Annual Report

2022

Science for a **better life**

Five-Year Summary

€ million	2018	2019	2020	2021	2022
Bayer Group financial KPIs					
Sales	36,742	43,545	41,400	44,081	**50,739**
EBITDA[1]	9,695	9,529	(2,910)	6,409	**13,515**
EBITDA before special items[1]	8,969	11,474	11,461	11,179	**13,513**
EBITDA margin before special items[1]	24.4%	26.3%	27.7%	25.4%	**26.6%**
EBIT[1]	3,454	4,162	(16,169)	3,353	**7,012**
EBIT before special items[1]	6,013	6,975	7,095	7,295	**9,257**
Income before income taxes	1,886	2,853	(17,250)	2,046	**4,670**
Net income (from continuing and discontinued operations)	1,695	4,091	(10,495)	1,000	**4,150**
Earnings per share (from continuing and discontinued operations) (€)[1]	1.80	4.17	(10.68)	1.02	**4.22**
Core earnings per share (from continuing operations) (€)[1]	5.60	6.38	6.39	6.51	**7.94**
Free cash flow	4,652	4,214	1,343	1,415	**3,111**
Net financial debt	35,679	34,068	30,045	33,137	**31,809**
Capital expenditures (newly capitalized)	2,368	2,920	3,138	3,004	**3,639**
Return on capital employed (ROCE) (%)	4.0	3.7	–16.5	3.8	**7.7**
Bayer AG					
Total dividend payment	2,611	2,751	1,965	1,965	**2,358**
Dividend per share (€)	2.80	2.80	2.00	2.00	**2.40**
Bayer Group nonfinancial KPIs[2]					
Number of smallholder farmers in low- and middle-income countries supported by products, services and partnerships (million)		42	45	49	**52**
Number of women in low- and middle-income countries who have their need for modern contraception satisfied due to interventions supported by Bayer (million)		38	40	41	**44**
Number of people in underserved[3] communities whose self-care is supported by interventions from Bayer (million)		41	43	46	**49**
Scope 1 and 2 greenhouse gas emissions (million metric tons)		3.76	3.58	3.17	**3.03**
Scope 3 greenhouse gas emissions from relevant categories (million metric tons)		8.82	8.22	7.91	**8.90**
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions in 2030 (million metric tons)		0.00	0.20	0.30	**0.45**
Innovation					
Research and development expenses[4]	5,105	5,301	7,126	5,412	**6,572**
Ratio of R&D expenses to sales – Crop Science (%)[5]	13.0	11.3	10.4	10.5	**10.1**
Ratio of R&D expenses to sales – Pharmaceuticals (%)[5]	15.5	15.6	15.5	16.1	**17.3**
Ratio of R&D expenses to sales – Consumer Health (%)[5]	4.1	3.9	3.8	3.7	**3.6**
Employees					
Number of employees[6] (Dec. 31)	107,894	103,824	99,538	99,637	**101,369**
Personnel expenses (including pension expenses) (€ million)	10,778	11,788	9,769	11,798	**12,619**
Safety & environmental protection					
Recordable Incident Rate (RIR) for Bayer employees	0.40	0.46	0.32	0.38	**0.37**
Process Safety Incident Rate (PSI-R)	–	0.10	0.08	0.08	**0.11**
Total energy consumption (petajoules)	28.9	39.2	35.9	34.8	**35.5**
Energy efficiency (kWh/€1,000)[7]	219	250	241	220	**194**
Hazardous waste generated (thousand metric tons)	303	316	305	316	**276**
Water use (million m³)	42	59	57	55	**53**

2021 figures restated; figures for 2018 – 2020 as last reported

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] For more information see A 1.2.1.

[3] Economically or medically

[4] The increase in R&D expenses in 2020 was mainly due to special charges in connection with impairment charges at Crop Science.

[5] R&D expenses before special items

[6] Employees calculated as full-time equivalents (FTEs)

[7] Quotient of total energy consumption and external sales

Fiscal 2022

Bayer: Significant growth in sales and earnings

// Group sales: €50.7 billion (Fx & p adj. +8.7%)

// EBITDA before special items rises substantially to €13.5 billion (+20.9%), largely driven by exceptionally strong performance at Crop Science

// Pharmaceuticals increases sales and earnings

// Consumer Health maintains dynamic growth

// Core earnings per share advance to €7.94 (+22.0%)

// Net income: €4.2 billion

// Free cash flow increases to €3.1 billion, net financial debt down to €31.8 billion

// Increased dividend of €2.40 per share (+20%) proposed

// New products post significant growth / Encouraging developments in the research pipeline

// Major progress made toward achieving our long-term sustainability targets

// Outlook for 2023: Increase in sales (Fx & p adj.); EBITDA before special items and core earnings per share below exceptionally strong prior year as inflation remains high

Contents

To our Stockholders

A / Combined Management Report

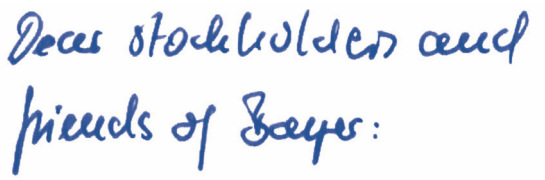
B / Consolidated Financial Statements

C / Compensation Report

D / Further Information

Chairman's Letter

Strong foundations, outstanding prospects: Bayer delivers excellent performance in challenging times



Last year was without doubt a very eventful year, dominated as it was by the war in Ukraine and its repercussions. For many observers, 2022 marked the end of an era, and it is no exaggeration to say that we are living through a time of major upheavals.

