	–	3,814
Changes in the scope of consolidation	–	–	–	–	–	–	–
Additions	259	59	287	20	113	–	738
Disposals	(157)	(8)	(22)	(2)	(82)	–	(271)
Transfers	–	–	15	–	–	–	15
Transfers to disposal groups	(845)	(190)	(265)	–	(3)	–	(1,303)
Currency effects	23	1	11	–	2	–	37
As of December 31, 2019	1,323	238	1,072	112	285	–	3,030
Net carrying amount as of December 31, 2019	1,568	1,195	3,247	84	326	8,105	14,525

^a Including licenses to such rights and values

Additions related primarily to the acquisition of technologies and patents amounting to €49 million from Grillo-Werke AG, Duisburg, Germany, in the Nutrition & Care segment. Additions also included newly acquired software licenses and rights of use.

Additions from acquisitions resulted from the acquisition of Isobionics B.V., Geleen, Netherlands, a startup company that develops and produces natural flavors and fragrances. This increased goodwill by €16 million and capitalized know-how by €31 million. By contrast, there was a decrease of goodwill in the amount of €65 million due to a retroactive purchase price allocation and purchase price adjustment to assets from the acquisition of significant parts of Bayer's seed and non-selective herbicide businesses and its vegetable seeds business in the previous year.

Disposals of intangible assets amounting to €281 million primarily concerned the derecognition of fully amortized assets for distribution and supply rights in the Agricultural Solutions segment and of software licenses.

Transfers to disposal groups were attributable to intangible assets in connection with the construction chemicals business in December 2019 and the pigments business in August 2019.

In 2019, additions to **accumulated amortization** contained impairments of €15 million, which pertained primarily to patents that were not allocated to an operational segment and were revalued due to a planned sale.

Development of intangible assets 2018

Million €

	Distribution, supply and similar rights	Product rights, licenses and trademarks	Know-how, patents and production technologies	Internally generated intangible assets	Other rights and values ^a	Goodwill	Total
Cost							
As of January 1, 2018	4,722	1,150	1,879	116	411	9,477	17,755
Changes in the scope of consolidation	–	–	–	–	–	–	–
Additions	1	35	36	36	47	–	155
Additions from acquisitions	364	1,054	2,725	–	136	1,261	5,540
Disposals	(174)	(8)	(73)	(1)	(32)	(6)	(294)
Transfers	2	–	(29)	1	21	–	(5)
Transfers to disposal groups	(862)	(413)	(15)	–	(35)	(1,722)	(3,047)
Currency effects	(15)	21	52	–	5	201	264
As of December 31, 2018	4,038	1,839	4,575	152	553	9,211	20,368
Accumulated amortization							
As of January 1, 2018	2,301	479	954	81	222	124	4,161
Changes in the scope of consolidation	–	–	–	–	–	–	–
Additions	279	49	168	14	85	–	595
Disposals	(173)	(5)	(72)	(1)	(26)	–	(277)
Transfers	–	–	–	0	(1)	–	(1)
Transfers to disposal groups	(370)	(151)	(13)	–	(26)	(128)	(688)
Currency effects	6	4	9	–	1	4	24
As of December 31, 2018	2,043	376	1,046	94	255	0	3,814
Net carrying amount as of December 31, 2018	1,995	1,463	3,529	58	298	9,211	16,554

^a Including licenses to such rights and values

In 2018, **intangible assets** included rights of the Oil & Gas segment, which were amortized using the unit of production method, until the date of reclassification to the disposal group.

Additions referred primarily to software licenses purchased or internally developed software applications. Additions also included concessions for the search and production of oil and gas in Brazil.

Additions from acquisitions amounted to €5,540 million in 2018. The acquisition of significant parts of Bayer's seed and non-selective herbicide businesses and vegetable seeds business, as well as the acquisition of Toda America LLC's battery materials business led to a €1,257 million increase in **goodwill**. A further addition to goodwill amounting to €4 million arose from an additional purchase price payment for the acquisition in 2017 of GRUPO Thermotek based in Monterrey, Mexico. Further additions to intangible assets in connection with the key acquisitions mentioned above amounted to €4,279 million. These related predominantly to know-how, patents and production technologies in the amount of €2,725 million; product rights, licenses and trademarks in the amount of €1,054 million, as well as distribution, supply and similar rights in the amount of €364 million.

Disposals of intangible assets amounting to €294 million were largely attributable to the derecognition of fully amortized assets. The sale of shares in the Aguada Pichana Este concession in Argentina and the divestiture of the production site for styrene butadiene-based paper dispersions in Pischelsdorf, Austria led to a €6 million disposal of goodwill.

Transfers to disposal groups related mainly to the reclassification of intangible assets from the oil and gas business as of September 30, 2018 and, to a lesser extent, from the paper and water chemicals business to the disposal groups.

In 2018, additions to **accumulated amortization** contained impairments of €4 million. This mainly pertained to impairments of non-strategic know-how, patents and production technologies in the Functional Materials & Solutions segment and, to a lesser extent, to the amortization of unused software licenses and discontinued IT projects. Reversals of impairments of €2 million included in additions to accumulated amortization had a countereffect. These related primarily to distribution rights in the Functional Materials & Solutions segment and to a higher valuation of emissions rights due to increased fair market values. Until September 30, 2018, they also included amortization of rights belonging to the Oil & Gas segment in the amount of €29 million, which were amortized in accordance with the unit of production method.

15 Property, plant and equipment

Accounting policies


Property, plant and equipment are measured at cost less depreciation and impairment over their useful lives. The revaluation method is not applied. Low-value assets are fully expensed in the year of acquisition.

The cost of self-constructed plants includes direct costs, appropriate allocations of material and production overhead costs, and a share of the general administrative costs of the divisions involved in the construction of the plants.

Expenditures related to the scheduled maintenance of large-scale plants are capitalized separately and depreciated using the straight-line method over the period until the next planned turnaround. Costs for the replacement of components are recognized as assets if an additional future benefit is expected. The carrying amount of the replaced components is derecognized. Costs for maintenance and repair as part of normal business operations are recognized as an expense.

Both movable and immovable fixed assets are principally depreciated using the straight-line method. The estimated useful lives and depreciation methods of property, plant and equipment are based on historical values, plans and estimates. The depreciation methods, useful lives and residual values are reviewed at each balance sheet date.

BASF began applying the new standard IFRS 16 – Leases as of January 1, 2019. As lessee, BASF generally recognizes for all leases right-of-use assets and lease liabilities in the balance sheet at the present value of financial commitments entered.

 For more information on first-time application of IFRS 16, see Note 1.2 IFRS 16 – Leases on page 201 and for more information on leases, see Note 28 from page 279 onward

Impairments to property, plant and equipment are recognized if the recoverable amount of the asset is lower than the carrying amount. The measurement is based on fair value less costs to sell or the value in use. The value in use is determined on the basis of future cash inflows and outflows, and the weighted average cost of capital after taxes, depending on tax rates and country-related risks. An impairment is recognized for the difference between the carrying amount and the recoverable amount. If the reasons for an impairment no longer exist, the write-downs are reversed up to the value of the asset, had an impairment not been recognized.

Investment properties held to realize capital gains or rental income are immaterial. They are valued at the lower of fair value or cost less depreciation.

The weighted average depreciation periods of continuing operations were as follows:

Weighted average depreciation in years

	2019 ^a	2018
Buildings and structural installations	17	22
Machinery and technical equipment	11	11
Miscellaneous equipment and fixtures	6	7

^a Including capitalized rights of use through application of IFRS 16

The decrease in weighted average depreciation periods for buildings and structural installations resulted primarily from the addition of lease assets in accordance with IFRS 16.

Borrowing costs: If directly incurred as part of the acquisition, construction or production of a qualifying asset are capitalized as part of the acquisition or production cost of that asset. A qualifying asset is an asset for which the process necessary to make it ready for its intended use or sale is longer than one year. Borrowing costs are capitalized up to the date the asset is ready for its intended use. The borrowing costs were calculated based on a rate of 1.5% (previous year: 1.5%) and adjusted on a country-specific basis, if necessary. All other borrowing costs are recognized as an expense in the period in which they are incurred.

Government grants: Government grants related to the acquisition or construction of property, plant and equipment reduce the acquisition or construction cost of the respective assets. Other government grants or government assistance are recognized immediately as other operating income or treated as deferred income and released over the underlying period.

Development of property, plant and equipment including right-of-use assets arising from leases in 2019

Million €

	Land	Right-of-use land ^a	Buildings	Right-of-use buildings ^a	Machinery and technical equipment	Right-of-use machinery and technical equipment ^a	Miscellaneous equipment and fixtures	Right-of-use miscellaneous equipment and fixtures ^a	Advance payments and construction in progress	Right-of-use advance payments and construction in progress ^a	Total
Cost											
As of January 1, 2019	1,349	154	10,807	700	42,331	190	4,616	274	3,905	–	64,326
Changes in the scope of consolidation	–	1	–	–	5	–	4	–	5	–	15
Additions	13	24	214	100	1,206	109	190	210	1,767	6	3,839
Additions from acquisitions	–	–	2	–	1	–	–	–	–	–	3
Disposals	(76)	(4)	(114)	(33)	(605)	(8)	(182)	(28)	(15)	–	(1,065)
Transfers	(266)	275	207	92	1,841	107	321	129	(2,702)	–	4
Transfers to disposal groups	(87)	(7)	(429)	(55)	(1,281)	0	(172)	(35)	13	–	(2,053)
Currency effects	17	(3)	70	4	285	1	31	1	33	–	439
As of December 31, 2019	950	440	10,757	808	43,783	399	4,808	551	3,006	6	65,508
Accumulated depreciation											
As of January 1, 2019	104	–	6,238	–	32,480	–	3,400	–	6	–	42,228
Changes in the scope of consolidation	–	–	(2)	–	1	–	3	–	–	–	2
Additions	(3)	18	433	142	2,022	80	384	162	170	–	3,408
Disposals	–	–	(81)	(2)	(576)	(5)	(166)	(25)	(17)	–	(872)
Transfers	(48)	49	(20)	12	(87)	69	(45)	70	(2)	–	(2)
Transfers to disposal groups	(1)	(1)	(225)	(8)	(928)	0	(123)	(11)	–	–	(1,297)
Currency effects	1	(1)	31	–	198	–	19	–	1	–	249
As of December 31, 2019	53	65	6,374	144	33,110	144	3,472	196	158	–	43,716
Net carrying amount as of December 31, 2019	897	375	4,383	664	10,673	255	1,336	355	2,848	6	21,792

a Right-of-use assets of €1,318 million were capitalized as of January 1, 2019, following the initial application of IFRS 16 and the values were restated accordingly.

Additions to property, plant and equipment arising from investment projects (excluding leases) amounted to €3,390 million in 2019. Investments were made at the following sites in particular: Ludwigshafen, Germany; Antwerp, Belgium; Shanghai, China; Geismar, Louisiana; and Freeport, Texas. Material investments included the acetylene plant as well as the expansion of the vitamin A plant in Ludwigshafen, Germany. Furthermore, additions included renovations and major repairs to the steam cracker and the construction of a new propane tank in Antwerp, Belgium. Investments also included the upgrade and capacity expansion of the MDI synthesis unit in Geismar, Louisiana. Government grants for funding investment measures reduced asset additions by €9 million.

In 2019, impairments of €315 million and reversals of impairments of €6 million were included in **accumulated depreciation**. The impairments were primarily attributable to construction in progress resulting from discontinued investment projects in North America within the Petrochemicals segment. Furthermore, impairments on buildings and technical equipment at one production site in Europe were also included in accumulated depreciation.

Disposals of property, plant and equipment included the sale of a building complex in Switzerland.

Transfers related mainly to the reclassification of operation-ready assets from construction in progress to other asset categories. Transfers also included reclassification of existing finance leases as of December 31, 2018 to right-of-use assets due to the initial application of IFRS 16.

Transfers to disposal groups included property, plant and equipment, which had been reclassified to the disposal groups for the pigments business and the construction chemicals business.

For more information on divestitures, see Note 2.4 from page 210 onward

Currency effects raised property, plant and equipment by €190 million and resulted mainly from the appreciation of the U.S. dollar against the euro.

Development of property, plant and equipment 2018

Million €

	Land, land rights and buildings	Machinery and technical equipment	Of which depreciation according to the unit of production method	Miscellaneous equipment and fixtures	Construction in progress	Total
Cost						
As of January 1, 2018	11,169	50,558	7,940	4,387	4,799	70,913
Changes in the scope of consolidation	77	5	–	2	1	85
Additions	192	679	109	216	2,528	3,615
Additions from acquisitions	650	634	–	64	77	1,425
Disposals	(71)	(407)	–	(171)	(52)	(701)
Transfers	300	1,159	–	190	(1,657)	(8)
Transfers to disposal groups	(245)	(10,899)	(8,170)	(108)	(1,883)	(13,135)
Currency effects	84	602	121	36	92	814
As of December 31, 2018	12,156	42,331	–	4,616	3,905	63,008
Accumulated depreciation						
As of January 1, 2018	6,065	36,110	4,329	3,264	216	45,655
Changes in the scope of consolidation	4	–	–	2	–	6
Additions	354	2,409	498	358	34	3,155
Disposals	(45)	(372)	–	(164)	(52)	(633)
Transfers	(3)	(7)	–	–	–	(10)
Transfers to disposal groups	(81)	(6,118)	(4,923)	(87)	(196)	(6,482)
Currency effects	48	458	96	27	4	537
As of December 31, 2018	6,342	32,480	–	3,400	6	42,228
Net carrying amount as of December 31, 2018	5,814	9,851	–	1,216	3,899	20,780

In 2018, **machinery and technical equipment** contained oil and gas deposits, including related wells, production facilities and further infrastructure, which were depreciated according to the unit of production method. The table presents the development of property, plant and equipment including these assets until the oil and gas business was transferred to the disposal group.

Additions to property, plant and equipment arising from investment projects amounted to €3,615 million in 2018. Investments were primarily made at the sites in Ludwigshafen, Germany, Antwerp, Belgium, Shanghai, China, Geismar, Louisiana and Freeport, Texas. Material investments included the acetylene plant as well as plants for the production of catalysts in Ludwigshafen, Germany. Furthermore, additions included renovations to the steam cracker and the construction of a new propane tank in Antwerp, Belgium. Other investments included the construction of oil and gas facilities and wells in Europe and South America.

Government grants for funding investment measures reduced asset additions by €26 million.

Acquisitions led to an increase in property, plant and equipment in the amount of €1,425 million, primarily from the acquisition of significant parts of Bayer's seed and non-selective herbicide businesses and its vegetable seeds business.

In 2018, impairments of €52 million and reversals of impairments of €1 million were included in **accumulated depreciation**. The impairments were primarily attributable to construction in progress resulting from discontinued investment projects in North America.

Disposals of property, plant and equipment included the sale of production plants for oleochemical surfactants in Mexico and the production site for styrene butadiene-based paper dispersions in Pischelsdorf, Austria.

For more information on divestitures, see Note 2.4 from page 210 onward

Transfers related mainly to the reclassification of operation-ready assets from construction in progress to other asset categories.

Currency effects raised property, plant and equipment by €277 million and resulted mainly from the appreciation of the U.S. dollar against the euro.

16 Investments accounted for using the equity method and other financial assets

Accounting policies

The carrying amounts of shareholdings accounted for using the equity method are adjusted annually based on the pro rata share of net income, dividends and other changes in equity. Should there be indications of a reduction in the value of an investment, an impairment test is conducted and, if necessary, an impairment is recognized in the income statement. Furthermore, earnings and the carrying amount were adjusted due to deviating accounting policies or purchase price allocations, primarily with respect to Wintershall Dea GmbH, Kassel/Hamburg, Germany.

Additions in 2019 related mainly to the share in Wintershall Dea GmbH, Kassel/Hamburg, Germany, in the amount of €14,078 million and in Solenis UK International Ltd., London, United Kingdom, in the amount of €590 million.

Disposals in 2019 included primarily a capital decrease in the amount of €1,541 million at Wintershall Dea GmbH, Kassel/Hamburg, Germany.

In addition to the net income of investments accounted for using the equity method, dividend distributions and other comprehensive income of the companies, **transfers** included €65 million from the reclassification of investments accounted for using the equity method to assets of the disposal group for the pigments business. Transfers in 2018 included €2,552 million from the reclassification of investments accounted for using the equity method to assets of the disposal group for the oil and gas business.

For a detailed overview of income from companies accounted for using the equity method, see Note 9 on page 231

Investments accounted for using the equity method

Million €	2019	2018
As of January 1	2,203	4,715
Changes in the scope of consolidation	–	–
Additions	14,678	55
Disposals	(1,573)	(10)
Transfers ^a	(282)	(2,571)
Currency effects	(18)	14
Net carrying amount as of December 31	15,008	2,203

^a This item also includes effects on earnings from the discontinued oil and gas business in the amount of €99 million until reclassification to the disposal group as of September 30, 2018.

Other financial assets

Million €	December 31, 2019	December 31, 2018
Other shareholdings	501	453
Long-term securities	135	117
Other financial assets	636	570

17 Inventories

Accounting policies

Inventories are measured at acquisition cost or cost of conversion based on the weighted average method. If the market price or the fair value of the sales products, which are based on the net realizable values, is lower, then the sales products are written down to this lower value. The net realizable value is the estimated price in the ordinary course of business less the estimated costs of completion and the estimated selling costs.

In addition to direct costs, cost of conversion includes an appropriate allocation of production overhead costs based on normal utilization rates of the production plants, provided that they are related to the production process. Pensions, social services and voluntary social benefits are also included, as well as allocations for administrative costs, provided they relate to the production. Borrowing costs are not included in cost of conversion.

Inventories may be written down if the prices for the sales products decline, or in cases of a high rate of days sales of inventory (DSI). Write-downs on inventories are reversed if the reasons for them no longer apply.

The exception made by IAS 2 for traders is applied to the measurement of precious metals. Accordingly, inventories held exclusively for trading purposes are measured at fair value less costs to sell and recognized in the precious metal trading item (carrying amount as of December 31, 2019: €977 million; as of December 31, 2018: €780 million) under miscellaneous current assets. All changes in value are immediately recognized in the statement of income.

Inventories

Million €	December 31, 2019	December 31, 2018
Raw materials and factory supplies	3,379	3,541
Work in progress, finished goods and merchandise	7,742	8,507
Advance payments and services in progress	102	118
Inventories	11,223	12,166

Work in progress, finished goods and merchandise are combined into one item due to production conditions in the chemical industry. Services in progress mainly relate to services not invoiced as of the balance sheet date.

Cost of sales included inventories recognized as an expense amounting to €29,643 million in 2019, and €30,176 million in 2018. The amount of €1,122 million was recognized in profit or loss for the discontinued construction chemicals business in 2019, and €1,109 million in 2018.