Nonetheless, it must also be said that for Bayer, 2022 was a very successful year. In times like these in particular, it is very clear for all to see that the way we are set up with world-leading life science businesses is highly robust, and our innovations are extremely relevant for human health and nutrition, in line with our vision: **Health for all, hunger for none**.

Health and nutrition are without doubt the most pressing issues of our times, and their significance will only increase in the future. The global population passed the eight billion mark last fall and is set to hit almost ten billion by 2050. All these people need to be fed on a sustainable basis. At the same time, there are many diseases that still cannot be treated adequately. What's more, the population is ageing, which is leading to certain diseases becoming more prevalent.

These megatrends show that we are working and conducting research in the right areas. The pandemic had placed healthcare right at the top of the agenda; now the war in Ukraine – one of the world's breadbaskets – has also put global food supplies center stage.

Bayer CEO Werner Baumann

Our staff in Ukraine have done an astonishing job in maintaining the supply of our essential products under the most difficult of conditions. Our workforce is likewise helping wherever it can: for example, with an emergency aid fund and donations of seed products and essential medicines. My sincere thanks go to them all and the entire Bayer team all over the world.

Despite these huge challenges, we were able to deliver outstanding performance in 2022.

A very good year operationally and strategically

Let's look first at what we achieved on an operational level. Our sales increased by 9% last year on a currency- and portfolio-adjusted basis, to €51 billion. EBITDA before special items came in at €13.5 billion, which was a good 20% higher than the prior-year level. Core earnings per share came in at €7.94, up 22% year on year.

We also made clear progress on a strategic level, for instance through the sale of the Environmental Science Professional business, which represented an important milestone for us in our portfolio optimization efforts.

We want you, our stockholders, to share commensurately in last year's commercial success, which is why we have decided on the basis of these results to propose to the Annual Stockholders' Meeting that a dividend of €2.40 per share be paid.

In comparative terms, Bayer's stock performed well last year. It ended the year up and thus significantly outperformed both the DAX and the EURO STOXX 50. Nonetheless, our market capitalization lies well below the actual value of our company, and we will continue to work hard to close this gap.

Another issue that occupied us last year was the Monsanto litigations in the United States, and we are continuing to make progress in resolving these lawsuits. With regard to the glyphosate litigation, for example, we have won the last six trials and are continuing to pursue our five-point plan.

In the US litigations concerning PCBs, we have finalized a class action settlement with about 2,500 cities and municipal government entities and also reached an individual settlement with the US State of Oregon. Monsanto has broad indemnity agreements with its former PCB customers, and we are seeking to enforce our rights. To this end, we have filed a complaint and could potentially reach agreements through discussions.

Above all, however, we are devoting all our energy into charting a course for the future. After all, a new era is dawning in the world of science and technology as well – particularly where the life sciences are concerned. Thanks to cutting-edge data science and artificial intelligence, the worlds of biology and chemistry are converging at an ever faster pace. Organizations that embrace these trends will benefit from fantastic long-term opportunities.

Major progress in the ongoing development of our pipelines

In recent years, we have increasingly been turning our attention to precisely that. Last year, we invested €6.6 billion in research and development – a figure more than 20 percent higher than in the year before. Let us take a closer look at the innovative progress we have made in our three divisions.

At Pharmaceuticals, we have further expanded our development portfolio in the areas of cell and gene therapies. It currently contains seven projects at different stages of clinical development, including programs that address indications where there is a high level of unmet medical need, such as Parkinson's disease, Pompe disease and congestive heart failure.

We also made considerable progress in developing our late-stage pharmaceutical pipeline and our launches of promising medicines. We believe that the major growth drivers in our Pharmaceuticals portfolio currently have a peak sales potential amounting to over €12 billion. They include our Factor XIa inhibitor asundexian, which could potentially prevent the formation of blood clots (thrombosis) and ischemic stroke, our development candidate elinzanetant in women's healthcare, our cancer drug Nubeqa™, and Kerendia™ for the treatment of heart and kidney disease.

In the case of Nubeqa™, we secured approval last year in the United States for an additional indication in patients with a specific type of prostate cancer. Furthermore, Kerendia™ was successfully launched in the United States, Europe and Japan and obtained marketing authorization in China.

The Crop Science Division also made great progress last year in securing approval for new products and launching them onto the market. For example, our latest corn product VT4PRO™ was granted regulatory approval in the United States. It contains several modes of action to protect against pests such as the corn rootworm, which is also known as the "billion-dollar bug" because of the enormous damage it causes.

Our new short-stature corn was able to demonstrate what it can do in the field last year, and is due to be launched onto the North American market shortly. The technology behind it gives the corn better standability, which helps to considerably reduce crop failures caused by extreme weather conditions such as high winds.

We have also further expanded our Crop Science research network. For example, together with the Boston-based biotech company Ginkgo Bioworks, we have restructured our work to develop alternatives to nitrogen fertilizers and innovative approaches to carbon sequestration.

Our majority holding in CoverCress likewise focuses on similar goals. CoverCress has developed a namesake cover crop which helps farmers improve their soil's nutrient quality and carbon sequestration. What's more, the harvested crop serves as a raw material for the production of biofuel, giving farmers an additional source of income.

We also forged ahead with important innovations at Consumer Health last year. In the second half of 2022, we launched Astepro™ Allergy in the United States as an over-the-counter medicine. This antihistamine nasal spray, which was previously only available on prescription, starts working in just 30 minutes. It is the first OTC product of its kind for allergy sufferers

in the United States. Furthermore, we also reinforced our nutritional supplements Berocca™, Redoxon™ and Supradyn™ with a new formulation that supports immunity.

Our Leaps by Bayer impact investment arm is playing an increasingly important role in our work to expand our technological possibilities. Leaps expanded its portfolio with the addition of seven companies last year and participated in a further 15 rounds of financing for already established portfolio companies. Since 2015, we have invested a total of over US$1.7 billion in more than 55 companies through Leaps. Each of these investments has the potential to change established paradigms for the better.

Bayer is system-relevant for achieving climate and sustainability goals

Our work at Bayer has enormous relevance for the world's efforts to achieve the United Nations' Sustainable Development Goals. For example, decarbonization of the food chain can only succeed if we play our part and provide farmers all over the planet with new solutions.

These new solutions will be equally important when it comes to safeguarding the food supply for a growing world population. We have set ourselves ambitious targets and achieved a lot in 2022, as you will discover if you read our Sustainability Report.

We are also making very good progress with our own carbon footprint to make the company carbon-neutral by 2030. For example, we are continuing to invest in climate-smart production facilities. Germany's Federal Chancellor Olaf Scholz attended last year's topping-out ceremony for our new pharmaceuticals facility in Leverkusen, which incorporates a state-of-the-art geothermal system that reduces CO_2 emissions by 70% compared with conventional plants.

Social targets, such as our goal of supporting 100 million smallholder farmers through initiatives that are tailored to their needs, also form part of our sustainability efforts. To do that, we are further expanding our product and service portfolio, with innovative business models and digital solutions for the entire growing system.

Our commitment to sustainability is gaining ever greater recognition. For instance, last year, the ratings agency MSCI upgraded its ESG score for Bayer from "BB" to "A", which represents a key milestone in bolstering our ESG profile.

Extremely well set up for the future

All in all, we can look back on a very successful year. We have delivered outstanding business figures under difficult conditions. We have successfully launched new products and invested extensively in research, innovation and sustainability – and thus in the long-term success of Bayer.

The popular claim that crises often bring opportunities as well as risks has rarely been as accurate as it is right now. We are looking at both sides of the coin. We are mitigating risks by actively taking countermeasures and putting in place preventive measures. More importantly, however, we are also seizing the opportunities with both hands and charting the ideal course to ensure we emerge from the crisis in a stronger position for the future. We are doing that by continuously expanding our technological options, driving change, becoming more digital, sustainable and inclusive, and by continuing to attract and retain the best and most talented employees.

Dear friends and shareholders,

After seven years in charge of Bayer, my term of office will come to an end this year. For 35 years, it has been my pleasure to serve Bayer with dedication and passion. There were major challenges to overcome and we also had to weather some disappointments. Nonetheless, the fact is that Bayer today is built on extremely strong and robust foundations – with world-leading, flourishing life science businesses, highly innovative products for farmers, patients and consumers, and outstanding prospects. We have demonstrated our operational strength as well, with these extremely good results for fiscal 2022.

On June 1, 2023, my successor Bill Anderson will take charge of a company with an excellent strategic set-up and an outstanding, highly motivated workforce. I wish him and the entire Bayer team every success and all the best for the future. I am convinced that on this basis, Bayer has a great future ahead of it.

Thank you once again for your continued support for Bayer.

Sincerely,

Werner Baumann
Chairman of the Board of Management of Bayer AG

Board of Management

Werner Baumann
Chairman

Werner Baumann studied economics in Aachen and Cologne, joining Bayer AG in 1988. After holding positions of increasing responsibility in Spain and the United States, he became a member of the Board of Management of Bayer HealthCare. He was appointed to the Bayer Board of Management in 2010, first as Chief Financial Officer and then as Chief Strategy and Portfolio Officer. Baumann has been Chairman of the Bayer Board of Management since May 2016. Alongside this role, he became Bayer's Chief Sustainability Officer in January 2020.

Wolfgang Nickl
Finance

Wolfgang Nickl studied business administration in Stuttgart and Los Angeles. Following numerous roles in Europe and the United States at Western Digital Corporation, Nickl was appointed Chief Financial Officer in 2010. In 2013, he joined Netherlands-based ASML N.V. as Executive Vice President and Chief Financial Officer. Nickl has been a member of the Bayer Board of Management since April 2018.

Sarena Lin[1]
Chief Transformation and Talent Officer

Sarena Lin studied Computer Science at Harvard University and later received her MBA in Strategy and a master's degree in International Relations from Yale University. She worked at McKinsey from 1998 to 2011 and held roles such as Managing Partner in Taipei as well as Partner in New York. From 2011 to 2017, she worked at Cargill in Minneapolis, United States. She then joined Elanco, where she served as President, Elanco USA as well as Executive Vice President of Corporate Strategy and Global Marketing. She has been a member of Bayer's Board of Management since February 2021.