Write-downs on inventory were recognized in the amount of €111 million in 2019 and in the amount of €73 million in 2018.

Of total **inventories**, €1,240 million was measured at net realizable value in 2019 and €1,120 million in 2018.

18 Receivables and miscellaneous assets

Other receivables and miscellaneous assets

Million €

	December 31, 2019		December 31, 2018	
	Noncurrent	Current	Noncurrent	Current
Loans and interest receivables	165	275	224	271
Derivatives with positive fair values	204	395	121	224
Receivables from finance leases	20	3	23	2
Receivables from capital equipment of nonconsolidated subsidiaries	–	123	–	98
Receivables from bank acceptance drafts	–	188	–	163
Other	306	217	243	169
Other receivables and assets that qualify as financial instruments	695	1,201	611	927
Prepaid expenses	103	310	57	251
Defined benefit assets	123	–	63	–
Tax refund claims	132	967	107	891
Employee receivables	0	15	0	16
Precious metal trading items	–	977	–	780
Other	59	320	48	274
Other receivables and assets that do not qualify as financial instruments	417	2,589	275	2,212
Other receivables and miscellaneous assets	1,112	3,790	886	3,139

The decline in noncurrent **loans and interest receivables** was predominantly due to changes in loans to nonconsolidated subsidiaries.

The increase in noncurrent **derivatives with positive fair values** primarily affected the market valuation of combined interest rate and currency swaps. The change in current derivatives with positive fair market values was largely attributable to the increase in fair values of commodity derivatives for precious metals.

Bank acceptance drafts are used as an alternative form of payment in China. Bank acceptance drafts are issued at a discount from their par value. They can be held to maturity, traded or redeemed prematurely at a discount. If BASF discounts a bank acceptance draft with recourse, a liability toward the credit institution is recognized in the amount of the payment received.

Current **prepaid expenses** in 2019 mainly included prepayments of €30 million related to operating activities compared with €22 million in 2018, as well as €79 million in prepayments for insurance in 2019 compared with €83 million in 2018. Prepayments for license costs increased from €38 million in 2018 to €74 million in 2019. Non-current prepaid expenses in 2019 included higher advance payments for received precious metal catalysts to be refurbished.

The change in current **tax refund claims** is largely attributable to the rise in open income tax receivables.

The rise in current other receivables and assets, which represent financial instruments, was due to deposits on commodity derivatives, which were traded through clearing houses.

Precious metal trading items primarily comprise physical items, precious metal accounts as well as long positions in precious metals, which are largely hedged through sales or derivatives.

Expected losses on trade accounts receivable at BASF are calculated primarily on the basis of internal or external customer ratings and the associated probability of default.

The following table presents the gross values and credit risks for trade accounts receivable measured at amortized cost as of December 31, 2019.

Accounts receivable, trade

Million €

Creditworthiness as of December 31, 2019	Equivalence to external rating ^a	Gross carrying amounts
High/medium credit rating	from AAA to BBB-	5,880
Low credit rating	from BB- to D	3,201

^a Standard & Poor's rating

BASF generally monitors the credit risk associated with counterparties with which receivables exist in the form of financial instruments. In accordance with IFRS 9, impairments for expected credit losses on receivables are recognized based on this.

Valuation allowances on receivables (financial instruments) 2019

Million €

	As of January 1, 2019	Additions	Reversals	Reclassification between stages	Translation effect	Reclassification to assets of disposal groups	As of December 31, 2019
Accounts receivable, trade	353	168	146	(1)	(3)	(47)	324
of which stage 2	42	64	61	0	0	(2)	43
stage 3	311	104	85	(1)	(3)	(45)	281
Other receivables	27	15	3	1	0	-	40
of which stage 1	3	3	2	0	0	-	4
stage 2	0	0	0	0	0	-	0
stage 3	24	12	1	1	0	-	36
Total	380	183	149	0	(3)	(47)	364

At BASF, a comprehensive, global credit insurance program covers **accounts receivable, trade**. Under a global excess of loss policy, future bad debts are insured for essentially all BASF Group companies excluding joint ventures. The program has no impact on the calculation of valuation allowances in accordance with IFRS 9. No compensation claims were incurred in either 2019 or 2018.

Payment terms are generally agreed upon individually with customers and, as a rule, are within 90 days. In 2019, valuation allowances of €168 million were added for trade accounts receivable, and valuation allowances of €146 million were reversed. In the previous year, valuation allowances of €128 million were added for trade accounts receivable, and valuation allowances of €117 million were reversed.

In 2019, valuation allowances of €15 million were recognized for **other receivables** representing financial instruments, and valuation allowances of €3 million were reversed. In the previous year, valuation allowances of €11 million were recognized for all other receivables, and valuation allowances of €9 million were reversed.

Additions included valuation allowances of €9 million due to a change in valuation parameters.

19 Capital, reserves and retained earnings

Authorized capital

BASF SE has only issued fully paid-up registered shares with no par value. There are no preferential voting rights or other restrictions. BASF SE does not hold any treasury shares.

In accordance with the resolution of the Annual Shareholders' Meeting on May 3, 2019, the Board of Executive Directors was authorized, with the consent of the Supervisory Board, to increase, until May 2, 2024, on a one-off basis or in portions on a number of occasions, the company's share capital by a total of up to €470 million by issuing new shares against contributions in cash or in kind. In principle, shareholders are entitled to a subscription right. However, the Board of Executive Directors is authorized, with the approval of the Supervisory Board, to exclude shareholders' statutory subscription rights in the cases specified in the authorizing resolution. The Board of Executive Directors is authorized, with the consent of the Supervisory Board, to lay down the further contents of the share rights and the details of the execution of the capital increase. The total shares issued on the basis of the above authorization with the exclusion of the shareholders' subscription right in the case of capital increases in return for contributions in cash or in kind must not exceed 10% of the share capital at the time that this authorization comes into effect or – if this value is lower – at the time of its exercise. The proportionate amount of the share capital of those shares that are to be issued on the basis of conversion or option bonds granted during the term of this authorization under the exclusion of the subscription right, must be credited against the aforementioned ceiling of 10%. This authorization has not been exercised to date.

Conditional capital

By way of a resolution of the Annual Shareholders' Meeting of May 12, 2017, the Board of Executive Directors was authorized,

with the approval of the Supervisory Board, to issue, on a one-off basis or in portions on more than one occasion, bearer or registered convertible bonds and/or bonds with warrants, or combinations of these instruments, with or without maturity limitations up to a nominal value of €10 billion until May 11, 2022. The notional interest in the share capital attributable to the BASF shares to be issued in connection with the debt instruments issued under this authorization may not exceed 10% of the share capital.

In this connection, the share capital was increased conditionally by up to €117,565,184 by issuing a maximum of 91,847,800 new registered BASF shares. The conditional capital increase will only be carried out to the extent to which holders of convertible bonds, or warrants attached to bonds with warrants issued, exercise their conversion or option rights. This authorization has not been exercised to date.

Authorization of share buybacks

By way of a resolution of the Annual Shareholders' Meeting of May 12, 2017, the Board of Executive Directors was authorized to buy back shares until May 11, 2022, in accordance with section 71(1) no. 8 of the German Stock Corporation Act (AktG). The buyback cannot exceed 10% of the company's share capital at the time the resolution was passed and can take place via the stock exchange, a public purchase offer addressed to all shareholders, or a public invitation to the shareholders to submit sales offers. This authorization has not been exercised to date.

Reserves and retained earnings

Capital reserves include effects from BASF's share program, premiums from capital increases and consideration for warrants and negative goodwill from the capital consolidation resulting from acquisitions of subsidiaries in exchange for the issue of BASF SE shares at par value.

Reserves and retained earnings

Million €	December 31, 2019	December 31, 2018
Legal reserves	830	767
Other retained earnings	41,226	35,932
Retained earnings	42,056	36,699

Transfers from **other retained earnings** increased **legal reserves** by €66 million in 2019 (2018: €81 million).

BASF and LetterOne completed the merger of Wintershall and DEA on April 30, 2019. In this connection, €140 million from the remeasurement of defined benefit plans was reclassified from other comprehensive income to retained earnings.

The acquisition of shares in companies that BASF already controls or that are included in the Consolidated Financial Statements as a joint arrangement is treated as a transaction between shareholders, as long as this does not lead to a change in the consolidation method. There were no material transactions of this type in 2019, as in the previous year.

Payment of dividends

In accordance with the resolution of the Annual Shareholders' Meeting on May 3, 2019, BASF SE paid a dividend of €3.20 per share from the retained profit of the 2018 fiscal year. With 918,478,694 qualifying shares, this represented total dividends of €2,939,131,820.80. The remaining €43,303,300.12 in retained profits was allocated to retained earnings.

20 Other comprehensive income

Accounting policies

The expenses and income shown in other comprehensive income are divided into two categories: Items that will be recognized in the income statement in the future (known as "recycling") and items that will not be reclassified to the income statement in the future. The first category includes translation adjustments, the measurement of certain securities classified as debt instruments, and changes in the fair value of derivatives held to hedge future cash flows. Items in other comprehensive income that will not be reclassified to the income statement at a future date include effects from the remeasurement of defined benefit plans.

Remeasurement of defined benefit plans

Changes in the value of plan assets reduced other comprehensive income by €393 million in 2019, and by €745 million in the previous year (after taxes).

BASF and LetterOne completed the merger of Wintershall and DEA on April 30, 2019. In this connection, €140 million from the remeasurement of defined benefit plans was reclassified from other comprehensive income to retained earnings.

 For more information on the remeasurement of defined benefit plans, see Note 22 from page 253 onward

Unrealized gains/losses from currency translation

Translation adjustments decreased by €1,264 million year on year. Of that amount, €834 million after taxes related to reclassification of realized gains/losses from divestiture to the income statement (recycling associated with deconsolidation of Wintershall companies). The remaining change resulted primarily from the appreciation of the Russian ruble and the U.S. dollar relative to the euro.

Cash flow hedges

Net losses previously recognized in equity were reclassified to the income statement (recycling) in the amount of €36 million due to divestiture.

Hedging future cash flows at shareholdings accounted for using the equity method led to unrealized losses of minus €12 million in 2019 and minus €11 million in 2018.

 For more information on cash flow hedge accounting, see Note 27.4 from page 272 onward

21 Noncontrolling interests

Noncontrolling interests

Group company	Partner	December 31, 2019		December 31, 2018	
		Equity interest		Equity interest	
		%	Million €	%	Million €
WIGA Transport Beteiligungs-GmbH & Co. KG W & G Transport Holding GmbH ^a , OPAL Gastransport GmbH & Co. KG ^a	Gazprom Germania GmbH, Berlin, Germany	–	–	49.98 ^a	141
BASF India Limited, Mumbai, India	Free float	26.67	42	26.67	42
BASF PETRONAS Chemicals Sdn. Bhd., Shah Alam, Malaysia	PETRONAS Chemicals Group Berhad, Kuala Lumpur, Malaysia	40.00	172	40.00	193
BASF TOTAL Petrochemicals LLC, Port Arthur, Texas	Total Petrochemicals & Refining USA, Inc., Houston, Texas	40.00	335	40.00	302
Shanghai BASF Polyurethane Company Ltd., Shanghai, China	Shanghai Hua Yi (Group) Company, Shanghai, China, and SINOPEC Assets Management Corporation, Beijing, China	30.00	99	30.00	178
BASF TODA Battery Materials, LLC, Tokyo, Japan	TODA KOGYO CORP., Hiroshima, Japan	34.00	37	34.00	35
BASF Shanghai Coatings Co. Ltd., Shanghai, China	Shanghai Huayi Fine Chemical Co., Ltd, Shanghai, China	40.00	65	40.00	59
Other			103		105
Total			853		1,055

^a Partners' equity interest in W & G Transport Holding GmbH and OPAL Gastransport GmbH & Co. KG: 50.03%; voting rights and share of earnings: 49.98%

22 Provisions for pensions and similar obligations

Accounting policies

In addition to state pension plans, most employees are granted company pension benefits from either defined contribution or defined benefit plans. Benefits generally depend on years of service, contributions or compensation, and take into consideration the legal framework of labor, tax and social security laws of the countries where the companies are located. To limit the risks of changing financial market conditions as well as demographic developments, employees have, for a number of years now, been almost exclusively offered defined contribution plans for future years of service.

The accounting policies presented in the following relate to defined benefit pension obligations.

Provisions for pensions are calculated on an actuarial basis in accordance with the projected unit credit method using assumptions relating to the following valuation parameters, among others: future developments in compensation, pensions and inflation, employee turnover and the life expectancy of beneficiaries. Obligations are discounted based on the market yields on high-quality corporate fixed-rate bonds.

Similar obligations, especially those arising from commitments by North American Group companies to pay the healthcare costs and life insurance premiums of retired staff and their dependents, are reported under provisions for similar obligations.

Actuarial reports are used to calculate the amount of pension provisions.

Actuarial gains and losses from changes in estimates relating to the actuarial assumptions used to calculate defined benefit obligations, the difference between standardized and actual returns on plan assets, as well as the effects of the asset ceiling are recognized directly in equity as other comprehensive income.

The Group Pension Committee monitors the risks of all pension plans of the Group. In this context, it issues guidelines regarding the governance and risk management of pension plans, particularly with regard to the financing of pension commitments and the portfolio structure of existing plan assets. The organization, responsibilities, strategy, implementation and reporting requirements are documented for the units involved.

Economic and legal environment of the plans

In some countries – especially in Germany, in the United States, in the United Kingdom and in Switzerland – there are pension obligations subject to government supervision or similar legal restrictions. For example, there are minimum funding requirements to cover pension obligations, which are based on actuarial assumptions that differ from those pursuant to IAS 19. Furthermore, there are qualitative and quantitative restrictions on allocating plan assets to certain asset categories. This could result in annual fluctuations in employer contributions, financing measures and the assumption of obligations in favor of the pension funds to comply with regulatory requirements.

The obligations and the plan assets used to fund the obligations are exposed to demographic, legal and economic risks. Economic risks are primarily due to unforeseen developments on commodity and capital markets. They affect, for example, pension adjustments based on the level of inflation in Germany and in the United Kingdom, as well as the impact of discount rates on the amount of the defined benefit obligation. In previous years, measures taken to close plans with defined benefits for future service, especially benefits based on final pay promises and the assumption of healthcare costs for former

employees led to a reduction in risk with regard to future benefit levels.

The strategy of the BASF Group with regard to financing pension commitments takes into account country-specific supervisory and tax regulations.

In some countries, pension benefits were granted for which the employer has a subsidiary liability. Pension benefits in a number of countries include minimum interest guarantees to a limited extent. If the pension fund cannot generate the income needed to provide the minimum guarantee, this must be provided by the employer under the subsidiary liability. To the extent that recourse to the employer is unlikely based on the structure and execution of the pension benefits as well as the asset situation of the pension fund, these plans are treated as defined contribution plans.

Description of the defined benefit plans

The following section describes the typical plan structure in the individual countries. Different arrangements may exist, in particular due to the assumption of plans as part of acquisitions; however, these do not have any material impact on the description of plans in the individual countries.

Germany

For BASF SE and German Group companies, a basic level of benefits is provided by BASF Pensionskasse VVaG, a legally independent plan, which is financed by employer and employee contributions as well as the return on plan assets. BASF SE ensures the necessary contributions to adequately finance the benefits promised by BASF Pensionskasse VVaG. Some of the benefits financed via BASF Pensionskasse VVaG are subject to adjustments that must be borne by its member companies to the extent that these cannot be borne by BASF Pensionskasse VVaG due to the regulations imposed by the German supervisory authority. In 2004, the basic benefit plan was closed for newly hired employees at

German BASF companies and replaced by a defined contribution plan. At BASF SE, occupational pension promises that exceed the basic level of benefits are financed under a contractual trust arrangement by BASF Pensionstreuhand e.V.; at German Group companies, these benefits are financed primarily via pension provisions. The benefits are largely based on cash balance plans. Furthermore, employees are given the option of participating in various deferred compensation schemes.

United States

Employees are granted benefits based on defined contribution plans.

Effective 2010, the existing defined benefit plans were closed to further increases in benefits based on future years of service, and benefits earned in the past were frozen. There is no entitlement to pension adjustments to compensate for cost-of-living increases.

The legal and regulatory frameworks governing the plans are based on the U.S. Employee Retirement Income Security Act (ERISA), which requires the plan sponsor to ensure a minimum funding level. Any employer contributions necessary to meet the minimum funding level are based on the results of an actuarial valuation. Furthermore, there are unfunded pension plans that are not subject to ERISA requirements.

Additional similar obligations arise from plans that assume the healthcare costs and life insurance premiums of retired employees and their dependents. Such plans have been closed to new entrants since 2007. In addition, the amount of the benefits for such plans has been frozen.

Switzerland

The employees of the BASF Group in Switzerland receive a company pension, which is financed through a pension fund by employer and employee contributions as well as the return on plan assets. The pension plans are accounted for as defined benefit plans, as the obligatory minimum pension guaranteed by law under the Swiss Pension Fund Act (BVG) is included in the scheme. All benefits vest immediately. According to government regulations, the employer is obligated to make contributions, so that the pension funds are able to grant the minimum benefits guaranteed by law. The pension funds are managed by boards, where employer and employees are equally represented, which steer and monitor the benefit plans and asset allocation.

United Kingdom

Employees are granted benefits based on a defined contribution plan.

The BASF Group also maintains defined benefit plans in the United Kingdom, which have been closed for further increases based on future years of service. Adjustments to compensate for increases in the cost of living until the beginning of retirement are legally required for beneficiaries of defined benefit plans.

The financing of the pension plans is determined by the provisions of the regulatory authority for pensions and the relevant social and labor law requirements. The defined benefit plans are administered by a trust company, whose Board of Trustees, according to the trustee agreement and law, represents the interests of the beneficiaries and ensures that the benefits can be paid in the future. The required funding is determined using technical valuations according to local regulations every three years.

Other countries

For subsidiaries in other countries, defined benefits are covered in some cases by pension provisions, but mainly by external insurance companies or pension funds.

Actuarial assumptions

The valuation of the defined benefit obligation is based on the following key assumptions:

Assumptions used to determine the defined benefit obligation as of December 31

	Germany		United States		Switzerland		United Kingdom	
	2019	2018	2019	2018	2019	2018	2019	2018
Discount rate	1.10	1.70	3.10	4.10	0.20	0.90	2.20	2.90
Projected pension increase	1.50	1.50	–	–	–	–	3.00	3.10

Assumptions used to determine expenses for pension benefits in the respective business year

	Germany		United States		Switzerland		United Kingdom	
	2019	2018	2019	2018	2019	2018	2019	2018
Discount rate	1.70	1.90	4.10	3.60	0.90	0.50	2.90	2.60
Projected pension increase	1.50	1.50	–	–	–	–	3.10	3.10

The assumptions used to ascertain the defined benefit obligation as of December 31 are used in the following year to determine the expenses for pension plans.