[1] Labor Director

Rodrigo Santos
Crop Science

Rodrigo Santos studied Agricultural Engineering in São Paulo and received his MBA in Ohio. He joined Monsanto in 1999 and recently served as Chief Operating Officer at Bayer's Crop Science Division. During those years he held different positions in sales, marketing, and strategy, among others, leading organizations in Latin America, Europe and in the United States. Santos has served as a member of the Bayer Board of Management and head of the Crop Science Division since January 2022.

Stefan Oelrich
Pharmaceuticals

Stefan Oelrich joined Bayer as a commercial trainee. After qualifying as a commercial assistant, he held a number of positions of increasing responsibility in Bayer's HealthCare business. In 2011, Oelrich joined Sanofi, where he held numerous roles before being appointed Executive Vice President Diabetes & Cardiovascular in the company's Executive Committee. Oelrich has served as a member of the Bayer Board of Management and head of the Pharmaceuticals Division since November 2018.

Heiko Schipper
Consumer Health

After completing his studies in business economics in Rotterdam, Heiko Schipper acquired experience at Heineken before joining Nestlé in 1996, where he held various sales and marketing roles in Bangladesh, Indonesia and Switzerland. Schipper took on general management roles with increasing responsibility in the Philippines and Greater China. He was later appointed CEO of Nestlé Nutrition and a member of the Nestlé Group Executive Board. Schipper has been a member of the Bayer Board of Management since March 2018.

Report of the Supervisory Board

Dear Shareholders:

During 2022, the Supervisory Board monitored the conduct of the company's business by the Board of Management on a regular basis with the aid of detailed written and oral reports received from the Board of Management, and also acted in an advisory capacity. In addition, the Chairman of the Supervisory Board maintained a constant exchange of information with the Chairman and the other members of the Board of Management. Furthermore, the Chairman of the Supervisory Board and the Chairman of the Audit Committee were regularly in direct contact – including outside the meetings – with the heads of the Law, Patents, Insurance, Compliance and Data Privacy unit, Internal Audit, and the Taxes, Treasury and Accounting unit. In addition, the Chairman of the Audit Committee was regularly in direct contact with the head of the Global Compliance and Data Privacy department. In this way, the Supervisory Board was kept continuously informed about the company's intended business strategy, corporate planning (including financial, investment and human resources planning), earnings performance, the state of the business and the situation in the company and the Group.

Where Board of Management decisions or actions required the approval of the Supervisory Board, whether by law or under the Articles of Incorporation or the rules of procedure, the draft resolutions were inspected by the members at the meetings of the full Supervisory Board, sometimes after preparatory work by the committees, or approved on the basis of documents circulated to the members. The Supervisory Board was involved in decisions of material importance to the company. We discussed at length the business trends described in the reports from the Board of Management and the prospects for the development of the Bayer Group as a whole, the divisions and important markets.

Changes on the Supervisory Board

The employee representatives Dr. Thomas Elsner, Robert Gundlach, Petra Reinbold-Knape, Michael Schmidt-Kießling and Oliver Zühlke stepped down from the Supervisory Board when their respective terms expired at the 2022 Annual Stockholders' Meeting. The other employee representatives were reelected to the Supervisory Board through the employee elections. Dr. Barbara Gansewendt, Francesco Grioli, Claudia Schade, Heinz Georg Webers and Michael Westmeier were newly elected to the Supervisory Board to replace the members who had stepped down. Reiner Hoffmann stepped down from the Supervisory Board effective September 26, 2022. The competent court appointed Yasmin Fahimi, Chairwoman of the German Trade Union Confederation (DGB), to succeed him on the Supervisory Board.

Dr. Fei-Fei Li stepped down from the Supervisory Board effective August 31, 2022, for medical reasons. The competent court appointed Kimberly Mathisen to succeed her. Mathisen has held executive functions in the consumer goods, pharmaceutical and IT industries and currently serves as CEO of an independent nonprofit foundation. She has many years of experience in digitalization and artificial intelligence, technology, branded consumer goods and the pharmaceuticals business, as well as sustainability. Her appointment helps to fulfill the Supervisory Board's stated goals with regard to the expertise and experience of its membership that need to be taken into account when candidates are proposed for appointment as stockholder representatives.

An extensive onboarding program was organized for the new members appointed to the Supervisory Board in 2022, during which they were able to meet individually with the Chairman of the Supervisory Board, the members of the Board of Management and representatives from the second management level to receive information on the company's organizational structure, its strategy, the legal framework for their duties, and the status of the principal litigations, along with additional information depending on their intended committee membership.

Prof. Dr. Norbert Winkeljohann,
Chairman of the Supervisory Board of Bayer AG

Work of the Supervisory Board

The Supervisory Board convened for 13 meetings in 2022, some of which were combined into two- or three-day meeting blocks. The attendance rate of the individual Supervisory Board members at the meetings of the Supervisory Board and its committees is disclosed at the end of this Report.

The members of the Board of Management generally attended the meetings of the Supervisory Board. However, the Supervisory Board also met regularly without the Board of Management or with only the Chairman of the Board of Management present. Each ordinary meeting formally includes an "executive session" as a separate agenda item, during which no Board of Management members are present. Starting in the fourth quarter, the Audit Committee meetings now also include executive sessions that involve the Audit Committee consulting with the auditor without the presence of the Board of Management.

The employee representatives and the stockholder representatives each held preparatory discussions prior to the ordinary meetings of the Supervisory Board.

The deliberations of the Supervisory Board in 2022 primarily related to Bayer's strategy, portfolio and business activities, along with the composition of the Supervisory Board and Board of Management. The work of the Supervisory Board focused on the following areas in particular, each of which was discussed at multiple meetings: (1) individual corporate acquisitions and divestments; (2) material litigations, including in particular those involving glyphosate and PCBs, which the full Supervisory Board and also the Audit Committee dealt with intensively; (3) the effects of the war in Ukraine on the workforce and business activities in Ukraine and Russia; (4) matters relating to Board of Management compensation and compensation reporting, which the Supervisory Board and also the Human Resources and Compensation Committee dealt with in detail; and (5) the succession planning for the Chairman of the Board of Management, which the Supervisory Board and the Human Resources and Compensation Committee dealt with in depth at several meetings. Outside of the meetings of the Supervisory Board and the respective committees, these issues were also the subject of in-depth dialogue between the Chairman of the Supervisory Board and the Chairman of the Board of Management, as well as further members of the Board of Management.

At its individual meetings, the Supervisory Board focused mainly on the following topics and passed the following written resolutions:

1. At the February meetings, the Supervisory Board addressed the 2021 Annual Report, the Compensation Report and the Notice of the 2022 Annual Stockholders' Meeting. It dealt with the regular risk report and discussed matters relating to Board of Management compensation, including in particular target attainment and the short-term variable compensation of the members of the Board of Management for 2021 along with the targets for 2022. In addition, the Supervisory Board adopted a resolution on the refinancing of a hybrid bond.

2. At an extraordinary meeting in March, the Supervisory Board approved the planned divestment of Crop Science's Environmental Science Professional business following an extensive discussion.

3. In March, the Supervisory Board adopted a resolution as part of a written procedure to issue a joint statement with the Board of Management regarding a countermotion for the Annual Stockholders' Meeting.

4. At an extraordinary meeting in April, the Supervisory Board dealt with critical statements by stockholders ahead of the Annual Stockholders' Meeting.

5. At another extraordinary meeting in April, the Supervisory Board discussed the situation of the employees in Ukraine and the business situation in Ukraine and Russia against the backdrop of the war in Ukraine. The Supervisory Board also dealt with the results of an investor study it had commissioned and the findings of analysis conducted by an external corporate consulting firm that had examined the Group and divisional strategies, as well as their impact on Bayer's rating and any possible strategic conclusions to be drawn. These matters were initially discussed together with the members of the Board of Management, and then also in detail during an executive session.

6. At its ordinary meeting in April prior to the Annual Stockholders' Meeting, the Supervisory Board discussed the business performance in the year to date, focusing particularly on the effects of the war in Ukraine and the ongoing glyphosate and PCB litigations. In addition, the Supervisory Board approved the acquisition of Natsana, a leading supplier of high-quality nutritional products, and dealt with matters relating to the upcoming Annual Stockholders' Meeting.

7. At the inaugural meeting of the newly composed Supervisory Board following the Annual Stockholders' Meeting, the Supervisory Board elected Heike Hausfeld as Vice Chairwoman and held elections for the committees.

8. By way of a written resolution in May, the Supervisory Board approved the implementation of a financing transaction.

9. At a meeting in June, the Supervisory Board dealt with the events of the Annual Stockholders' Meeting, particularly the Compensation Report being rejected by the Annual Stockholders' Meeting, and discussed the course of action to take. As a first step, this would involve holding discussions with major investors to gain a better understanding of the reasons why the Compensation Report had been rejected. As a second step, external compensation consultants would be brought on board to discuss the implications for compensation reporting and the target-setting process, including the role of the Human Resources and Compensation Committee, as well as potential changes to the Board of Management compensation system. In addition, the Supervisory Board once again discussed the situation in Ukraine and Russia, as well as the status of the glyphosate and PCB litigations, and approved the planned conclusion of a settlement with the US state of Oregon as part of the PCB litigations. The Supervisory Board also dealt with the planned divestment of the business with Nebido, a long-acting injectable testosterone replacement therapy. The Supervisory Board approved the planned divestment in principle and delegated responsibility for approving the details of the divestment, which at the time of the Supervisory Board resolution were not yet finalized, to the Presidial Committee.

10. During an executive session in July, the Supervisory Board dealt once again with the glyphosate and PCB litigations, focusing on the most recent developments in these lawsuits. The Supervisory Board commissioned a legal review examining the Board of Management's duty of care obligations as part of the Monsanto acquisition with respect to the due diligence performed on the potential legal risks stemming from the PCB litigations.

11. By way of a written resolution in July, the Supervisory Board approved the acquisition of a majority interest in CoverCress, an agricultural technology company that has developed a novel winter oil plant, and options to purchase the remaining shares at a later point in time.