A Group-wide, uniform procedure is used to determine the discount rates applied for valuation of material pension obligations of the BASF Group. Accordingly, the discount rates were derived from the yields on corporate bonds in the respective currency zones with an issue volume of more than 100 million units of the respective currency with a minimum rating of AA– to AA+ from at least one of the following three rating agencies: Fitch, Moody's, or Standard & Poor's.

The valuation of the defined benefit obligation is generally performed using the most recent actuarial mortality tables as of December 31 of the respective business year, which in Germany and the United States are derived from the BASF Group population and were last updated in 2019 for the pension obligations in Germany and in 2018 for the pension obligations in the United States.

Actuarial mortality tables (significant countries) as of December 31, 2019

Germany	Heubeck Richttafeln 2018G (modified)
United States	RP-2018 (modified) with MP-2018 generational projection
Switzerland	BVG 2015 generational
United Kingdom	S1PxA (standard actuarial mortality tables for self-administered plans (SAPS))

Sensitivity analysis

A change in the material actuarial assumptions would have the following effects on the defined benefit obligation:

Sensitivity of the defined benefit obligation as of December 31

Million €

	Increase by 0.5 percentage points		Decrease by 0.5 percentage points	
	2019	2018	2019	2018
Discount rate	(2,214)	(1,880)	2,544	2,140
Projected pension increase	1,584	1,190	(1,328)	(1,080)

An alternative valuation of the defined benefit obligation was performed to determine how changes in the underlying assumptions influence the amount of the defined benefit obligation. A linear extrapolation of these amounts based on alternative changes in the assumptions as well as an addition of combined changes in the individual assumptions is not possible.

Explanation of the amounts in the statement of income and balance sheet**Composition of expenses for pension benefits**

Million €

	2019	2018
Expenses for defined benefit plans	222	416
Expenses for defined contribution plans	332	314
Expenses for pension benefits (recognized in income from operations)	554	730
Net interest expense from underfunded pension plans and similar obligations	157	133
Net interest income from overfunded pension plans	(2)	(2)
Expenses for pension benefits (recognized in the financial result)	155	131

The interest on the net defined benefit liability at the beginning of the year is recognized in the financial result. This is the difference between the interest cost of the defined benefit obligation and the standardized return on plan assets as well as the interest cost for the asset ceiling. The expected contribution payments and benefits paid over the course of the fiscal year are taken into account when determining net interest.

Net interest expense of the respective fiscal year is based on the discount rate and the defined benefit obligation at the beginning of the year.

Development of defined benefit obligations

Million €

	2019	2018
Defined benefit obligation as of January 1	26,651	26,871
Current service cost	380	384
Past service cost	(137)	32
Plan settlements	(219)	–
Interest cost	542	553
Benefits paid	(1,086)	(1,037)
Employee contributions	45	47
Actuarial gains/losses		
for adjustments relating to financial assumptions	2,777	239
adjustments relating to demographic assumptions	33	(163)
experience adjustments	(7)	(139)
Effects from acquisitions and divestitures	(802)	(374)
Other changes	(11)	1
Currency effects	257	237
Defined benefit obligation as of December 31	28,423	26,651

As of December 31, 2019, the weighted average duration of the defined benefit obligation amounted to 16.7 years (previous year: 15.4 years).

Development of plan assets

Million €	2019	2018
Plan assets as of January 1	19,280	20,648
Standardized return on plan assets	389	422
Deviation between actual and standardized return on plan assets	2,128	(1,043)
Employer contributions	463	175
Employee contributions	45	47
Benefits paid	(1,013)	(913)
Effects from acquisitions and divestitures	(442)	(92)
Past service cost	–	–
Plan settlements	(198)	–
Other changes	(16)	(135)
Currency effects	227	171
Plan assets as of December 31	20,863	19,280

The **standardized return on plan assets** is calculated by multiplying plan assets at the beginning of the year with the discount rate used for existing defined benefit obligations at the beginning of the year, taking into account benefit and contribution payments to be made during the year.

Effects from **plan settlements** resulted in 2019 primarily from the transfer of small benefit entitlements and the corresponding assets from the pension plan in the United States to an external insurer.

BASF's **employer contributions** in 2019 totaled €463 million, including a special contribution to BASF Pensionstreuhand e.V. in the amount of €300 million. Through continuous monitoring of financing requirements of its pension plans, BASF always strives to achieve the necessary yields to fill financing gaps over the course of time. Company contributions for 2020 are currently expected to be around €250 million.

Development of net defined benefit liability

Million €	2019	2018
Net defined benefit liability as of January 1	(7,371)	(6,223)
Current service cost	(380)	(384)
Past service cost	137	(32)
Plan settlements	21	–
Interest cost	(542)	(553)
Standardized return on plan assets	389	422
Deviation between actual and standardized return on plan assets	2,128	(1,043)
Actuarial gains/losses of the defined benefit obligation	(2,803)	63
Benefits paid by unfunded plans	73	124
Employer contributions	463	175
Effects from acquisitions and divestitures	360	282
Other changes	(5)	(136)
Currency effects	(30)	(66)
Net defined benefit liability as of December 31	(7,560)	(7,371)
of which defined benefit assets	123	63
provisions for pensions and similar obligations	7,683	7,434

Regional allocation of defined benefit plans as of December 31

Million €	Pension obligations		Plan assets		Net defined benefit liability	
	2019	2018	2019	2018	2019	2018
Germany	19,995	18,406	13,879	12,621	(6,116)	(5,785)
United States	3,777	3,745	2,483	2,448	(1,294)	(1,297)
Switzerland	1,845	1,953	1,792	1,838	(53)	(115)
United Kingdom	1,911	1,741	1,986	1,733	75	(8)
Other	895	806	723	640	(172)	(166)
Total	28,423	26,651	20,863	19,280	(7,560)	(7,371)

Explanations regarding plan assets

The target asset allocation has been defined by using asset liability studies and is reviewed regularly. Accordingly, plan assets are aligned with the long-term development of the obligations, taking into consideration the risks associated with the specific asset classes and the regulations relating to the investment of plan assets. The existing portfolio structure is based on the target asset allocation. In addition, current market assessments are taken into consideration. In order to mitigate risks and maximize returns, a widely spread global portfolio of individual assets is held.

Liability-driven investment (LDI) techniques, such as hedging the risk of changes in interest rates and inflation, are used in some pension plans, especially for U.K. and U.S. plans.

Structure of plan assets

%	2019	2018
Equities	29	25
Debt instruments	47	53
of which for government debtors	17	16
for other debtors	30	37
Real estate	4	4
Alternative investments	18	16
Cash and cash equivalents	2	2
Total	100	100

The asset class **debt instruments** comprises promissory notes and debentures (Pfandbriefe) as well as corporate and government bonds. Government bonds primarily relate to bonds from countries with the highest credit ratings, such as the United States, the United Kingdom, Germany and Switzerland. Corporate bonds mainly comprise bonds from creditworthy debtors, although particular high-yield bonds are also held to a limited extent. In connection with the continuous monitoring of default risk based on a given risk budget and on the observation of the development of the creditworthiness of issuers, the plan asset allocation may be adjusted in the case of a revised market assessment. **Alternative investments** largely comprise investments in private equity, absolute return funds and senior secured loans.

Almost all of the **equities** are priced on active markets. The category **debt instruments** includes promissory notes and debentures (Pfandbriefe) acquired through private placements with a market value in the amount of €193 million as of December 31, 2019, and €394 million as of December 31, 2018. For such securities, especially those held by domestic pension plans, there is no active market. The capital market compensates for this lack of fungibility with yield premiums depending on the maturity. With only a few

exceptions, there is no active market for plan assets in **real estate** and **alternative investments**.

Plan assets as of the balance sheet date contained securities issued by BASF Group companies with a market value of €2 million in 2019 and €9 million in 2018. The market value of the properties of legally independent pension funds rented to BASF Group companies amounted to €112 million on December 31, 2019 and €112 million on December 31, 2018.

Since 2010, there has been an agreement between BASF SE and BASF Pensionskasse VVaG on the granting of profit participation capital with a nominal value of €80 million, which is used to strengthen the financing of the BASF Pensionskasse VVaG. Beyond this, there were no material transactions between the legally independent pension funds and BASF Group companies in 2019 or 2018.

The funding of the plans was as follows:

Current funding situation of the pension plans as of December 31

Million €	2019		2018	
	Defined benefit obligation	Pension assets	Defined benefit obligation	Pension assets
Unfunded pension plans	2,373	–	2,575	–
Funded pension plans	26,050	20,863	24,076	19,280
Total	28,423	20,863	26,651	19,280

Defined contribution plans and government pensions

The contributions to defined contribution plans recognized in income from operations amounted to €332 million in 2019 and €314 million in 2018.

Contributions to government pension plans were €627 million in 2019 and €634 million in 2018.

23 Other provisions

Accounting policies

Other provisions are recognized when there is a present obligation as a result of a past event and when there is a probable outflow of resources whose amount can be reliably estimated. Provisions are recognized at the probable settlement value.

Provisions for **environmental protection and remediation costs** are recognized for expected costs for rehabilitating contaminated sites, recultivating landfills, removal of environmental contamination at existing production or storage sites and similar measures.

In addition, other provisions also cover expected costs for **restoration obligations for dismantling** existing plants and buildings, rehabilitating contaminated sites, recultivating landfills, removal of environmental contamination from existing production or storage sites and similar measures. If BASF is the only responsible party that can be identified, the provision covers the entire expected obligation. At sites operated together with one or more partners, the provision generally covers only BASF's share of the expected obligation. The amount of the provision is determined based on the available technical information on the site, the technology used, legal regulations, and official requirements. The calculation accounts for expected significant changes in obligations.

Provisions for **restructuring measures** include severance payments to departing employees or similar personnel expenses as well as expected costs for site closures, including the costs for demolition and similar measures. Provisions are recognized for these expenses when the relevant measures have been planned and announced by management.

Provisions for **employee obligations** primarily include variable compensation including associated social security contributions, as well as obligations for granting long-service bonuses and anniversary payments. Provisions for long-service and anniversary bonuses are predominantly calculated based on actuarial principles.

Provisions for **obligations from sales and purchase contracts** largely comprise obligations arising from rebates granted and other price discounts in the Agricultural Solutions segment, warranties and product liabilities, sales commissions and expected losses on contracts.

Other provisions also cover risks from litigation and claims, provided the criteria for recognizing a provision are fulfilled. In order to determine the amount of the provisions, the company takes into consideration the facts related to each case, the size of the claim, claims awarded in similar cases and independent expert advice as well as assumptions regarding the probability of a successful claim and the range of possible claims. Actual costs can deviate from these estimates.

 For more information, see Note 26 from page 265 onward

Provisions for **litigation, damage claims, warranties and similar obligations** contain anticipated expenses from lawsuits in which BASF is the defendant party, as well as obligations under damage claims against BASF and fines.

The probable amount required to settle noncurrent provisions is discounted if the effect of discounting is material. In this case, the provision is recognized at present value. Assumptions must be made in determining the discount rate (2019: 1.5%; 2018: 1.5%) used for calculating noncurrent provisions. Financing costs related to unwinding the discount of provisions in subsequent periods are shown in other financial result.

Other provisions

Million €

	December 31, 2019		December 31, 2018	
		Of which current		Of which current
Restoration obligations	77	–	86	–
Environmental protection and remediation costs	654	110	638	127
Employee obligations	1,653	1,257	1,817	1,467
Obligations from sales and purchase contracts	1,165	1,161	1,261	1,253
Restructuring measures	141	116	121	98
Litigation, damage claims, warranties and similar obligations	126	74	140	85
Other	462	220	490	222
Total	4,278	2,938	4,553	3,252

The decrease in provisions for **employee obligations** was mainly attributable to lower accruals for variable compensation components.

The decrease in provisions for **obligations from sales and purchase contracts** resulted from lower accruals for rebate programs.

Other includes interest on noncurrent tax provisions.

The following table shows the development of other provisions by category. Other changes include reclassifications to disposal groups, changes in the scope of consolidation, divestitures, currency effects

and the reclassification of obligations to liabilities when the amount and timing of these obligations become known.

Development of other provisions in 2019

Million €

	January 1, 2019	Additions	Unwinding of discount	Utilization	Releases	Other changes	December 31, 2019
Restoration obligations	86	15	1	(4)	0	(21)	77
Environmental protection and remediation costs	638	74	3	(72)	(19)	30	654
Employee obligations	1,817	1,374	3	(1,422)	(55)	(64)	1,653
Obligations from sales and purchase contracts	1,261	1,330	–	(1,280)	(131)	(15)	1,165
Restructuring measures	121	103	0	(56)	(16)	(11)	141
Litigation, damage claims, warranties and similar obligations	140	18	0	(23)	(9)	0	126
Other	490	206	1	(163)	(71)	(1)	462
Total	4,553	3,120	8	(3,020)	(301)	(82)	4,278

Continued from previous page

Financial indebtedness

Million €

				Carrying amounts based on effective interest method		
		Currency	Nominal value (million, currency of issue)	Effective interest rate	December 31, 2019	December 31, 2018
3%	Bond 2013/2033	EUR	500	3.15%	492	492
2.875%	Bond 2013/2033	EUR	200	2.96%	198	198
4%	Bond 2018/2033	AUD	160	4.24%	98	96
1.625%	Bond 2017/2037	EUR	750	1.73%	738	737
3.25%	Bond 2013/2043	EUR	200	3.27%	199	199
1.025%	Bond 2018/2048	JPY	10,000	1.03%	82	79
3.89%	U.S. private placement series A 2013/2025	USD	250	3.92%	222	218
4.09%	U.S. private placement series B 2013/2028	USD	700	4.11%	622	610
4.43%	U.S. private placement series C 2013/2034	USD	300	4.45%	266	261
BASF Finance Europe N.V.						
0.0%	Bond 2016/2020	EUR	1,000	0.14%	999	997
3.625%	Bond 2018/2025	USD	200	3.69%	177	174
0.75%	Bond 2016/2026	EUR	500	0.88%	496	495
Other bonds					608	588
Bonds and other liabilities to the capital market					15,137	18,444
Liabilities to credit institutions					3,240	2,397
Financial indebtedness					18,377	20,841

Breakdown of financial indebtedness by currency

Million €	December 31, 2019	December 31, 2018
Euro	11,283	12,358
U.S. dollar	4,558	6,160
Pound sterling	935	888
Norwegian krone	309	306
Chinese renminbi	253	163
Hong Kong dollar	149	145
Japanese yen	138	139
Turkish lira	123	127
Australian dollar	98	99
Brazilian real	88	54
Ukrainian hryvnia	83	89
Argentinian peso	75	44
Indian rupee	69	48
South African rand	65	74
Kazakhstani tenge	53	42
Indonesian rupiah	46	43
Other currencies	52	62
Total	18,377	20,841

Maturities of financial indebtedness

Million €	December 31, 2019	December 31, 2018
Following year 1	3,362	5,509
Following year 2	1,078	1,335
Following year 3	2,157	1,178
Following year 4	1,223	2,105
Following year 5	1,310	1,155
Following year 6 and maturities beyond this year	9,247	9,559
Total	18,377	20,841

Other bonds

Other bonds consist primarily of industrial revenue and pollution control bonds issued by the BASF Corporation group that were used to finance investments in the United States. Both the weighted average interest rate of these bonds and their weighted effective interest rate amounted to 2.9% in 2019 and 3.0% in 2018. The average weighted residual term amounted to 158 months as of December 31, 2019 (December 31, 2018: 168 months).

Liabilities to credit institutions

Liabilities to credit institutions rose from €2,397 million as of December 31, 2018 to €3,240 million as of December 31, 2019. The weighted average interest rate on loans amounted to 3.8% in 2019 compared with 5.6% in 2018.

Unused credit lines

BASF SE had committed and unused credit lines with variable interest rates amounting to €6,000 million both as of December 31, 2019 and as of December 31, 2018. In addition, BASF SE had an unused credit line of €380 million (2018: €400 million) for the financing of specific research and development activities as of December 31, 2019.

Other liabilities

Million €	December 31, 2019		December 31, 2018	
	Noncurrent	Current	Noncurrent	Current
Derivatives with negative fair values	188	493	230	308
Liabilities from leases	1,039	381	91	43
Loan and interest liabilities	50	534	75	387
Advances received on orders	–	537	–	903
Miscellaneous liabilities	39	398	41	565
Other liabilities that qualify as financial instruments	1,316	2,343	437	2,206
Liabilities related to social security	63	84	58	85
Employee liabilities	25	244	28	262
Liabilities from precious metal trading positions	–	462	–	34
Contract liabilities	259	53	155	31
Deferred income	13	33	23	35
Miscellaneous liabilities	2	208	4	345
Other liabilities that do not qualify as financial instruments	362	1,084	268	792
Other liabilities	1,678	3,427	705	2,998

Other liabilities

The increase in **liabilities from leases** was mainly attributable to the initial application of IFRS 16. **Liabilities from precious metal trading positions** rose due to higher market prices for precious metals. **Contract liabilities** include mainly customer payments entitling them to access to licenses over an agreed period of time. The

majority of existing contracts have terms of up to seven years. Of the contract liabilities reported as of December 31, 2019, €53 million are expected to be recognized as revenue in 2020.

For more information on financial risks and derivative instruments, see Note 27 from page 266 onward

For more information on liabilities arising from leases, see Note 28 from page 279 onward

Secured liabilities

Million €	December 31, 2019	December 31, 2018
Liabilities to credit institutions	15	18
Accounts payable, trade	5	6
Other liabilities	116	166
Secured liabilities	136	190

Liabilities to credit institutions were secured primarily with registered land charges. **Other liabilities** include collateral for derivative instruments with negative fair values. As in the previous year, there were no secured contingent liabilities in 2019.

25 Other financial obligations

The figures listed below are stated at nominal value:

Other financial obligations

Million €

	December 31, 2019	December 31, 2018
Bills of exchange	6	7
Guarantees	447	75
Warranties	65	50
Collateral granted on behalf of third-party liabilities	1	1
Initiated investment projects	4,331	7,094
of which purchase commitments	1,093	1,249
for the purchase of intangible assets	25	19
Payment and loan commitments and other financial obligations	80	68

Since the formation of the Wintershall Dea joint venture, BASF SE has continued to provide a guarantee to Abu Dhabi National Oil Corporation covering all obligations of Wintershall Dea Middle East GmbH related to the Ghasha concession in the United Arab Emirates. The guarantee does not stipulate a maximum amount. The risk of a claim being exercised against the guarantee is currently classified as low.