12. In September, the Supervisory Board held meetings on three consecutive days in St. Louis, Missouri, where the US Crop Science business is headquartered. At these meetings, the Supervisory Board discussed the status of the project to select a successor to the Chairman of the Board of Management, which had commenced in mid-2022, during an executive session. Likewise during the executive session, the Supervisory Board also dealt with the results of the investor conversations held in the wake of the Compensation Report having been rejected by the Annual Stockholders' Meeting, and addressed the conclusions drawn from these conversations. Further agenda items included a report on Bayer's US business and a detailed discussion of the Group and divisional strategies along with the communications strategy. The Supervisory Board also dealt in detail with the status of the various litigations, and especially the glyphosate and PCB litigations. Together with John H. Beisner, the independent legal advisor to the Supervisory Board, it deliberated on how the status and development of the litigations were to be assessed and also discussed the results of the legal review examining the appropriateness of the due diligence conducted prior to the Monsanto acquisition with respect to the legal risks related to PCBs. This expert opinion had confirmed the appropriateness of the due diligence performed, and thus that the Board of Management had fulfilled its duty of care obligations. Finally, the Supervisory Board dealt with the status of the Bayer 2022 transformation program and corporate financing. In conjunction with the meetings, the Supervisory Board toured the Crop Science research facilities at the St. Louis site, received a report on the division's innovation pipeline, and met with executives based at that location.

13. By way of a written resolution in December, the Supervisory Board reapproved the planned settlement agreement with the US state of Oregon as part of the PCB litigations following the negotiation of further adjustments.

14. At its December meeting, the Supervisory Board again dealt in detail with the search for a successor to the Chairman of the Board of Management as part of an executive session. The Supervisory Board once again extensively discussed the conclusions drawn from the Compensation Report having been rejected by the Annual Stockholders' Meeting. These included expanding the Human Resources and Compensation Committee and significantly increasing its involvement in reviewing the targets, along with the monitoring of Board of Management compensation on an ongoing basis. Finally, the Supervisory Board adopted its regular resolution on the adjustment of the pensions of the former members of the Board of Management. The Supervisory Board discussed and approved the operational planning for 2023 and the scope of Bayer's external financing. It approved the extended scope of a capital expenditure project in the United States and received an update on progress in the areas of transformation and talent development. At this meeting, the Supervisory Board additionally resolved on the awarding of the audit contract for the Compensation Report, the amendment of the Supervisory Board's rules of procedure, and the declaration of compliance with the German Corporate Governance Code. It also held committee elections. In conjunction with the meeting, the Supervisory Board toured the Crop Science research facilities at the Monheim site and met with executives based there.

15. By way of a written resolution in December, the Supervisory Board approved a capital expenditure project designed to simplify and standardize the most important corporate processes and how they are mapped in IT processes.

Committees of the Supervisory Board

In 2022, the Supervisory Board had a Presidial Committee, an Audit Committee, a Human Resources and Compensation Committee, a Nominations Committee, an Innovation Committee and an ESG Committee.

The current membership of the committees is shown in the "Further Information" section under "Governance Bodies."

The meetings and decisions of the committees, and especially the meetings of the Audit Committee, were prepared on the basis of reports and other information provided by the Board of Management. Reports on the committee meetings were presented at the meetings of the full Supervisory Board.

Presidial Committee: This comprises the Chairman and Vice Chairwoman of the Supervisory Board along with a further stockholder representative and a further employee representative. The Presidial Committee serves primarily as the mediation committee pursuant to the German Codetermination Act. It has the task of submitting proposals to the Supervisory Board on the appointment of members of the Board of Management if the necessary two-thirds majority is not achieved in the first vote at a full Supervisory Board meeting. In addition, certain decision-making powers in connection with capital measures, including the power to amend the Articles of Incorporation accordingly, have been delegated to this committee. The Supervisory Board can also delegate certain responsibilities to the Presidial Committee on a case-by-case basis. Furthermore, the Presidial Committee may undertake preparatory work for meetings of the full Supervisory Board.

No meeting of the Presidial Committee had to be convened in 2022. In June, the Presidial Committee approved the exact terms of the divestment of the Nebido business as part of a written procedure, after having been delegated this task by the full Supervisory Board.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of this committee, Horst Baier, satisfies the statutory requirements concerning expertise in the field of accounting, and Supervisory Board Chairman Norbert Winkeljohann, who is also a member of this committee, satisfies the requirements concerning expertise in the field of auditing. The Audit Committee meets regularly four times a year.

Its tasks include, in particular, examining the financial reporting and monitoring the financial reporting process, the effectiveness and appropriateness of the internal control system and the risk management system, the effectiveness of the internal audit system, the compliance system and the audit of the financial statements. It also addresses relevant topics in the tax, finance and treasury areas. The Audit Committee prepares the resolutions of the Supervisory Board concerning the financial statements and management report of Bayer AG, the proposal for the use of the distributable profit, the consolidated financial statements and the management report of the Bayer Group (including the mandatory CSR reporting). Further tasks include holding discussions with the Board of Management on the half-year financial reports and any quarterly reports or quarterly statements to be issued prior to their publication. This committee prepares the auditor selection process and submits a reasoned proposal to the Supervisory Board regarding the appointment of the auditor. It also prepares the agreements with the auditor (dealing in particular with the awarding of the audit contract, the determination of the main areas of focus for the audit and the audit fee agreement) and takes appropriate measures to determine and monitor the auditor's independence. The Audit Committee regularly assesses the quality of the audit and resolves on the approval of any other contracts awarded to the auditor, paying special attention to any potential implications for the auditor's independence. The Audit Committee also discusses the assessment of the audit risk, the audit strategy and audit planning, and the audit results with the auditor. Furthermore, the Chairman of the Audit Committee regularly discusses the progress of the audit with the auditor and reports on this topic to the committee.