The decline in **initiated investment projects** is mainly attributable to the disposal of the oil and gas business in 2019.

Of the initiated investment projects and guarantees, companies allocated to the disposal groups accounted for €130 million as of December 31, 2019, and €3,649 million as of December 31, 2018.

Obligations arising from purchase contracts

Obligations arising from purchase contracts resulted primarily from long-term purchase obligations for raw materials. Firm purchase obligations as of December 31, 2019, were as follows:

Obligations arising from purchase contracts

Million €

2020	8,280
2021	5,148
2022	4,062
2023	2,681
2024	1,318
2025 and maturities beyond this year	4,973
Total	26,462

26 Risks from litigation and claims

BASF Corporation has potential liability under the Comprehensive Response, Compensation and Liability Act of 1980, as amended, and related state laws for investigation and cleanup at certain sites. The Lower Passaic River Study Area (LPRSA) is one such site comprising the lower 17 miles of the Passaic River in New Jersey. BASF Corporation and more than 60 other companies (collectively, the Lower Passaic River Study Area Cooperating Parties Group or CPG) agreed to complete a remedial investigation / feasibility study (RI/FS) of the LPRSA. In 2016, the United States Environmental Protection Agency (USEPA) selected a final remedy for the lower eight miles of the LPRSA. In late 2018, USEPA indicated being amenable to the CPG's approach for remediation work in the upper portion of the LPRSA. Completion of the RI/FS occurred in August 2019 and a formal decision from USEPA on a targeted approach for the upper portion of the LPRSA is expected for 2020. BASF Corporation established a provision covering BASF's currently estimated share of the remediation costs.

Between November 2014 and March 2015, a putative class action lawsuit and several additional lawsuits were filed in the United States District Court of the Southern District of New York against BASF Metals Limited (BML), based in the United Kingdom, along with other defendants, alleging violations of antitrust and commodities laws stemming from the price discovery process for platinum and palladium. The lawsuits were consolidated, and a Second Consolidated Amended Class Action Complaint naming, among others, BASF Corporation, was eventually filed in July 2015 and dismissed on jurisdictional grounds on March 28, 2017. On May 15, 2017, the plaintiffs filed an amended Complaint that renews allegations against defendants and BML, while BASF Corporation is not named as a defendant. The defendants filed a renewed Joint Motion to Dismiss and BML filed a renewed Motion to Dismiss. In 2018 and 2019, no further developments in this proceeding occurred. A pro se complaint filed in September 2015 that was not consolidated into

the Second Consolidated Amended Class Action Complaint was ultimately dismissed as of November 18, 2019.

Furthermore, BASF SE and its affiliated companies are defendants in or parties to a variety of judicial, arbitrational or regulatory proceedings on a recurring basis. To our current knowledge, none of these proceedings will have a material effect on the economic situation of BASF.

27 Supplementary information on financial instruments

27.1 Accounting policies

Financial instruments

Financial assets and financial liabilities are recognized in the consolidated balance sheet when the BASF Group becomes a party to a financial instrument. Financial assets are derecognized when BASF no longer has a contractual right to the cash flows from the financial asset or when the financial asset is transferred together with all material risks and rewards of ownership and BASF does not have control of the financial asset after it has been transferred. For example, receivables are derecognized when they are definitively found to be uncollectible. Financial liabilities are derecognized when the contractual obligations expire, are discharged or cancelled. Regular-way purchases and sales of financial instruments are accounted for using the settlement date; in precious metals trading, the trade date is used.

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. If pricing on an active market is available, for example in the form of exchange prices, these are used as the basis for the measurement. Otherwise, the measurement is based on either internal measurement models using current market parameters or external measurements, for example, from banks. These internal measurements predominantly use the net present value method and option pricing models. These models incorporate, for example, expected future cash flows as well as discount factors adjusted for term and, potentially, risk. Depending on the availability of market parameters, BASF assigns financial instruments' market values one of the three levels of the fair value hierarchy pursuant to IFRS 13. Reassignment to a different level during a fiscal year is only carried out if the

availability of observable market parameters for identical or similar items changes.

Except for financial assets measured at fair value through profit or loss, IFRS 9 requires the recognition of impairments for expected credit losses, independent of the existence of any actual default events and individual impairments if evidence of a permanent need for impairment exists. If this evidence no longer exists, the impairment is reversed in the statement of income up to the carrying amount of the asset had the default event not occurred. Impairments are generally recognized in separate accounts.

The classification and measurement of financial assets is based on the one hand on the cash flow condition (the "solely payments of principle and interest" criterion), that is, the contractual cash flow characteristics of an individual financial asset. On the other hand, it also depends on the business model used for managing financial asset portfolios. Based on these two criteria, BASF uses the following measurement categories for financial assets:

- **Financial assets at fair value through profit or loss** include all financial assets whose cash flows are not solely payments of principal and interest in accordance with the cash flow condition established in IFRS 9. At BASF, derivatives, for example, are allocated to this measurement category. In general, BASF does not exercise the fair value option in IFRS 9, which permits the allocation of financial instruments not to be measured at fair value through profit or loss on the basis of the cash flow condition or the business model criterion to the above category under certain circumstances.
- **Financial assets measured at amortized cost** include all assets with contractual terms that give rise to cash flows on specific dates, provided that these cash flows are solely payments of principal and interest on the principal amount outstanding in accordance with the cash flow condition in IFRS 9, to the extent that the asset is held with the intention of collecting the expected contractual cash flows over its term. At BASF, this measurement

category includes trade accounts receivable, as well as receivables reported under other receivables and miscellaneous assets and certain securities.

Initial measurement of these assets is generally at fair value, which usually corresponds to the transaction price at the time of acquisition. Subsequent measurement effects are recognized in income using the effective interest method.

Impairments are recognized for expected credit losses in both initial and subsequent measurement, even before the occurrence of any default event. If the counterparty is considered as having defaulted, individual impairments are generally recognized for the financial assets measured at amortized cost. In addition, an impairment must be recognized when the contractual conditions that form the basis for the receivable are changed through renegotiation in such a way that the present value of the future cash flows decreases.

The extent of expected credit losses is determined based on the credit risk of a financial asset, as well as any changes to this credit risk: If the credit risk of a financial asset has increased significantly since initial recognition, expected credit losses are generally recognized over the lifetime of the asset. If, however, the credit risk has not increased significantly in this period, impairments are generally only recognized as 12-month expected credit losses. By contrast, under the simplified approach for determining expected credit losses permitted by IFRS 9, impairments for receivables such as lease receivables and trade accounts receivable always cover the lifetime expected credit losses of the receivable concerned.

At BASF, the credit risk of a financial asset is assessed using both internal information and external rating information on the respective counterparty. A significant increase in the counterparty's credit risk is assumed if its rating is lowered by a certain number of notches. The significance of the increase in the credit risk is not reviewed for trade accounts receivable or lease receivables. Furthermore, it is generally assumed that the credit risk for a counterparty with a high credit rating will not have increased significantly.

Regional and, in certain circumstances, industry-specific factors and expectations are taken into account when assessing the extent of impairment as part of the calculation of expected credit losses and individual impairments. In addition, BASF uses internal and external ratings and the assessments of debt collection agencies and credit insurers, when available. Individual impairments are also based on experience relating to customer solvency and customer-specific risks. Factors such as credit insurance, which covers a portion of receivables measured at amortized cost, are likewise considered when calculating impairments. Bank guarantees and letters of credit are used to an immaterial extent. Expected credit losses and individual impairments are only calculated for those receivables that are not covered by insurance or other collateral. Impairments on receivables whose insurance includes a deductible are not recognized in excess of the amount of the deductible.

A decrease in impairment due, for example, to a reduction in the credit risk of a counterparty or an objective event occurring after the impairment is recorded in profit or loss. Reversals of impairments may not exceed amortized cost, less any expected future credit losses.

– **Financial assets at fair value through other comprehensive income** include all assets with contractual terms that give rise to cash flows on specified dates that are solely payments of principal and interest on the principal amount outstanding, in accordance with the cash flow condition in IFRS 9. Furthermore, the assets in this measurement category may not just be held with the intention of collecting the expected contractual cash flows over their term, but also generating cash flows from their sale. At BASF, certain securities that are classified as debt instruments are allocated to this category. BASF does not exercise the option to subsequently measure equity instruments through other comprehensive income.

Assets measured at fair value through other comprehensive income are initially measured at fair value, which usually corresponds to the nominal value of the securities allocated to this category at the time of acquisition. Subsequent measurement is likewise at fair value. Changes in the fair value are recognized in other comprehensive income and reclassified to the statement of income when the asset is disposed of.

Impairments on financial assets measured at fair value through other comprehensive income are calculated in the same way as impairments on financial assets measured at amortized cost and recognized in profit or loss.

The following measurement categories are used for financial liabilities:

- **Financial liabilities measured at amortized cost** generally include all financial liabilities, provided these do not represent derivatives. They are generally measured at fair value at the time of initial recognition, which usually corresponds to the value of the consideration received. Subsequent measurement is recognized in profit or loss at amortized cost using the effective interest method. At BASF, for example, bonds and liabilities to banks reported under financial indebtedness are measured at amortized cost.
- **Financial liabilities at fair value through profit or loss** contain derivative financial liabilities. These are likewise measured at the value of the consideration received as the fair value of the liability on the date of initial recognition. Fair value is also applied as a measurement basis for these liabilities in subsequent measurement. The option to subsequently measure financial liabilities at fair value is not exercised. Derivative financial instruments can be embedded within other contracts, creating a hybrid financial instrument. If IFRS requires separation, the embedded derivative is accounted for separately from its host contract and measured at fair value. If IFRS 9 does not provide for separation, the hybrid instrument is accounted for at fair value in its entirety.

Financial guarantees of the BASF Group are contracts that require compensation payments to be made to the guarantee holder if a debtor fails to make payment when due under the terms of a transaction entered into with the holder of the guarantee. Financial guarantees issued by BASF are measured at fair value upon initial recognition. In subsequent periods, these financial guarantees are carried at the higher of amortized cost or the best estimate of the present obligation as of the reporting date.

In **cash flow hedges**, future cash flows and the related income and expenses are hedged against the risk of changes in fair value. To this end, future underlying transactions and the corresponding hedging instruments are designated to a cash flow hedge accounting relationship for accounting purposes. The effective portion of the change in fair value of the hedging instrument, which often meets the definition of a derivative, and the cost of hedging are recognized directly in equity under other comprehensive income over the term of the hedge, taking deferred taxes into account. The ineffective portion is recognized immediately in the income statement. In the case of future transactions that lead to recognition of a nonfinancial asset or a nonfinancial liability, the cumulative fair value changes of the hedge in equity are generally charged against the cost of the hedged item on its initial recognition. For hedges based on financial assets, financial liabilities or future transactions, cumulative fair value changes of the hedges are transferred from equity to the income statement in the reporting period in which the hedged item is recognized in the income statement. The maturity of the hedging instrument is aligned with the effective date of the future transaction.

When **fair value hedge** accounting is used, the asset or liability recognized is hedged against the risk of a change in fair value. The hedging instruments used, which often take the form of a derivative, are measured at fair value and changes in fair value are recognized in the statement of income. The carrying amounts of the assets or liabilities designated as the underlying transaction are also measured at fair value through the statement of income.

27.2 Financial risks

Market risks

Foreign currency risks: Changes in exchange rates could lead to losses in the value of financial instruments and adverse changes in future cash flows from planned transactions. Foreign currency risks from financial instruments result from the translation at the closing rate of financial receivables, loans, securities, cash and financial liabilities into the functional currency of the respective Group company. Foreign currency contracts in various currencies are used to hedge foreign exchange risks from nonderivative financial instruments and planned transactions.

The foreign currency risk exposure corresponds to the net amount of the nominal volume of the primary and the derivative financial instruments that are exposed to currency risks. In addition, planned purchase and sales transactions of the respective following year are included if they fall under the currency risk management system. Long and short positions in the same currency are offset against each other.

The sensitivity analysis as of December 31, 2019, was conducted by simulating a 5% and 10% appreciation of the respective functional currency against the other currencies. A 5% appreciation of the respective functional currency would have reduced BASF's income before income taxes by €187 million as of December 31, 2019. A 10% appreciation of the respective functional currency would have resulted in an effect on BASF's income in the amount of minus €356 million. The sensitivity analysis as of December 31, 2018, was conducted using a 10% appreciation of the respective functional currency. It resulted in an effect of minus €373 million as of December 31, 2018. The effect from the items designated under hedge accounting would have increased shareholders' equity before income taxes by €19 million applying a 5% increase to the functional currency and by €40 million applying a 10% increase to the functional

currency as of December 31, 2019 (2018: increase of €33 million applying a 10% increase to the functional currency). This only refers to transactions in U.S. dollars. The foreign currency risk exposure amounted to €3,014 million as of December 31, 2019, and €3,185 million as of December 31, 2018.

Exposure and sensitivity by currency

Million €	December 31, 2019			December 31, 2018	
	Exposure	Sensitivity		Exposure	Sensitivity
		+5%	+10%		+10%
USD	1,977	(111)	(209)	2,119	(236)
Other	1,037	(56)	(106)	1,066	(104)
Total	3,014	(167)	(315)	3,185	(340)

Due to the use of options to hedge currency risks, the sensitivity analysis is not a linear function of the assumed changes in exchange rates.

Interest rate risks: Interest rate risks arise from changes in prevailing market interest rates, which can lead to changes in the fair value of fixed-rate instruments and in interest payments for variable-rate instruments. Interest rate swaps and combined interest rate and currency derivatives are used to hedge these risks. The derivatives are presented in Note 27.5. Interest rate risks are relevant to BASF's financing activities but are not of material significance for BASF's operating activities.

The variable interest risk exposure, which also includes fixed rate bonds maturing in the following year, amounted to minus €1,414 million as of December 31, 2019 (2018: minus €4,802 million). An increase in all relevant interest rates by one half of a percentage point would have lowered income before income taxes by €3 million as of December 31, 2019. An increase in all relevant interest rates by one percentage point would have lowered income before income

taxes by €6 million as of December 31, 2019. An increase in all relevant interest rates by one percentage point would have lowered income before income taxes by €43 million as of December 31, 2018. If the relevant interest rates had changed by one half of a percentage point, the before-tax effect from items designated under hedge accounting would have been an immaterial increase in shareholders' equity as of December 31, 2019 (increase of €1 million applying a 1% change in interest rates). An increase of one percentage point in relevant interest rates in 2018 would have increased shareholders' equity by €5 million.

Carrying amount of nonderivative interest-bearing financial instruments

Million €	December 31, 2019		December 31, 2018	
	Fixed interest rate	Variable interest rate	Fixed interest rate	Variable interest rate
Loans	156	255	179	311
Securities	89	490	90	372
Financial indebtedness	15,848	2,529	15,597	5,244

Nominal and fair values of interest rate swaps and combined interest rate and currency swaps

Million €	December 31, 2019		December 31, 2018	
	Nominal value	Fair value	Nominal value	Fair value
Interest rate swaps	300	(4)	300	(7)
of which payer swaps	300	(4)	300	(7)
Combined interest rate and currency swaps	4,183	60	4,183	(103)
of which fixed rate	4,183	60	4,183	(103)

Commodity price risks: Some of BASF's divisions are exposed to strong fluctuations in raw materials prices. These result primarily from raw materials (for example naphtha, benzene, natural gas, LPG condensate) as well as from precious metals. BASF takes the following measures to reduce price risks associated with the purchase of raw materials:

- BASF uses commodity derivatives to hedge risks from the volatility of raw materials prices. These are primarily options on crude oil, oil products and natural gas.
- The Catalysts division enters into both short-term and long-term purchase contracts with precious metal producers. It also buys precious metals on spot markets from various business partners. The price risk from precious metals purchased to be sold on to third parties, or for use in the production of catalysts, is hedged using derivative instruments. This is mainly performed using forward contracts, which are settled by either entering into offsetting contracts or by delivering the precious metal.
- In the Agricultural Solutions division, the sales prices of products are sometimes pegged to the price of certain agricultural commodities. To hedge the resulting risks, derivatives on agricultural commodities are concluded.

In addition, BASF holds limited unhedged precious metal and oil product positions, which can also include derivatives, for trading on its own account. The value of these positions is exposed to market price volatility and is subject to constant monitoring.

By holding commodity derivatives and precious metal trading positions, BASF is exposed to price risks. The valuation of commodity derivatives and precious metal trading positions at fair value means that adverse changes in market prices could negatively affect the earnings and equity of BASF.

BASF performs value-at-risk analyses for all commodity derivatives and precious metals trading positions. Using the value-at-risk analysis enables continual quantification of market risk and forecasting of the maximum possible loss within a given confidence interval over a defined period. The value-at-risk calculation is based on a confidence interval of 95% and a holding period of one day. The value-at-risk calculation for precious metals is based on a confidence interval of 99%. BASF uses the variance-covariance approach.

BASF uses value at risk in conjunction with other risk management tools. Besides value at risk, BASF sets volume-based limits as well as exposure and stop-loss limits.

Exposure to commodity derivatives

Million €	December 31, 2019		December 31, 2018	
	Exposure	Value at risk	Exposure	Value at risk
Crude oil, oil products and natural gas	87	3	(12)	8
Precious metals	112	2	112	1
Agricultural commodities	163	0	50	1
Total	362	5	150	10

The exposure corresponds to the net amount of all long and short positions of the respective commodity category.

For more information on BASF's financial risks and risk management, see Opportunities and Risks from page 139 onward

Default and credit risk

Default and credit risks arise when customers and debtors do not fulfill their contractual obligations. BASF regularly analyzes the creditworthiness of the counterparties and grants credit limits on the basis of this analysis. Due to the global activities and diversified customer structure of the BASF Group, there is no significant concentration of default risk. The carrying amount of all receivables, loans and interest-bearing securities plus the nominal value of financial obligations stemming from contingent liabilities not to be recognized represents the maximum default risk for BASF.

For more information on credit risks, see Note 18 from page 249 onward

Liquidity risks

BASF promptly recognizes any risks from cash flow fluctuations as part of liquidity planning. BASF has ready access to ample liquid funds from the ongoing commercial paper program and confirmed lines of credit from banks.

27.3 Maturity analysis

The interest and principal payments as well as other payments for derivative financial instruments are relevant for the presentation of the maturities of the contractual cash flows from financial liabilities. Future cash flows are not discounted here.

Derivatives are included using their net cash flows, provided they have negative fair values and therefore represent a liability. Derivatives with positive fair values are assets and are therefore not taken into account.

Maturities of contractual cash flows from financial liabilities as of December 31, 2019

Million €

	Bonds and other liabilities to the capital market	Liabilities to credit institutions	Accounts payable, trade	Liabilities resulting from derivative financial instruments	Miscellaneous liabilities	Total
2020	2,483	1,149	5,087	404	969	10,092
2021	1,252	89	–	146	334	1,821
2022	2,244	212	–	52	209	2,717
2023	1,239	221	–	31	139	1,630
2024	683	776	–	–	101	1,560
2025 and thereafter	9,541	888	–	101	493	11,023
Total	17,442	3,335	5,087	734	2,245	28,843

Maturities of contractual cash flows from financial liabilities as of December 31, 2018

Million €

	Bonds and other liabilities to the capital market	Liabilities to credit institutions	Accounts payable, trade	Liabilities resulting from derivative financial instruments	Miscellaneous liabilities	Total
2019	4,860	902	5,122	138	669	11,691
2020	1,557	18	–	22	50	1,647
2021	1,249	181	–	22	30	1,482
2022	2,195	139	–	41	25	2,400
2023	1,207	175	–	65	23	1,470
2024 and thereafter	9,922	979	–	111	33	11,045
Total	20,990	2,394	5,122	399	830	29,735

27.4 Classes and categories of financial instruments

For trade accounts receivable, other receivables and miscellaneous assets, cash and cash equivalents, as well as trade accounts payable and other liabilities, the carrying amount approximates the fair value.

The fair value of financial indebtedness is determined on the basis of interbank interest rates. The difference between carrying amounts and fair values results primarily from changes in market interest rates.

Carrying amounts and fair values of financial instruments as of December 31, 2019

Million €

	Carrying amount	Total carrying amount within scope of application of IFRS 7	Valuation category in accordance with IFRS 9 ^b	Fair value	Of which fair value level 1 ^c	Of which fair value level 2 ^d	Of which fair value level 3 ^e
Shareholdings ^a	501	501	FVTPL	34	22	12	–
Receivables from finance leases	23	23	n/a	23	–	–	–
Accounts receivable, trade	8,755	8,755	AC	8,755	–	–	–
Accounts receivable, trade	338	338	FVTPL	338	–	338	–
Derivatives – no hedge accounting	437	437	FVTPL	437	1	436	–
Derivatives – hedge accounting	162	162	n/a	162	0	162	–
Other receivables and miscellaneous assets ^f	4,192	1,186	AC	1,186	–	–	–
Other receivables and miscellaneous assets ^f	88	88	FVTPL	88	–	88	–
Securities	11	11	AC	11	–	–	–
Securities	4	4	FVTOCI	4	–	4	–
Securities	563	563	FVTPL	563	563	–	–
Cash equivalents	198	198	FVTPL	198	198	–	–
Cash and cash equivalents	2,229	2,229	AC	2,229	2,229	–	–
Total assets	17,501	14,495		14,028	3,013	1,040	–
Bonds	14,276	14,276	AC	15,461	–	15,461	–
Commercial paper	861	861	AC	861	–	–	–
Liabilities to credit institutions	3,240	3,240	AC	3,240	–	–	–
Liabilities from leases	1,420	1,420	n/a	1,420	–	–	–
Accounts payable, trade	5,087	5,087	AC	5,087	–	–	–
Derivatives – no hedge accounting	677	677	FVTPL	677	33	644	–
Derivatives – hedge accounting	4	4	n/a	4	0	4	–
Other liabilities ^f	3,004	1,558	AC	1,558	–	–	–
Total liabilities	28,569	27,123		28,308	33	16,109	–

^a In general, only significant shareholdings are measured at fair value. All insignificant shareholdings are measured at cost (carrying amount: €467 million). Fair value level 1 is applied to publicly listed shareholdings. Level 2 is applied to shareholdings for which valuation is based on parameters observable in the market to the greatest extent possible. These may be adjusted to reflect valuation-relevant characteristics of the respective shareholding in the fair value.

^b AC: amortized cost; FVTOCI: fair value through other comprehensive income; FVTPL: fair value through profit or loss; a more detailed description of the categories can be found in Note 27.1 from page 266 onward.

^c Fair value was determined based on quoted, unadjusted prices on active markets.

^d Fair value was determined based on parameters for which directly or indirectly quoted prices on active markets were available.

^e Fair value was determined based on parameters for which there was no observable market data.

^f Does not include separately shown derivatives or receivables and liabilities from finance leases. If miscellaneous receivables are valued at fair value through profit or loss, their valuation is generally based on parameters observable on the market. These are adjusted to reflect valuation-relevant characteristics of the respective assets in the fair value.

Carrying amounts and fair values of financial instruments as of December 31, 2018

Million €

	Carrying amount	Total carrying amount within scope of application of IFRS 7	Valuation category in accordance with IFRS 9 ^b	Fair value	Of which fair value level 1 ^c	Of which fair value level 2 ^d	Of which fair value level 3 ^e
Shareholdings ^a	453	453	FVTPL	34	22	12	–
Receivables from finance leases	25	25	n/a	25	–	–	–
Accounts receivable, trade	10,665	10,665	AC	10,665	–	–	–
Accounts receivable, trade	–	–	FVTPL	–	–	–	–
Derivatives – no hedge accounting	252	252	FVTPL	252	1	251	–
Derivatives – hedge accounting	93	93	n/a	93	1	92	–
Other receivables and miscellaneous assets ^f	3,570	1,083	AC	1,083	–	–	–
Other receivables and miscellaneous assets ^f	85	85	FVTPL	85	–	85	–
Securities	13	13	AC	13	–	–	–
Securities	4	4	FVTOCI	4	4	–	–
Securities	445	445	FVTPL	445	445	–	–
Cash equivalents	63	63	FVTPL	63	63	–	–
Cash and cash equivalents	2,237	2,237	AC	2,237	2,237	–	–
Total assets	17,905	15,418		14,999	2,773	440	–
Bonds	15,895	15,895	AC	16,351	–	16,351	–
Commercial paper	2,549	2,549	AC	2,549	–	–	–
Liabilities to credit institutions	2,397	2,397	AC	2,397	–	–	–
Liabilities from finance leases	134	134	n/a	134	–	–	–
Accounts payable, trade	5,122	5,122	AC	5,122	–	–	–
Derivatives – no hedge accounting	531	531	FVTPL	531	6	525	–
Derivatives – hedge accounting	7	7	n/a	7	–	7	–
Other liabilities ^f	3,031	1,971	AC	1,971	–	–	–
Total liabilities	29,666	28,606		29,062	6	16,883	–

^a In general, only significant shareholdings are measured at fair value. All insignificant shareholdings are measured at cost (carrying amount: €419 million). Fair value level 1 is applied to publicly listed shareholdings. Level 2 is applied to shareholdings for which valuation is based on parameters observable in the market to the greatest extent possible. These may be adjusted to reflect valuation-relevant characteristics of the respective shareholding in the fair value.

^b AC: amortized cost; FVTOCI: fair value through other comprehensive income; FVTPL: fair value through profit or loss; a more detailed description of the categories can be found in Note 27.1 from page 266 onward.

^c Fair value was determined based on quoted, unadjusted prices on active markets.

^d Fair value was determined based on parameters for which directly or indirectly quoted prices on active markets were available.

^e Fair value was determined based on parameters for which there was no observable market data.

^f Does not include separately shown derivatives or receivables and liabilities from finance leases. If miscellaneous receivables are valued at fair value through profit or loss, their valuation is generally based on parameters observable on the market. These are adjusted to reflect valuation-relevant characteristics of the respective assets in the fair value.

Offsetting of derivative assets and liabilities as of December 31, 2019

	Offset amounts			Amounts that cannot be offset		Potential net amount
	Gross amount	Amount offset	Net amount	Due to global netting agreements	Relating to financial collateral	
Derivatives with positive fair values	452	(70)	382	(163)	(116)	103
Derivatives with negative fair values	424	(70)	354	(163)	(57)	134

Offsetting of derivative assets and liabilities as of December 31, 2018


	Offset amounts			Amounts that cannot be offset		Potential net amount
	Gross amount	Amount offset	Net amount	Due to global netting agreements	Relating to financial collateral	
Derivatives with positive fair values	264	(20)	244	(163)	(48)	33
Derivatives with negative fair values	483	(20)	463	(163)	(150)	150

The table "Offsetting of derivative assets and liabilities" shows the extent to which assets and liabilities were offset in the balance sheet, as well as potential effects from the offsetting of derivatives subject to a legally enforceable global netting agreement (primarily in the form of an ISDA agreement) or similar agreement. For positive fair values of combined interest rate and currency swaps, the respective counterparties provided cash collaterals in an amount comparable to the outstanding fair values.

Deviations from the derivatives with positive fair values and derivatives with negative fair values reported in other receivables and other liabilities at the end of 2019 and 2018 arose from derivatives not subject to any netting agreements as well as from embedded derivatives. These are therefore not included in the table above.

In addition to the offsetting of derivatives presented in the table above, trade accounts receivable were offset against advance payments received on orders that were subject to specific netting agreements with customers, which were included in current other liabilities in 2019. As a result, both balance sheet items were reduced by €647 million. This results in a net amount for trade accounts receivable of €9,093 million (gross amount before offsetting: €9,740 million). The resulting net amount for advance payments on orders is €537 million (gross amount before offsetting: €1,184 million). In 2018, neither trade accounts receivable nor advance payments received were netted.

The net gains and losses from financial instruments shown in the following table comprise the results of valuations, the amortization of discounts, the recognition and reversal of impairments, results from the translation of foreign currencies as well as interest, dividends and all other effects on the earnings resulting from financial instruments. The line item financial instruments at fair value through profit or loss contains only gains and losses from instruments that are not designated as hedging instruments in accordance with IFRS 9.

 Gains and losses from the valuation of securities recognized in equity are shown in development of income and expense recognized in equity attributable to shareholders of BASF SE on page 195

Net gains and losses from financial instruments 2019

Million €

	Total
Financial assets measured at amortized cost	256
of which interest result	48
Financial instruments at fair value through profit or loss	(37)
of which interest result	68
Financial assets at fair value through other comprehensive income	4
of which interest result	4
Financial liabilities measured at amortized cost	(724)
of which interest result	(512)

Net gains and losses from financial instruments 2018

Million €

	Total
Financial assets measured at amortized cost	33
of which interest result	58
Financial instruments at fair value through profit or loss	(45)
of which interest result	57
Financial assets at fair value through other comprehensive income	(4)
of which interest result	4
Financial liabilities measured at amortized cost	(599)
of which interest result	(450)

27.5 Derivative financial instruments and hedge accounting

The use of derivative financial instruments

BASF is exposed to foreign currency, interest rate and commodity price risks during the normal course of business. These risks are hedged using derivative instruments as necessary in accordance with a centrally determined strategy. Hedging is only employed for existing underlying transactions from the product business, cash investments and financing as well as for planned sales, raw material purchases and capital measures. The risks from the hedged items and the derivatives are continually monitored. Where derivatives have a positive market value, BASF is exposed to credit risks from derivative transactions in the event of nonperformance of the other party. To minimize the default risk on derivatives with positive market values, transactions are exclusively conducted with creditworthy banks and partners and are subject to predefined credit limits.

To ensure effective risk management, risk positions are centralized at BASF SE and certain Group companies. The contracting and execution of derivative financial instruments for hedging purposes are conducted according to internal guidelines, and subject to strict control mechanisms.

The fair values of derivative financial instruments are calculated using valuation models that use input parameters observable on the market. Exceptions to this are some commodity derivatives, whose valuation is based directly on market prices.

Fair value of derivative instruments

Million €

	December 31, 2019	December 31, 2018
Foreign currency forward contracts	26	(57)
Foreign currency options	22	13
Foreign currency derivatives	48	(44)
of which designated hedging instruments as defined by IFRS 9 (hedge accounting)	18	11
Interest rate swaps	(4)	(7)
of which designated hedging instruments as defined by IFRS 9 (hedge accounting)	(4)	(7)
Combined interest rate and currency swaps	60	(103)
of which designated hedging instruments as defined by IFRS 9 (hedge accounting)	138	80
Interest derivatives	56	(110)
Commodity derivatives	(186)	(39)
of which designated hedging instruments as defined by IFRS 9 (hedge accounting)	6	1
Derivative financial instruments	(82)	(193)

Cash flow hedge accounting

BASF is exposed to commodity price risks in the context of procuring naphtha. Some of the planned purchases of naphtha are hedged using swaps and options on oil and oil products. The main contractual elements of these items are aligned with the characteristics of the hedged item. Cash flow hedge accounting was employed for a portion of these hedging relationships in 2019. These transactions were not presented using cash flow hedge accounting in 2018. Cash flows from designated hedging instruments and hedged transactions occur in the following year and are also recognized in profit or loss for that year.

Furthermore, cash flow hedge accounting is employed to a minor extent for procuring natural gas, which is likewise exposed to commodity price risks. Commodity price-based options serve as hedging instruments, for which contract terms are defined to reflect

the risks of the hedged item. Cash flows from the hedging transaction and hedged item are generally recognized in profit or loss for the following year.

The change in the options' time value is separately recognized in equity and recognized in profit or loss in the year during which the hedged items mature. In 2019, a decrease in fair value of minus €3 million was recognized in equity attributable to shareholders of BASF SE, and €2 million was derecognized, reducing earnings. In 2018, a decrease in fair value of minus €2 million was recognized in equity attributable to shareholders of BASF SE, and €1 million was derecognized, reducing earnings.

BASF's planned soy bean procurement is also exposed to commodity price risks. These commodity price risks are hedged with soy bean futures. The contractual conditions for these hedging transactions correspond to the respective hedged item, and some

are designated as cash flow hedging relationships. Cash flows from these futures and the hedged expected future transactions are generally recognized in profit or loss for the following year.

BASF is exposed to foreign currency risks due to planned sales in U.S. dollars. To some extent, cash flow hedge accounting is applied using currency options. The average hedging rate in 2019 was \$1.1105 per euro and in 2018 \$1.1563 per euro. The impact on earnings from designated transactions in 2019 will be recognized in the following year. The decrease in the options' time value component arising in the amount of €38 million in 2019 was recognized separately in equity as the cost of hedging and resulted in a reduction in equity. The reclassification of the accumulated changes in the time value of options to profit or loss due to the maturity of hedged items had a countering effect in the amount of €35 million. In 2018, minus €33 million was recognized separately in equity as a change

in the options' time value component, and €36 million was reclassified to profit or loss.

The interest rate risk of the variable-rate bonds issued by BASF SE in 2013 was hedged using interest rate swaps, which converted the bonds into fixed-interest rate bonds with a rate of 1.45%. The key terms of the interest rate swap contracts used as hedging instruments generally correspond to the contractual elements of the hedged item. The bond and the interest rate swaps were designated as hedge accounting.

Furthermore, BASF SE's fixed-rate U.S. private placement of \$1.25 billion, issued in 2013, was converted to euros using cross-currency swaps, as the private placement exposes BASF to a combined interest/currency risk. The hedged interest rate was 4.13% in the fiscal years 2019 and 2018. The hedged foreign

exchange rate in both years was \$1.3589 per euro. This hedge was designated as a cash flow hedge.

The effects of the hedging relationships on the balance sheet, the cash flow hedge reserve, hedged nominal value and ineffectiveness to be determined are presented in the following tables by fiscal year.

Hedge accounting effects in 2019

Million €

	Carrying amount of hedging instruments				Cash flow hedge reserve				Change in fair values for assessing ineffectiveness		Recognized ineffectiveness	
	Financial assets	Financial liabilities	Balance sheet item	Nominal value	Accumulated amounts for continuing hedging relationships	Hedging effects recognized in other comprehensive income	Amounts reclassified to profit or loss for realized hedging transactions	Income statement item for recognition of reclassification	Hedging instrument	Hedged transaction	Ineffective-ness amount	Income statement item
Foreign currency risks	18	–	Other receivables and miscellaneous assets	733	10	7	0	Other operating income	10	10	–	n/a
Interest risks	–	4	Other liabilities	300	(1)	(1)	4	Interest income	4	4	–	n/a
Combined interest/foreign currency risks	138	–	Other receivables and miscellaneous assets	920	(37)	58	(21)	Other financial income	138	149	–	n/a
Commodity price risks	6	0	Other receivables and miscellaneous assets / other liabilities	123	2	4	–	n/a	2	2	–	n/a
Total	162	4		2,076	(26)	68	(17)		154	165	–	

Hedge accounting effects in 2018

Million €

	Carrying amount of hedging instruments				Cash flow hedge reserve				Change in fair values for assessing ineffectiveness		Recognized ineffectiveness	
	Financial assets	Financial liabilities	Balance sheet item	Nominal value	Accumulated amounts for continuing hedging relationships	Hedging effects recognized in other comprehensive income	Amounts reclassified to profit or loss for realized hedging transactions	Income statement item for recognition of reclassification	Hedging instrument	Hedged transaction	Ineffective-ness amount	Income statement item
Foreign currency risks	11	–	Other receivables and miscellaneous assets	743	5	8	(31)	Other operating income	5	5	–	n/a
Interest risks	–	7	Other liabilities	300	(3)	0	4	Interest income	7	7	–	n/a
Combined interest/foreign currency risks	80	–	Other receivables and miscellaneous assets	920	(64)	42	(49)	Other financial income	80	96	–	n/a
Commodity price risks	1	–	Other receivables and miscellaneous assets / other liabilities	88	1	5	–	n/a	1	1	–	n/a
Total	92	7		2,051	(61)	55	(76)		93	109	–	

The occurrence of all forecasted transactions was considered to be highly probably at all times during fiscal years 2018 and 2019. Amounts accumulated in the cash flow hedge reserve for commodity price risks are derecognized against the carrying amount of acquired assets once the hedged transaction occurs. Thus, an immediate reclassification of the amounts recognized in the cash flow hedge reserve to profit or loss does not occur in these cases.

28 Leases

A lease is an agreement that conveys the right to control the use an identified asset for a defined period of time in return for a payment.

Leases in which BASF is a lessee mainly relate to real estate and transportation and technical equipment.

Leases can be embedded within other contracts. If separation is required under IFRS, the embedded lease is recorded separately from its host contract and each component of the contract is carried and measured in accordance with the applicable regulations.

Lease accounting until December 31, 2018

Lease contracts were classified as either operating or finance leases until December 31, 2018.

A lease is classified as a finance lease if it transfers all substantial risks and rewards related to the leased asset. Assets subject to a finance lease were capitalized at the lower of the fair value of the leased assets or the present value of the minimum lease payments. A lease liability was recorded in the same amount. The periodic lease payments were divided into principal and interest components. The principal component reduced the lease liability and did not have an effect on earnings. The interest component was reported as an interest expense and increased the lease liability through the unwinding of the discount. Depreciation was recognized over the shorter of the useful life of the asset or the period of the lease.