In addition, the Audit Committee monitors the internal process for assessing whether transactions with related parties are executed in the ordinary course of business and on market terms. It resolves on behalf of the Supervisory Board on the approval of related-party transactions pursuant to Sections 111a to 111c and Section 107 of the Stock Corporation Act where such transactions require Supervisory Board approval and the Supervisory Board has not entrusted the approval decision to any other committee.

The Chairman of the Board of Management and the Chief Financial Officer regularly attended the meetings of the Audit Committee. Representatives of the auditor were also present at all the meetings and reported in detail on the audit work and the audit reviews of the half-year report and quarterly statements. Starting in the fourth quarter, the Audit Committee now regularly consults with the auditor at each ordinary meeting without the presence of the Board of Management.

The Audit Committee discussed developments in the area of corporate compliance and the latest reports from Internal Audit at each of its meetings, where necessary.

The individual Audit Committee meetings also focused mainly on the following topics:

1. At the February meeting, the Audit Committee discussed the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group. It also carefully considered the risk report, which covers the risk early warning system and other aspects, and the report on the internal control system (ICS). The Audit Committee also dealt with the yearly compliance report and the developments in compliance and legal cases. Other topics were the yearly report by Internal Audit, a report on the company's insurance situation, and a report on the procedure for recording related-party transactions.

2. The May meeting focused on the quarterly statement for the first quarter. The Audit Committee also dealt with the quality of the audit of the financial statements and the main areas of focus for the audit of the annual financial statements.

3. At an extraordinary meeting in July, the Audit Committee dealt extensively with the status of the PCB litigations, the other material litigations and their financial assessment, and how to account for the special developments in the second quarter in the financial market communication.

4. At its August meeting, the Audit Committee dealt with the half-year report and the business performance at Pharmaceuticals. The committee also discussed the effectiveness and further development of the risk management system and the internal control system for financial reporting. In addition, current developments relating to ESG reporting were addressed. Finally, the Audit Committee discussed the yearly report of the tax function at the meeting.

5. At its November meeting, the Audit Committee extensively discussed the quarterly statement for the third quarter and deliberations concerning the further development of the structure of the Group's holdings. Other topics were the audit planning by Internal Audit, the yearly report of the treasury function including the audit conducted pursuant to Section 32 of the German Securities Trading Act (WpHG) (EMIR), and the audit budget for the auditor of the financial statements for 2023. Finally, the Audit Committee discussed the topics of data security and cyber security at the meeting and also addressed the current status and a simulation of the variable compensation of the Board of Management for 2022.

Human Resources and Compensation Committee: The Human Resources and Compensation Committee has parity of representation between stockholders and employees. At the beginning of the year, it consisted of the Chairman of the Supervisory Board and three other Supervisory Board members. In December, the Supervisory Board expanded this committee to six members while maintaining parity of representation and changed its name to the Human Resources and Compensation Committee (previously: Human Resources Committee). In December, the Vice Chairwoman of the Supervisory Board and the Chairman of the Audit Committee were elected as additional members of this committee. The Human Resources and Compensation Committee prepares the personnel decisions of the full Supervisory Board, which resolves on appointments or dismissals of members of the Board of Management, and monitors the development of Board of Management compensation on an ongoing basis. The committee resolves on behalf of the Supervisory Board on the service contracts of the members of the Board of Management. However, it is the task of the full Supervisory Board to resolve on the total compensation of the individual members of the Board of Management, the respective compensation components and the compensation system, as well as to regularly review the compensation system on the basis of recommendations submitted by the Human Resources and Compensation Committee. The Human Resources and Compensation Committee also discusses the long-term succession planning for the Board of Management.

The Chairman of the Board of Management regularly attended the meetings of the Human Resources and Compensation Committee where the matters discussed did not relate to him personally (including the succession planning for the CEO position).

The Human Resources and Compensation Committee convened for four meetings. In each case, the meetings involved deliberations and the adoption of resolutions relating to the compensation of the Board of Management and the service contracts of Board of Management members, as well as compensation reporting. The Human Resources and Compensation Committee also dealt in depth with the succession planning for the CEO position and the conclusions drawn from the Compensation Report having been rejected by the Annual Stockholders' Meeting, the target-setting and performance evaluation processes, and the Board of Management compensation system.

Nominations Committee: This committee carries out preparatory work when an election of stockholder representatives to the Supervisory Board is to be held. It suggests suitable candidates for the Supervisory Board to propose to the Annual Stockholders' Meeting for election. The committee comprises the Chairman of the Supervisory Board, who serves as its chairman, and three further stockholder representatives.

The Nominations Committee convened twice in 2022. At a meeting in January, it resolved – without the members in question voting on the resolution – to recommend to the Supervisory Board that Dr. Paul Achleitner, Dr. Norbert Bischofberger, and Colleen A. Goggins be proposed to the Annual Stockholders' Meeting for reelection to the Supervisory Board. At a meeting in August, the committee resolved to recommend to the competent court that Kimberly Mathisen be appointed to succeed Dr. Fei-Fei Li, who stepped down from the Supervisory Board for medical reasons.