Assets subject to operating leases were not capitalized. Lease payments were recognized in the income statement in the period they were incurred.

Lease accounting since January 1, 2019

With the adoption of IFRS 16, the lessee is no longer required to differentiate between operating and finance leases. As lessee, BASF now accounts for nearly all leases, recognizing right-of-use assets for leased assets and liabilities for lease agreements. The following principles are considered:

- BASF exercises the exemption for lease agreements with a maximum term of 12 months from the date of provision and low-value assets. Low-value assets are generally defined as leased assets worth a maximum of €5,000.
- Lease liabilities are measured at the present value of the remaining lease payments, taking into account the incremental borrowing rate.
- As a general rule, BASF separates non-lease components, such as services, from lease payments.
- A right-of-use asset is generally recognized at the same amount as the lease liability. Differences may arise from the lease payments made prior to the provision of the leased asset, less any lease incentives received.
- After capitalization at commencement date, whereby the right-of-use asset is measured at cost, the right-of-use asset is generally depreciated over the lease term using the straight-line method.
- A number of leases, particularly for real estate and barges, include extension and termination options. Extension and termination options are taken into account on recognition of the lease liability only if BASF is reasonably certain that these options will be exercised in the future. When contract terms are being determined, consideration is given to all facts and circumstances that offer an economic incentive for exercising extension options or not exercising termination options. Changes in lease terms arising from the exercise of an extension option or non-exercise of a termination option are only considered when determining lease terms if sufficient certainty exists. Estimates and expectations which are asserted at the commencement date of the lease liability and the right-of-use asset and pertain to future payments not yet determined on the date of provision are assessed continuously during

the lease term. If subsequently improved or changed knowledge influences the expected payment profile over time, the lease liability is remeasured.

- If an existing lease contract is modified, the lease liability and right-of-use asset must be remeasured, provided the modification changes the payment profile (pursuant to the interest and principal plan) or the scope (either quantitatively or time-related) of use of the asset.

The first-time adoption of IFRS 16 at BASF as of January 1, 2019, follows the modified retrospective method, meaning that prior-period information was not restated; this continued to be presented in accordance with IAS 17.

First-time adoption did not have any effect on equity. Lease agreements that were already in place as of December 31, 2018, were not re-assessed. Existing finance leases were not affected.

The application of IFRS 16 increased total assets by around €1.3 billion as of January 1, 2019, due to the addition of right-of-use assets and lease liabilities.

Adjusted opening balances as of January 1, 2019

Million €

	Adjustments due to IFRS 16			Jan. 1, 2019
	Dec. 31, 2018	Addition	Reclassification	
Total assets				
Right-of-use land	–	154	228	382
Right-of-use buildings	–	700	80	780
Right-of-use machinery and technical equipment	–	190	38	228
Right-of-use miscellaneous equipment and fixtures	–	274	59	333
Right-of-use advanced payments and construction in progress	–	–	–	–
Other property, plant and equipment	20,780	–	(405)	20,375
Total	20,780	1,318	–	22,098
Total equity and liabilities				
Equity	36,109	–	–	36,109
Lease liabilities	134	1,287	–	1,421
Total	36,243	1,287	–	37,530

Lease liabilities as of December 31, 2018, included liabilities from finance leases in accordance with IAS 17, which did not change as of January 1, 2019. Assets previously capitalized through finance leases were reclassified to the new balance sheet items for right-of-use assets.

Based on the operating lease commitments as of December 31, 2018, the reconciliation to the opening balance for lease liabilities as of January 1, 2019, was as follows:

Reconciliation of lease liabilities

Million €

Operating lease commitments as of December 31, 2018 ^a	1,338
– Practical expedients for short-term leases	(78)
– Practical expedients for leases for low-value assets	(5)
– Payments for service components of operating lease commitments	(124)
+ Adjustments due to the lease extension option under IFRS 16 (not yet included in operating lease commitments as of December 31, 2018)	187
+/- Other adjustments that increase/decrease lease liabilities	137
Gross lease liabilities as of January 1, 2019 excluding finance leases	1,455
– Discounting	(168)
Present value of lease liabilities as of January 1, 2019 excluding finance leases	1,287
+ Present value of liabilities from finance leases as of December 31, 2018	134
Total present value of lease liabilities as of January 1, 2019	1,421

^a Adjusted for the discontinued oil and gas business

The weighted average incremental borrowing rate used to discount gross lease liabilities was 3.0% as of January 1, 2019.

Other effects on the depreciation expense, the interest result, the statement of cash flows and other indicators such as earnings per share are explained in the relevant notes, provided the effects are material.

BASF presents the interest component of lease payments in cash flows from operating activities and the repayment portion in cash flows from financing activities. Lease payments under short-term agreements, agreements with low-value assets or variable payments are presented in cash flows from operating activities.

BASF as lessee

Lease liabilities

Million €

	December 31, 2019		
	Lease liabilities	Interest portion	Future lease payments
Following year 1	381	30	411
Following year 2	269	27	296
Following year 3	180	21	201
Following year 4	118	18	136
Following year 5	84	14	98
More than 5 years	390	122	512
Total	1,422	232	1,654

Future lease payments as of December 31, 2019 included payments for individual lease contracts from the discontinued construction chemicals business for which associated lease liabilities were transferred to liabilities of the disposal groups in the amount of €3 million.

Expenses and income in the statement of income from leases for BASF as lessee

Million €	2019
Interest expenses for lease liabilities	(39)
Expenses for variable lease payments not included in the measurement of lease liabilities	(13)
Income from sublease agreements	2
Expenses for short-term leases	(189)
Expenses for leases for low-value assets	(7)
Gains and losses from sale and leaseback transactions	30
Total	(216)

BASF Schweiz AG entered a five-year rental contract for a building and various parking lots with the sale of the Klybeck site in 2019. Lease liabilities from this sale and leaseback transaction totaled €8 million as of December 31, 2019 and earnings from the transaction totaled €29 million in 2019.

Liabilities from finance leases

Million €	December 31, 2018		
	Minimum lease payments	Interest portion	Lease liability
Following year 1	47	4	43
Following year 2	28	3	25
Following year 3	24	3	21
Following year 4	17	2	15
Following year 5	8	1	7
More than 5 years	28	5	23
Total	152	18	134

BASF was also a lessee under operating lease contracts in 2018. The resulting lease commitments totaled €1,482 million in 2018 and became due in the following years:

Future minimum payments from operating lease contracts

Million €	Nominal value of future minimum lease payments
	December 31, 2018
Less than 1 year	403
1–5 years	720
More than 5 years	359
Total	1,482

Future minimum payments from operating lease contracts included €144 million for companies in the oil and gas disposal group as of December 31, 2018.

Future minimum lease payments from subleases based on existing agreements amounted to €10 million in 2018.

In 2018, minimum lease payments in the amount of €494 million were included in income from operations. In 2018, conditional lease payments in the amount of €1 million were also included in income from operations. Furthermore, sublease payments in the amount of €4 million were included in income from operations in 2018.

BASF as lessor

BASF acts as a lessor for finance leases to a minor extent only. Receivables on finance leases were €23 million in 2019 (2018: €25 million). The leased assets pertained primarily to buildings and production facilities.

Claims arising from operating leases amounted to €174 million in 2019 (2018: €166 million). There are no material operating leases for property, plant and equipment.

Future lease payments to BASF from operating lease contracts

Million €	Future lease payments (as per IFRS 16)	Nominal value of future minimum lease payments (as per IAS 17)
	December 31, 2019	December 31, 2018
Less than 1 year	22	30
1–5 years	120	75
More than 5 years	32	61
Total	174	166

Income from leases for BASF as lessor

Million €	2019
Income from finance leases	1
of which gains and losses from sales	1
financial income from net investment in the lease	0
income from variable lease payments not included in measurement of net investment	–
Income from operating leases	19
of which income from variable lease payments not dependent upon an index or interest rate	–
Total	20

Other Notes

29 Statement of cash flows and capital structure management

Statement of cash flows

Cash flows from operating activities contained the following payments:

Statement of cash flows

Million €	2019	2018
Income tax payments	1,280	1,981
Interest payments	480	393
Dividends received	315	427

In 2019, interest payments comprised interest payments received of €175 million (2018: €162 million) and interest paid of €655 million (2018: €555 million).

In the first quarter of 2019, BASF SE transferred securities in the amount of €300 million to BASF Pensionstreuhand e.V., Ludwigshafen am Rhein, Germany. This transfer was not cash effective and therefore had no effect on the statement of cash flows.

Cash flows from investing activities included €239 million in payments made for acquisitions (2018: €7,362 million).

Payments of €2,600 million were received for divestitures in 2019 (2018: €107 million). Of material significance was the merger of the oil and gas businesses of Wintershall and DEA in the second quarter of 2019. The effects of the deconsolidation of the Wintershall companies and the simultaneous recognition of the equity-accounted interest in Wintershall Dea GmbH offset each other. The only effect on cash was the outflow of cash and cash equivalents in

the amount of €800 million, as well as the repayment of BASF SE's open finance-related receivables by the Wintershall Dea group and capital decreases at Wintershall Dea GmbH in the total amount of €3.2 billion. In connection with the transfer of the paper and water chemicals business to the Solenis group in the first quarter of 2019, the majority of the purchase price was settled with the contribution of the interest in Solenis UK International Limited (€590 million). The rest of the purchase price (€178 million) was recognized in cash.

Payments made for intangible assets and property, plant and equipment amounted to €3,824 million, €70 million lower than in the previous year.

Cash and cash equivalents consist primarily of cash on hand and bank balances with maturities of less than three months.

Cash and cash equivalents in the amount of €2,455 million reported in the statement of cash flows as of December 31, 2019, consisted of the balance sheet value (€2,427 million) and the values reclassified to the disposal groups for the construction chemicals business (€21 million) and the pigments business (€7 million). Cash and cash equivalents in the amount of €2,519 million reported in the statement of cash flows as of December 31, 2018, consisted of the balance sheet value (€2,300 million) and the value reclassified to the oil and gas business disposal group (€219 million). As in the previous year, cash and cash equivalents were not subject to any utilization restrictions.

For more information on cash flows from acquisitions and divestitures, see Note 2.4 from page 210 onward

For more information on the contribution of discontinued operations on BASF's statement of cash flows, see Note 2.5 from page 215 onward

Reconciliation according to IAS 7 for 2019

Million €	Dec. 31, 2018 ^a		Non-cash-effective changes					Dec. 31, 2019 ^a
		Cash effective in cash flows from financing activities	Acquisitions/divestitures/changes in the scope of consolidation	Currency effects	Additions from lease contracts	Other effects	Changes in fair value	
Financial indebtedness	21,351	(2,633)	(524)	41	–	157	–	18,392
Loan liabilities	541	122	(140)	2	–	1	–	526
Lease liabilities	134	(399) ^b	(107)	7	452	1,391 ^c	–	1,478
Other financing-related liabilities	889	(57)	(455)	1	–	(94)	–	284
Financial and similar liabilities	22,915	(2,967)	(1,226)	51	452	1,455	–	20,680
Assets/liabilities from hedging transactions	65	(375)	–	–	–	–	261	(49)
Total	22,980	(3,342)	(1,226)	51	452	1,455	261	20,631

^a Balances as of December 31, 2019 and 2018 also include contributions reclassified to the disposal group and therefore deviate from balance sheet values.

^b Lease payments totaled €441 million in 2019. The principal component in the amount of €399 million is presented in cash flows from financing activities. BASF reports interest payments in cash flows from operating activities; this amounted to €42 million.

^c This included the effect from the initial application of IFRS 16 in the amount of €1,400 million.

The reconciliation according to IAS 7 breaks down the changes in financial and similar liabilities and their hedging transactions into cash-effective and non-cash-effective changes. The cash-effective changes presented above correspond to the figures in cash flows from financing activities.

Loan liabilities do not contain any interest components.

Only the principal component of **lease liabilities** is shown in cash flows from financing activities. BASF presents the interest component of lease payments in cash flows from operating activities.

Other financing-related liabilities primarily comprise liabilities from accounts used for cash pooling with BASF companies not included in the Consolidated Financial Statements. They are reported in miscellaneous liabilities within the balance sheet item other liabilities that qualify as financial instruments.

The **assets/liabilities from hedging transactions** form part of the balance sheet item derivatives with positive or negative fair values and include only those transactions which hedge risks arising from financial indebtedness and financing-related liabilities secured by micro hedges.

For more information on receivables and miscellaneous assets, see Note 18 from page 249 onward

For more information on liabilities, see Note 24 from page 261 onward

For more information on the statement of cash flows, see the Management's Report from page 56 onward

Capital structure management

The aim of capital structure management is to maintain the financial flexibility needed to further develop BASF's business portfolio and take advantage of strategic opportunities. The objectives of the company's financing policy are to ensure solvency, limit financial risks and optimize the cost of capital.

Capital structure management focuses on meeting the requirements needed to ensure unrestricted access to the capital market and a solid A rating. The capital structure is managed using selected financial ratios, such as dynamic debt ratios, as part of the company's financial planning.

The equity of the BASF Group as reported in the balance sheet amounted to €42,350 million as of December 31, 2019 (December 31, 2018: €36,109 million); the equity ratio was 48.7% on December 31, 2019 (December 31, 2018: 41.7%).

BASF prefers to access external financing on the capital markets. A commercial paper program is used for short-term financing, while corporate bonds are used for financing in the medium and long term. These are issued in euros and other currencies with different maturities. The goal is to create a balanced maturity profile, achieve a diverse range of investors and optimize our debt capital financing conditions.

BASF currently has the following ratings, which were most recently confirmed by Moody's on November 4, 2019 and by Standard & Poor's on November 13, 2019.

Reconciliation according to IAS 7 for 2018

Million €

	Dec. 31, 2017	Cash effective in cash flows from financing activities	Non-cash-effective changes				Dec. 31, 2018 ^a
			Acquisitions/ divestitures/ Changes in the scope of consolidation	Currency effects	Other effects	Changes in fair value	
Financial indebtedness	18,032	3,252	–	56	11	–	21,351
Loan liabilities	376	150	7	8	–	–	541
Lease liabilities	124	(35)	9	1	35 ^b	–	134
Other financing-related liabilities	1,058	(281)	115	(7)	4	–	889
Financial and similar liabilities	19,590	3,086	131	58	50	–	22,915
Assets/liabilities from hedging transactions	(118)	(120)	–	–	–	303	65
Total	19,472	2,966	131	58	50	303	22,980

^a Balances as of December 31, 2018 include contributions reclassified to the disposal group and therefore deviate from balance sheet values.

^b Includes additions from lease contracts

Ratings as of December 31, 2019

	Noncurrent financial indebtedness	Current financial indebtedness	Outlook
Moody's	A2	P-1	stable
Standard & Poor's	A	A-1	stable

The contract with Scope Ratings expired at the beginning of September 2019 and was not extended by BASF.

Ratings as of December 31, 2018

	Noncurrent financial indebtedness	Current financial indebtedness	Outlook
Moody's	A1	P-1	stable
Standard & Poor's	A	A-1	stable
Scope	A	S-1	stable

BASF strives to maintain a solid A rating, which ensures unrestricted access to financial and capital markets.

 For more information on BASF's financing policy, see the Management's Report from page 55 onward

30 Share price-based compensation program and BASF incentive share program

Share price-based compensation program

The BASF Group continued its share price-based compensation program (the long-term incentive (LTI) program) in 2019. The program has been in place since 1999 and approximately 1,100 people, in particular the Board of Executive Directors and senior executives, are currently eligible to participate. It provides for the granting of virtual option rights, which are settled in cash when exercised.

Participation in the LTI program is voluntary. In order to take part in the program, a participant must make a personal investment: A participant must, for a two-year period from the granting of the option (holding period), hold BASF shares amounting to 10% to 30% of his or her individual variable compensation for the previous year. The number of shares to be held is determined by the amount of variable compensation and the volume-weighted average market price for BASF shares on the first trading day after the Annual Shareholders' Meeting, which was €68.21 on May 6, 2019.

The participant receives four option rights per invested share. Each option consists of two parts, right A and right B, which may be exercised if defined thresholds have been met: The threshold of right A is met if the price of the BASF share has increased by more than 30% in comparison with the base price on the option grant date (absolute threshold). The value of right A is the difference between the market price of BASF shares on the exercise date and the base price; it is limited to 100% of the base price. If the cumulative percentage performance of BASF shares exceeds the percentage performance of the MSCI World Chemicals IndexSM (MSCI Chemicals), right B may be exercised (relative threshold). The value of right B is the base price of the option multiplied by twice the percentage by which the BASF share outperforms the MSCI Chemicals Index on the exercise date. It is limited to the closing price on the date of

exercise less the nominal value of the BASF share. From the 2013 LTI program onward, right B may only be exercised if the price of the BASF share equals at least the base price. The options granted as of July 1, 2019 may be exercised between July 1, 2021, and June 30, 2027, following a two-year vesting period. During the exercise period, there are certain times (closed periods) during which the options may not be exercised. Each option can only be exercised in full. This means that one of the thresholds must be exceeded. If the other threshold is not exceeded and the option is exercised, the other option right lapses. A participant's maximum gain from exercising an option is limited to five times the original individual investment starting with the 2013 LTI program. The maximum gain from exercising an option is limited to 10 times the original individual investment for programs from previous years. Option rights are nontransferable and are forfeited if the option holders no longer work for the BASF Group or have sold part of their individual investment before the expiry of the two-year vesting period. They remain valid in the case of retirement. For the members of the Board of Executive Directors, the long-term orientation of the program is significantly strengthened compared with the conditions applying to the other participants. The members of the Board of Executive Directors are required to participate in the LTI program with at least 10% of their actual annual variable compensation. In view of this binding personal investment (in the form of BASF shares), an extended holding period of four years applies. Members of the Board of Executive Directors may only exercise their option rights four years after they have been granted at the earliest (vesting period).

The 2012 to 2018 programs were structured in a similar way to the 2019 LTI program.

The models used in the valuation of the option plans are based on the arbitrage-free valuation model according to Black-Scholes. The fair values of the options are determined using the binomial model.

Fair value of options and parameters used as of December 31, 2019

		LTI program of the year	
		2019	2018
Fair value	€	20.46	10.84
Dividend yield	%	4.75	4.75
Risk-free interest rate	%	(0.34)	(0.41)
Volatility BASF share	%	23.43	23.52
Volatility MSCI Chemicals	%	14.19	14.44
Correlation BASF share price : MSCI Chemicals	%	75.69	75.18

The stated fair values and the valuation parameters relate to the 2019 and 2018 LTI programs. The fair value calculation was based on the assumption that options will be exercised in a manner dependent on their potential gains. For the programs from preceding years, corresponding fair values and valuation parameters were determined/used.

Volatility was determined on the basis of the monthly closing prices over a historical period corresponding to the remaining term of the options.

The number of options granted amounted to 2,099,028 in 2019 (2018: 2,010,720).

As a result of a resolution by the Board of Executive Directors in 2002 to settle option rights in cash, all outstanding option rights under the 2012 to 2019 LTI programs were valued at fair value as of December 31, 2019. A proportionate provision is recognized for programs in the vesting period. The LTI provision increased from €56 million as of December 31, 2018, to €90 million as of December 31, 2019, due to higher fair values of the outstanding option rights. No utilization of provisions was recognized in 2019, whereas in 2018 the utilization of provisions in 2018 amounted to €22 million. Expenses resulting from the addition of provisions amounted to

€34 million in 2019, while income from the release of provisions was recognized in the amount of €268 million in 2018. Of this amount, €1 million was attributable to the disposal group for the discontinued construction chemicals business in 2019 and €6 million for the discontinued oil and gas business in 2018.

The exercisable options had no intrinsic value as of December 31, 2019.

BASF incentive share program

The “plus” incentive share program was introduced in 1999 and is currently available to employees in Germany, other European countries and Mexico. Simultaneous participation in both the “plus” program and the LTI program is not permitted.

Employees who participate in BASF's “plus” incentive share program acquire shares in BASF from their variable compensation. For every 10 BASF shares purchased in the program, a participant receives one BASF share at no cost after one, three, five, seven and 10 years of holding these shares. As a rule, the first and second block of 10 shares entitles the participant to receive one BASF share at no extra cost in each of the next 10 years.

The right to receive free BASF shares lapses if a participant sells the individual investment in BASF shares, if the participant stops working for a Group company or one year after retirement. The number of free shares to be granted has developed as follows:

Number of free shares to be granted

Shares	2019	2018
As of January 1	2,927,843	2,811,447
Newly acquired entitlements	758,255	693,125
Bonus shares issued	(527,170)	(477,395)
Lapsed entitlements	(133,466)	(99,334)
As of December 31	3,025,462	2,927,843

The free shares to be provided by the company are measured at the fair value on the grant date. Fair value is determined on the basis of the BASF share price, taking into account the present value of dividends, which are not paid during the term of the program. The weighted-average fair value on the grant date amounted to €68.21 for the 2019 program, and €85.45 for the 2018 program.

The fair value of the free shares to be granted is recognized as an expense with a corresponding increase in capital reserves over the term of the program.

Personnel expenses for BASF's “plus” incentive share program totaled €33 million in 2019 and €32 million in 2018.

31 Compensation of the Board of Executive Directors and Supervisory Board

Compensation of the Board of Executive Directors and Supervisory Board

Million €

	2019	2018
Non-performance-related and performance-related cash compensation of the Board of Executive Directors	13.3	14.3
Fair value of options granted to the Board of Executive Directors in the fiscal year as of grant date	3.2	4.5
Total compensation of the Board of Executive Directors	16.5	18.8
Service costs for members of the Board of Executive Directors	3.7	6.3
Compensation of the Supervisory Board	3.3	3.3
Total compensation of former members of the Board of Executive Directors and their surviving dependents ^a	11.5	(4.4)
Pension provisions for former members of the Board of Executive Directors and their surviving dependents	198.2	159.5
Guarantees assumed for members of the Board of Executive Directors and the Supervisory Board	–	–

^a Total compensation of former members of the Board of Executive Directors for 2018 includes compensation for Dr. Kurt Bock before pension benefits in the amount of approximately €1.1 million.

The performance bonus is based on the performance of the Board of Executive Directors as a whole and the return on capital employed (ROCE) of the BASF Group. Subject to certain conditions, ROCE is adjusted for special items from acquisitions and divestitures. The conditions for the adjustment of ROCE were not met in 2019.

The members of the Board of Executive Directors were granted 185,692 option rights under the long-term incentive (LTI) program in 2019.

Market valuation of the option rights of active and former members of the Board of Executive Directors resulted in an expense totaling

€3.0 million in 2019. In 2018, option rights led to income in the amount of €28.5 million.

[For more information on the compensation of members of the Board of Executive Directors, see the Compensation Report from page 162 onward](#)

[For more information on the members of the Supervisory Board and Board of Executive Directors, including their memberships on other boards, see page 159 onward](#)

32 Related party transactions

A related party is a natural person or legal entity that can exert influence on the BASF Group or over which the BASF Group exercises control, joint control or a significant influence. In particular, related parties include nonconsolidated subsidiaries, joint ventures and associated companies.

The following tables show the volume of business with related parties that are included in the Consolidated Financial Statements at amortized cost or accounted for using the equity method. The values include sales, receivables, other receivables, liabilities and other liabilities with respect to the disposal groups and/or discontinued operations.

Since February 1, 2019, following the merger of the paper and water chemicals business with Solenis, the resulting sales, receivables and trade accounts payable as well as other liabilities to the Solenis group have been included in associated companies in the following table.

Since May 1, 2019, following the merger of the oil and gas businesses of Wintershall and DEA, the resulting sales as well as receivables and trade accounts payable to Wintershall Dea have been included in joint ventures in the following table.

Sales and trade accounts receivable from and trade accounts payable to related parties mainly included business with own products and merchandise, agency and licensing businesses, and other operating businesses.

Sales to related parties

Million €

	2019	2018
Nonconsolidated subsidiaries	636	530
Joint ventures	617	583
Associated companies	583	380

Trade accounts receivable from / trade accounts payable to related parties

Million €

	Accounts receivable, trade		Accounts payable, trade	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Nonconsolidated subsidiaries	193	175	136	101
Joint ventures	80	91	122	75
Associated companies	129	78	54	42

Other receivables from / liabilities to related parties

Million €

	Other receivables		Other liabilities	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Nonconsolidated subsidiaries	285	247	219	190
Joint ventures	80	284	92	432
Associated companies	57	70	345	271

Sales from subsidiaries to BASF Group companies amounted to €233 million in 2019, and €191 million in 2018. Sales from joint ventures to BASF Group companies amounted to €785 million in 2019, and €543 million in 2018. Sales from associated companies to companies in the BASF Group amounted to €811 million in 2019, and €626 million in 2018.

Other receivables and liabilities primarily arose from financing activities, from accounts used for cash pooling, outstanding dividend payments, profit and loss transfer agreements, and other finance-related and operating activities and transactions.

The decrease in both other receivables and other liabilities to joint ventures was due mainly to other finance-related receivables and/or liabilities to Wintershall companies.

The outstanding balances toward related parties were generally not secured and settled in cash.

The balance of valuation allowances on other receivables from nonconsolidated subsidiaries decreased from €76 million as of December 31, 2018, to €23 million as of December 31, 2019.

By contrast, the balance of valuation allowances on trade accounts receivable from associated companies increased by €1 million as of December 31, 2019. Of this amount, €1 million was also recognized as an expense.

BASF had obligations from guarantees and other financial obligations in favor of nonconsolidated subsidiaries in the amount of €10 million as of December 31, 2019 (December 31, 2018: €6 million), and in favor of associated companies in the amount of €36 million as of December 31, 2019 (December 31, 2018: €17 million).

For more information on off-balance sheet financial obligations in connection with joint ventures, see Note 25 on page 265

Obligations arising from purchase contracts with joint ventures amounted to €4 million as of December 31, 2019, and €3 million as of December 31, 2018.

As of December 31, 2019, the present value of outstanding minimum rental payments for an office building including a parking area payable by BASF SE to BASF Pensionskasse VVaG for the nonterminable basic rental period to 2029 amounted to €86 million.

There were no reportable related party transactions with members of the Board of Executive Directors or the Supervisory Board and their related parties in 2019.

For more information on subsidiaries, joint ventures and associated companies, see the 2019 BASF Group list of shares held on page 219

For more information about defined benefit plants, the division of risk between Group companies, see Provisions for pensions and similar obligations from page 253 onward

For more information on the members of the Board of Executive Directors and the Supervisory Board, see Management and Supervisory Boards and Compensation Report from page 159 onward

33 Services provided by the external auditor

BASF Group companies used the following services from KPMG:

Services provided by the external auditor

Million €

	2019	2018
Annual audit	19.7	21.1
of which domestic	6.8	8.2
Audit-related services	0.7	0.7
of which domestic	0.5	0.5
Tax consultation services	0.2	0.3
of which domestic	–	0.1
Other services	–	–
of which domestic	–	–
Total	20.6	22.1

The services provided by the external auditor mainly include services for the annual audit and, to a lesser extent, confirmation services, tax consultation services and other services.

The line item annual audit relates to expenses for the audit of the Consolidated Financial Statements of the BASF Group, the legally required financial statements of BASF SE and of the subsidiaries and joint operations included in the Consolidated Financial Statements as well as the voluntary audit of subgroups. Fees for other services primarily include project-related audits in connection with regulatory demands as well as other confirmation services.

34 Declaration of Conformity with the German Corporate Governance Code

Declaration pursuant to section 161 of the German Stock Corporation Act (AktG)

The annual Declaration of Conformity with the German Corporate Governance Code according to section 161 AktG was submitted by the Board of Executive Directors and the Supervisory Board of BASF SE in December 2019 and is published online.

For more information, see basf.com/en/corporategovernance

35 Non-adjusting post-balance sheet date events

On January 31, 2020, BASF acquired Solvay's polyamide business. As a result of antitrust legal requirements, Domo Chemicals acquired parts of Solvay's polyamide business, including production plants and innovation competencies in the engineering plastics field in Europe. Following these adjustments to the scope of the transaction, the purchase price on a cash and debt-free basis and excluding other adjustments totaled approximately €1.3 billion. The acquisition includes eight production sites in Germany, France, China, India, South Korea, Brazil and Mexico, as well as research and development and technical consultation centers in Asia and the Americas. BASF plans to integrate the acquired polyamide business from Solvay into the Performance Materials and Monomers divisions.

BASF acquired seven Solvay companies, which are fully consolidated as subsidiaries in BASF's Consolidated Financial Statements as of the closing date of the transaction. From the closing date of the transaction, BASF has included two companies in its Consolidated Financial Statements as joint operations. Furthermore, BASF acquired Solvay's assets associated with each business in four countries directly through local BASF companies. At present, it is not yet possible to provide exact data on the transferred assets or debt or on the goodwill resulting from the transaction. As part of the transaction, Solvay's property, plant and equipment totaling approximately €400 million in value as well as intangible assets, primarily technologies, other rights and customer relationships totaling between €600 million and €700 million were transferred to BASF. The receivables and liabilities considered each amount to approximately €225 million and should more or less offset each other. Debt consists primarily of pension obligations in the mid-double-digit million euro range. Based on pending valuations and analyses, goodwill resulting from the transaction is expected in the low triple-digit million euro range. BASF is financing the acquisition within the scope of its usual financing.

On February 14/15, 2020, a jury in a U.S. Federal District Court awarded \$15 million in compensatory damages against defendants Monsanto Company and BASF Corporation after a trial related to alleged yield losses of a peach farmer in connection with the use of the dicamba herbicide. The jury also found that Monsanto was liable for \$250 million in punitive damages. Finally, the jury found that the defendants were acting in a joint venture and conspiracy. Following the jury's decision, the court is considering whether BASF Corporation is also liable for the punitive damages award against Monsanto because of the joint venture finding. BASF intends to use all legal remedies available and will appeal the decision as to compensatory damages and, if applicable, punitive damages.



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Ten-Year Summary

Million €

	2010	2011	2012 ^a	2013 ^b	2014	2015	2016	2017 ^c	2018	2019
Statement of income										
Sales	63,873	73,497	72,129	73,973	74,326	70,449	57,550	61,223	60,220 ^d	59,316
Income from operations (EBIT)	7,761	8,586	6,742	7,160	7,626	6,248	6,275	7,587	5,974 ^d	4,052
Income before income taxes	7,373	8,970	5,977	6,600	7,203	5,548	5,395	6,882	5,233 ^d	3,302
Income after taxes from continuing operations	–	–	–	–	–	–	–	5,592	4,116 ^d	2,546
Income after taxes from discontinued operations	–	–	–	–	–	–	–	760	863 ^d	5,945
Income after taxes	5,074	6,603	5,067	5,113	5,492	4,301	4,255	6,352	4,979	8,491
Net income	4,557	6,188	4,819	4,792	5,155	3,987	4,056	6,078	4,707	8,421
Income from operations before depreciation and amortization (EBITDA)	11,131	11,993	10,009	10,432	11,043	10,649	10,526	10,765	8,970 ^d	8,036
EBIT before special items	8,138	8,447	6,647	7,077	7,357	6,739	6,309	7,645	6,281 ^d	4,536
Capital expenditures, depreciation and amortization										
Additions to property, plant and equipment and intangible assets	5,304	3,646	5,263	7,726	7,285	6,013	7,258	4,364	10,735	4,097
of which property, plant and equipment	3,294	3,199	4,084	6,428	6,369	5,742	4,377	4,028	5,040	3,842
Depreciation and amortization of property, plant and equipment and intangible assets	3,370	3,407	3,267	3,272	3,417	4,401	4,251	4,202	3,750 ^d	4,146
of which property, plant and equipment	2,667	2,618	2,594	2,631	2,770	3,600	3,691	3,586	3,155 ^d	3,408
Number of employees										
At year-end	109,140	111,141	110,782	112,206	113,292	112,435	113,830	115,490	122,404	117,628
Annual average	104,043	110,403	109,969	111,844	112,644	113,249	111,975	114,333	118,371	119,200
Personnel expenses	8,228	8,576	8,963	9,285	9,224	9,982	10,165	10,610	10,659	10,924
Research and development expenses	1,492	1,605	1,732	1,849	1,884	1,953	1,863	1,843	1,994^d	2,158

^a We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

^b Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

^c Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations. For more information, see the Notes to the Consolidated Financial Statements from page 204 onward.

^d Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations. For more information, see the Notes to the Consolidated Financial Statements from page 204 onward.

Million €

		2010	2011	2012 ^a	2013 ^b	2014	2015	2016	2017 ^c	2018	2019
Key data											
Earnings per share	€	4.96	6.74	5.25	5.22	5.61	4.34	4.42	6.62	5.12	9.17
Adjusted earnings per share	€	5.73	6.26	5.64	5.31	5.44	5.00	4.83	6.44	5.87	4.00
Cash flows from operating activities		6,460	7,105	6,602	8,100	6,958	9,446	7,717	8,785	7,939	7,474
EBITDA margin	%	17.4	16.3	13.9	14.1	14.9	15.1	18.3	17.6	14.9 ^d	13.5
Return on assets	%	14.7	16.1	11.0	11.5	11.7	8.7	8.2	9.5	7.1	4.5
Return on equity after tax	%	24.6	27.5	19.9	19.2	19.7	14.4	13.3	18.9	14.1	21.6
Return on capital employed (ROCE)	%	–	–	–	–	–	–	–	15.4	12.0 ^d	7.7
Appropriation of profits											
Net income of BASF SE ^e		3,737	3,506	2,880	2,826	5,853	2,158	2,808	3,130	2,982	3,899
Dividend		2,021	2,296	2,388	2,480	2,572	2,664	2,755	2,847	2,939	3,030
Dividend per share	€	2.20	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30
Number of shares as of December 31											
	million	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5

^a We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

^b Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

^c Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations. For more information, see the Notes to the Consolidated Financial Statements from page 204 onward.

^d Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations. For more information, see the Notes to the Consolidated Financial Statements from page 204 onward.

^e Calculated in accordance with German GAAP

Balance sheet (IFRS)

Million €

	2010	2011	2012 ^a	2013 ^b	2014	2015	2016	2017 ^c	2018	2019
Intangible assets	12,245	11,919	12,193	12,324	12,967	12,537	15,162	13,594	16,554	14,525
Property, plant and equipment	17,241	17,966	16,610	19,229	23,496	25,260	26,413	25,258	20,780	21,792
Investments accounted for using the equity method	1,328	1,852	3,459	4,174	3,245	4,436	4,647	4,715	2,203	15,008
Other financial assets	1,953	848	613	643	540	526	605	606	570	636
Deferred taxes	1,112	941	1,473	1,006	2,193	1,791	2,513	2,118	2,342	2,887
Other receivables and miscellaneous assets	653	561	911	877	1,498	1,720	1,210	1,332	886	1,112
Noncurrent assets	34,532	34,087	35,259	38,253	43,939	46,270	50,550	47,623	43,335	55,960
Inventories	8,688	10,059	9,581	10,160	11,266	9,693	10,005	10,303	12,166	11,223
Accounts receivable, trade	10,167	10,886	9,506	10,233	10,385	9,516	10,952	10,801	10,665	9,093
Other receivables and miscellaneous assets	3,883	3,781	3,455	3,714	4,032	3,095	3,078	3,494	3,139	3,790
Marketable securities	16	19	14	17	19	21	536	52	344	444
Cash and cash equivalents	1,493	2,048	1,647	1,827	1,718	2,241	1,375	6,495	2,300	2,427
Assets of disposal groups	614	295	3,264	–	–	–	–	–	14,607	4,013
Current assets	24,861	27,088	27,467	25,951	27,420	24,566	25,946	31,145	43,221	30,990
Assets	59,393	61,175	62,726	64,204	71,359	70,836	76,496	78,768	86,556	86,950

^a We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

^b Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

^c As of January 1, 2018, receivables from bank acceptance drafts are no longer reported under trade accounts receivable, but under the item other receivables and other assets. The 2017 figures have been restated accordingly.

Balance sheet (IFRS)

Million €

	2010	2011	2012 ^a	2013 ^b	2014	2015	2016	2017	2018	2019
Subscribed capital	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176
Capital reserves	3,216	3,203	3,188	3,165	3,143	3,141	3,130	3,117	3,118	3,115
Retained earnings	15,817	19,446	23,708	26,102	28,777	30,120	31,515	34,826	36,699	42,056
Other comprehensive income	1,195	314	(3,461)	(3,400)	(5,482)	(3,521)	(4,014)	(5,282)	(5,939)	(4,850)
Noncontrolling interests	1,253	1,246	1,010	630	581	629	761	919	1,055	853
Equity	22,657	25,385	25,621	27,673	28,195	31,545	32,568	34,756	36,109	42,350
Provisions for pensions and similar obligations	2,778	3,189	5,421	3,727	7,313	6,313	8,209	6,293	7,434	7,683
Tax provisions and deferred tax liabilities ^c	2,467	2,628	2,234	2,894	3,420	3,381	3,317	2,731	2,346	2,280
Other provisions ^c	3,352	3,335	2,925	3,226	3,502	3,369	3,667	3,478	1,301	1,340
Financial indebtedness	11,670	9,019	8,704	11,151	11,839	11,123	12,545	15,535	15,332	15,015
Other liabilities	901	1,142	1,111	1,194	1,197	869	873	1,095	705	1,678
Noncurrent liabilities	21,168	19,313	20,395	22,192	27,271	25,055	28,611	29,132	27,118	27,996
Accounts payable, trade	4,738	5,121	4,502	5,153	4,861	4,020	4,610	4,971	5,122	5,087
Provisions	3,324	3,210	2,628	2,670	2,844	2,540	2,802	3,229	3,252	2,938
Tax liabilities	1,140	1,038	870	968	1,079	1,082	1,288	1,119	695	756
Financial indebtedness	3,369	3,985	4,094	3,256	3,545	4,074	3,767	2,497	5,509	3,362
Other liabilities	2,802	3,036	2,623	2,292	3,564	2,520	2,850	3,064	2,998	3,427
Liabilities of disposal groups	195	87	1,993	–	–	–	–	–	5,753	1,034
Current liabilities	15,568	16,477	16,710	14,339	15,893	14,236	15,317	14,880	23,329	16,604
Equity and liabilities	59,393	61,175	62,726	64,204	71,359	70,836	76,496	78,768	86,556	86,950

^a We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

^b Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

^c As of January 1, 2019, tax provisions are no longer reported under other provisions, but under tax provisions and deferred tax liabilities. Figures for 2018 have been restated; no restatement was made for 2017 and earlier.

Glossary and Trademarks

A

Associated companies

Associated companies are entities in which significant influence can be exercised over their operating and financial policies and which are not subsidiaries, joint ventures or joint operations. In general, this applies to companies in which BASF has an investment of between 20% and 50%.

B

Barrel of oil equivalent (BOE)

A barrel of oil equivalent (BOE) is an international unit of measurement for comparing the energy content of different fuels. It is equal to one barrel of crude oil, or 6,000 cubic feet (169 cubic meters) of natural gas.

Biotechnology

Biotechnology includes all processes and products that make use of living organisms, such as bacteria and yeasts, or their cellular constituents.

Breakthrough innovations

Breakthrough innovations are radically new products, applications, processes, services or business models that have a significant potential competitive advantage and a disruptive effect on the market. They can also be achieved by combining individual innovations and existing technologies to create a new, complex system. Breakthrough innovations open up new high-tech fields, markets or industries, generating value added and benefits for society.

C

Capital expenditures (capex)

We define capex as additions to property, plant and equipment excluding additions from acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases.

Carbon management

Carbon management bundles our global activities and a long-term research and development program to reduce our greenhouse gas emissions. The objective is to achieve our climate protection target and set the course for low-carbon chemical production.

CDP

The international nonprofit organization CDP (formerly the Carbon Disclosure Project) analyzes environmental data of companies. The CDP's indexes serve as assessment tools for investors.

Circular economy

The circular economy concept describes the transition away from a linear model of "take-make-dispose" to a system of closed loops powered by renewable energy. Core elements include re-using resources, avoiding waste, using products efficiently, and recycling products at the end of their service life.

CO₂ equivalents

CO₂ equivalents are units for measuring the impact of greenhouse gas emissions on the greenhouse effect. A factor known as the global warming potential (GWP) shows the impact of the individual gases compared with CO₂ as the reference value.

Commercial paper program

The commercial paper program is a framework agreement between BASF and banks regarding the issuing of debt obligations on the financial market (commercial paper). The commercial paper is issued under a rolling program for which the terms can be determined individually. This requires a good rating.

Competency Model

BASF's Competency Model is derived from our corporate strategy and our values and translates these into specific day-to-day behavioral standards. It is applicable worldwide, creating a common framework for the conduct of all BASF employees and leaders to enable us to reach our shared goals. The eight competencies are: Drive Innovation, Collaborate for Achievement, Embrace Diversity, Communicate Effectively, Drive Sustainable Solutions, Develop Self and Others, Act with Entrepreneurial Drive, Demonstrate Customer Focus.

Compliance

Compliance is an important element of corporate governance. It refers to the company's behavior in accordance with laws, guidelines and voluntary codices.

Customers

We understand customers as all external companies (sold-to parties) that had contracts with the BASF Group in the business year concerned under which sales were generated.

D

Dodd-Frank Act

The Dodd-Frank Act issued in 2010 comprises accounting and disclosure obligations for publicly listed U.S. companies regarding the use of certain raw materials that come from the Democratic Republic of the Congo or its bordering countries. The companies must prove that the materials they use do not come from mines in these conflict areas. The definition of conflict minerals as per the Dodd-Frank Act includes the following materials and their derivatives: columbite-tantalite (coltan), cassiterite, wolframite and gold.

Due diligence

An ongoing risk management process to identify and avoid negative impacts on and by a company (for example, through human rights violations in the supply chain).

E**EBIT**

Earnings before interest and taxes (EBIT): At BASF, EBIT corresponds to income from operations.

EBITDA

Earnings before interest, taxes, depreciation and amortization (EBITDA): At BASF, EBITDA corresponds to income from operations before depreciation and amortization (impairments and reversals of impairments).

EBITDA margin

The EBITDA margin is the margin that we earn on sales from our operating activities before depreciation and amortization as a percentage of EBITDA. It is calculated as income from operations before depreciation, amortization, impairments and reversals of impairments as a percentage of sales.

Eco-Efficiency Analysis

The Eco-Efficiency Analysis is a method developed by BASF for assessing the economic and environmental aspects of products and processes. The aim is to compare products with regard to profitability and environmental compatibility.

Emerging markets

We define the emerging markets as Greater China, the ASEAN countries (Brunei, Indonesia, Malaysia, Myanmar, Cambodia, Laos, the Philippines, Singapore, Thailand, Vietnam), India, Pakistan and Bangladesh; Central and South America; eastern Europe; the Middle East, Turkey and Africa.

Equity method

The equity method is used to account for shareholdings in joint ventures and associated companies. Based on the acquisition costs of the shareholding as of the acquisition date, the carrying amount is continuously adjusted to the changes in equity of the company in which the share is held.

European Water Stewardship (EWS) Standard

The European Water Stewardship (EWS) Standard enables businesses and agriculture to assess the sustainability of their water management practices. The criteria are sustainable water abstraction, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes. The EWS standard came into force at the end of 2011 and was developed by nongovernmental organizations, governments and businesses under the direction of the independent organization European Water Partnership (EWP).

Exploration

Exploration refers to the search for mineral resources, such as crude oil or natural gas, in the Earth's crust. The exploration process involves using suitable geophysical methods to find structures that may contain oil and gas, then proving a possible discovery by means of exploratory drilling.

F**Formulation**

Formulation describes the combination of one or more active substances with excipients like emulsifiers, stabilizers and other inactive components in order to improve the applicability and effectiveness of various products, such as cosmetics, pharmaceuticals, agricultural chemicals, paints and coatings.

Free cash flow

Free cash flow is the cash flows from operating activities less payments made for property, plant and equipment and intangible assets.

G**Genome editing**

Genome editing refers to a series of new molecular biological methods to make specific changes in the genome. Naturally occurring processes are used to make small changes to an organism's genes to modify a specific characteristic. Such techniques have great potential for innovative solutions in healthcare, agriculture and industrial applications, for example.

Global Compact

In the United Nations Global Compact network, nongovernmental organizations, companies, international business and employee representatives, scientists and politicians work on aligning global business with the principles of sustainable development.

Global Product Strategy (GPS)

The Global Product Strategy aims to establish global product stewardship standards and practices for companies. The program aims to improve the safety management of chemical substances and to support governments in the introduction of local chemical regulations.

Global Reporting Initiative (GRI)

The Global Reporting Initiative is a multistakeholder organization. It was established in 1997 with the aim of developing a guideline for companies' and organizations' voluntary reporting on their economic, environmental and social activities.

Greenhouse Gas Protocol (GHG Protocol)

The Greenhouse Gas Protocol, used by many companies in different sectors as well as nongovernmental organizations and governments, is a globally recognized standard to quantify and manage greenhouse gas emissions. The reporting standards and recommendations for implementing projects to reduce emissions are jointly developed by companies, nongovernmental organizations and governments under the guidance of the World Resources Institute and the World Business Council for Sustainable Development.

H**Health Performance Index (HPI)**

The Health Performance Index is an indicator developed by BASF to provide more detailed insight into our approach to health management. It comprises five components: confirmed occupational diseases, medical emergency drills, first aid, preventive medicine and health promotion.

I**IAS**

IAS stands for International Accounting Standards.

IFRS

The International Financial Reporting Standards (until 2001: International Accounting Standards, IAS) are developed and published by the International Accounting Standards Board, headquartered in London, United Kingdom. The "IAS Regulation" made the application of IFRSs mandatory for listed companies headquartered in the European Union starting in 2005.

ILO Core Labor Standards

The ILO Core Labor Standards are set out in a declaration of the International Labor Organization (ILO), comprising eight conventions that set minimum requirements for decent working conditions.

ISO 9001

ISO 9001 is an international standard developed by the International Organization for Standardization (ISO) that determines minimum requirements for a quality management system for voluntary certification.

ISO 14001

ISO 14001 is an international standard developed by the International Organization for Standardization (ISO) that determines the general requirements for an environmental management system for voluntary certification.

ISO 19011

ISO 19011 is an international standard developed by the International Organization for Standardization (ISO) that also serves as a guide for auditing management systems, for example for occupational health and safety, energy, quality and environmental management.

ISO 27001

ISO 27001 is an international standard developed by the International Organization for Standardization (ISO) that determines the general requirements for an information security management system for voluntary certification.

ISO 50001

ISO 50001 is an international standard developed by the International Organization for Standardization (ISO) that determines the general requirements for an energy management system for voluntary certification.

J**Joint arrangement**

A joint arrangement refers to joint ventures and joint operations, and describes a jointly controlled arrangement of two or more parties. This arrangement exists if decisions about relevant activities require the unanimous consent of all parties sharing control.

Joint operation

A joint operation is a joint arrangement in which the parties that share control have direct rights to the assets and liabilities relating to the arrangement. For joint operations, the proportional share of assets, liabilities, income and expenses are reported in the BASF Group Consolidated Financial Statements.

Joint venture

A joint venture is a joint arrangement in which the parties that have joint control of a legally independent entity have rights to the net assets of that arrangement. Joint ventures are accounted for using the equity method in the BASF Group Consolidated Financial Statements.

L**Long-term incentive program (LTI)**

The long-term incentive program is a share price-based compensation program primarily for senior executives of the BASF Group and members of the Board of Executive Directors. The program aims to tie a portion of the participants' annual variable compensation to the long-term, absolute and relative performance of BASF shares by making an individual investment in the company's stock.

M**Materiality analysis**

BASF uses a materiality analysis to identify and assess sustainability topics. This takes into account the expectations and demands of external stakeholders, as well as the expertise of members of the Stakeholder Advisory Council and the assessments of our employees from various units. An analysis of various data sources expands on and verifies these findings.

MDI

MDI stands for diphenylmethane diisocyanate and is one of the most important raw materials for the production of polyurethane. This plastic is used for applications ranging from the soles of high-tech running shoes and shock absorbers for vehicle engines to insulation for refrigerators and buildings.

Million British thermal unit (mmBtu)

The British thermal unit (Btu) is a unit of energy observed in the Anglo-American measuring system. It is used for indicating values such as the energy content of gas. One mmBtu (million British thermal units) is equal to approximately 1,003 cubic feet of gas or 28 cubic meters of gas.

Monitoring system

Monitoring systems and tools serve to measure and ensure the adherence to standards. One area that is monitored is our voluntary commitments, such as the adherence to human rights and internationally recognized labor standards.

MSCI World Chemicals Index

The MSCI World Chemicals Index is a stock index that includes the world's biggest chemical companies. It measures the performance of the companies in the index in their respective national currencies, thus considerably reducing currency effects.

N**Nanomaterials**

The International Organization for Standardization defines nanomaterials as materials with one or more external dimensions on a nanoscale or with internal structure or surface structure on a nanoscale. For regulatory purposes, there are additional definitions for nanomaterials worldwide.

Naphtha

Naphtha is petroleum that is produced during oil refining. Heavy naphtha is the starting point for gasoline production. Light naphtha is the most important feedstock for steam crackers.

NMVOC (nonmethane volatile organic compounds)

VOCs (volatile organic compounds) are organic substances that are present in the air as gas at low temperatures. These include some hydrocarbons, alcohols, aldehydes and organic acids. NMVOCs are VOCs from which methane is excluded.

O**OHSAS 18001**

The Occupational Health and Safety Assessment Series (OHSAS) includes the standard OHSAS 18001, which contains a framework for an occupational safety management system. This system can be integrated into an existing quality and environmental protection management system and certified accordingly.

P**Peak sales potential**

The peak sales potential of the Agricultural Solutions pipeline describes the total peak sales generated for individual products in the research and development pipeline. Peak sales are the highest sales value to be expected from one year. The pipeline comprises innovative products that have been on the market since 2019 or will be launched on the market by 2029.

Process safety incidents (PSI)

Process safety incidents (PSI) is a worldwide harmonized industry metric used to report events involving the release of a substance or energy where this exceeds defined thresholds. BASF has used the criteria and reporting thresholds developed by the International Council of Chemical Associations (ICCA) since 2018.

Propylene oxide (PO)

Propylene oxide (PO), a very reactive compound, is generated by the oxidation of propylene and is used as basic chemical for further processing in the chemical industry.

R**REACH**

REACH is a European Union regulatory framework for the registration, evaluation, authorization and restriction of chemicals, and was implemented gradually by 2018. Companies are obligated to collect data on the properties and uses of produced and imported substances and to assess any risks.

Renewable resources

Renewable raw materials are products made from biomass such as sugars, starches and vegetable oils that are not used as food or feed, but as feedstock or to generate warmth, electricity or fuels.

Responsible Care®

Responsible Care® refers to a worldwide initiative by the chemical industry to continuously improve its performance in the areas of environmental protection, health and safety.

Retention

Profits generated can be used in two ways: distribution to shareholders or retention within the company.

ROCE

Return on capital employed (ROCE) is a measure of the profitability of our operations. This is calculated as the EBIT generated by the segments as a percentage of the average cost of capital basis. The average cost of capital basis corresponds to the operating assets of the segments plus the customer and supplier financing not included there and is calculated using the month-end figures.

S**SEEBalance®**

SEEBalance® is the SocioEcoEfficiency analysis developed by BASF. It can be used to evaluate and compare the environmental impact, costs and social aspects of products and manufacturing processes. SEEBalance® makes sustainable development measurable and manageable for companies by combining the three dimensions of sustainability – economy, environment and society – in an integrated product assessment tool.

Special items

Special items arise from the integration of acquired businesses, restructuring measures, impairments, gains or losses resulting from divestitures and sales of shareholdings, and other expenses and income that arise outside of ordinary business activities.

Spot market (cash market)

A spot market is a market where an agreed-upon deal, including delivery, acceptance and payment, occurs immediately, as opposed to forward contracts, where the delivery, acceptance and payment occurs at a point in time after the conclusion of the deal.

Steam cracker

A steam cracker is a plant in which steam is used to “crack” naphtha (petroleum) or natural gas. The resulting petrochemicals are the raw materials used to produce most of BASF's products.

Sustainable Solution Steering

We use Sustainable Solution Steering to review and guide our product portfolio in terms of sustainability. The four categories – Accelerators, Performers, Transitioners and Challenged – indicate how our products and solutions already comply with sustainability requirements and how we can increase their contribution.

T**TCFD**

The Task Force on Climate-related Disclosures (TCFD) established by the G20 Financial Stability Board promotes the disclosure of information and data relevant to climate change by companies, and develops corresponding recommendations. The objective is to improve market participants' understanding of material climate-relevant risks and enable them to better assess the opportunities and risks of climate change. BASF supports the recommendations and is involved in the work of the Task Force.

TDI

TDI stands for toluene diisocyanate and is a raw material for the production of polyurethane. It is used primarily in the automotive industry (for example, in seat cushions and interiors) and the furniture industry (for example, for flexible foams for mattresses or cushioning, or in wood coating).

Tier 1 suppliers

BASF considers all direct suppliers of the BASF Group in the business year concerned as Tier 1 suppliers. These are suppliers that provide us with raw materials, investment goods, consumables and services. Suppliers can be natural persons, companies or legal persons under public law. Suppliers usually work together with other suppliers, which are categorized as Tier 2, Tier 3, etc. based on their role in the value chain.

Together for Sustainability (TfS)

Global initiative of various companies from the chemical industry for the global standardization of supplier evaluations to improve sustainability in the supply chain.

Traits

Traits are commercial plant characteristics, such as an inherent resistance to certain herbicides or an inherent defense against certain insects.

TUIS

TUIS is a German transport accident information and emergency response system jointly operated by around 130 company fire departments within the chemical industry and specialists. The member companies can be reached by the public authorities at any time and provide assistance over the telephone, expert on-site advice or special technical equipment.

V**Value chain**

A value chain describes the successive steps in a production process: from raw materials through various intermediate steps, such as transportation and production, to the finished product.

Value to Society

The Value to Society approach was developed by BASF in cooperation with external experts to measure and assess in monetary terms the economic, ecological, and social impacts of its business activities along the entire value chain.

Verbund

In the BASF Verbund, production facilities and technologies are intelligently networked, with high-output chemical processes that use energy and resources efficiently. The by-products of one plant serve as feedstock elsewhere, creating efficient value chains – from basic chemicals to high value-added solutions such as coatings or crop protection products. Our Verbund concept – realized in production, technologies, the market and digitalization – enables innovative solutions for a sustainable future.

W

Water consumption

We calculate the water consumption of the BASF Group as the sum of evaporation in cooling processes, water content in sales products, and other water use at the sites.

Water stress areas

The most important factors leading to water scarcity are low precipitation and high water abstraction rates. We previously defined water stress areas as areas in which 60% or more of the water available is used by industry, household and agriculture. From 2019 onward, we will expand our definition of water stress areas in accordance with the new Global Reporting Initiative (GRI) standards. In the future, we will report on water stress areas as regions in which 40% or more of available water is used. Our assessment is based on Aqueduct 3.0 (WRI, 2019). Our sustainable water management goal also takes into account all sites that we defined prior to 2019 as sites in water stress areas in accordance with Pfister et al. (2009), as well as the Verbund sites.

Trademarks^a

GT27™

Trademark pending of MS Technologies LLC, West Point, Iowa

Net Promoter System®

Registered trademark of Bain & Company, Inc.

Responsible Care®

Registered trademark of the European Chemical Industry Council

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^a Trademarks are not registered/used in all countries.

Quarterly Statement Q1 2020 / Annual Shareholders' Meeting 2020

April 30, 2020

Half-Year Financial Report 2020

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Quarterly Statement Q3 2020

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BASF Report 2020

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Further information

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BASF supports the chemical industry's global Responsible Care initiative.



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