Innovation Committee: The Innovation Committee is primarily concerned with the innovation strategy and innovation management, the strategy for the protection of intellectual property, and major research and development programs at Bayer. Within its area of responsibility, the committee advises and oversees management and prepares any Supervisory Board decisions to be made. The Committee comprises the Chairman of the Supervisory Board and seven other members of the Supervisory Board, with parity of representation between stockholder and employee representatives. The meetings of the Innovation Committee are regularly attended by the Chairman of the Board of Management, as well as by further members of the Board of Management depending on the topics for discussion.

The Innovation Committee convened twice in 2022.

1. At its meeting in February, it dealt with the outlook for research, development and innovation in the Pharmaceuticals Division.

2. At its meeting in May, the Innovation Committee dealt with transformative RNA-based strategies and discussed their significance for the individual divisions and for Leaps by Bayer.

ESG Committee: Established at the beginning of 2022, the ESG Committee consists of the Chairman of the Supervisory Board and seven other members, with parity of representation between stockholders and employees. It deals with sustainable corporate governance and the company's business activities in the areas of environmental protection, social issues and corporate governance (ESG). This mainly pertains to the way sustainability is incorporated into the business strategy; the establishment of sustainability targets; nonmandatory ESG reporting and the auditing thereof, if applicable; opportunities and risks; and organizational structures and processes in ESG areas, provided the Audit Committee is not already responsible for these matters. Within its area of responsibility, the committee advises and oversees the management and prepares any Supervisory Board decisions to be made.

The ESG Committee convened twice in 2022:

1. At its first meeting in February, the committee initially dealt with how it would go about its duties in the future. It then discussed Bayer's sustainability performance in 2021, as well as ESG benchmarks and controversies, and looked ahead to the ESG priorities for 2022.

2. At its meeting in August, the committee discussed the Bayer Sustainability Council's focal topics for 2022 with the Co-Chairs of that body. The committee discussed the status of the sustainability targets, benchmarks and strategies, and dealt in depth with Bayer's contribution to climate protection.

In June, the Supervisory Board conducted a training session focused on digitalization and its impact on Bayer. This was the first of a three-part series of training sessions dealing with these issues.

Corporate governance

The Supervisory Board considered the principles of corporate governance at Bayer. In particular, at its December meeting, it dealt with the declaration of compliance with the German Corporate Governance Code and resolved to amend its rules of procedure. During Supervisory Board meetings, the Chairman of the Supervisory Board also summarized the dialogue he had engaged in with investors during investor discussions in September and October concerning Board of Management compensation and compensation reporting, as well as during a number of individual conversations.

Disclosure of meeting participation on an individual basis

The members' attendance rate in the meetings of the full Supervisory Board and the committees was 92%. This was largely attributable to the long-term illness of one member of the Supervisory Board. The attendance rate of the other Supervisory Board members was just under 95%.

In view of the special circumstances relating to the COVID-19 pandemic and as part of an endeavor to hold the meetings in more contemporary and sustainable formats, the meetings in 2022 took place not only as in-person meetings, but also as virtual meetings via video-conferencing or as in-person meetings with the option of participation in virtual form (hybrid meetings). None of the meetings took place as a telephone conference call. The participation of the individual Supervisory Board members in the meetings of the Supervisory Board and its committees is shown below:

	Supervisory Board		Audit Committee		Human Resources and Compensation Committee		Innovation Committee		ESG Committee		Nominations Committee	
Number of meetings/ participation rate (%)	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Prof. Dr. Norbert Winkeljohann Chairman	13/13	100%	5/5	100%	4/4	100%	2/2	100 %	2/2	100%	2/2	100 %
Heike Hausfeld Vice Chairwoman	11/13	85%	3/4 since April 2022	75%	1/1 until April 2022	100%	0/1 since April 2022	100%	2/2	100%		
Dr. Paul Achleitner	12/13	92%			1/1 until April 2022	100%			2/2	100%	1/1 since April 2022	100%
Dr. Simone Bagel-Trah	13/13	100%			3/3 since April 2022	100%					2/2	100%
Horst Baier	13/13	100%	5/5	100%								
Dr. Norbert W. Bischofberger	12/13	92%					2/2	100%				
André van Broich	12/13	92%			3/4	75%	2/2	100%	2/2	100%		
Ertharin Cousin	13/13	100%					2/2	100%	2/2	100%		
Dr. Thomas Elsner (until April 2022)	6/6	100%	1/1	100%								
Yasmin Fahimi (since October 2022)	1/1	100%										
Dr. Barbara Gansewendt (since April 2022)	7/7	100%	4/4	100%								
Colleen A. Goggins	13/13	100%							2/2	100%	2/2	100%
Francesco Grioli (since April 2022)	7/7	100%										
Robert Gundlach (until April 2022)	5/6	83%					1/1	100%				
Reiner Hoffmann (until October 2022)	11/12	92%							1/1	100%		
Fei-Fei Li (until August 2022)	0/9	0%										
Frank Löllgen	10/13	77%	5/5	100%			1/2	50%				
Kimberly Mathisen (since September 2022)	4/4	100%										
Petra Reinbold-Knape (until April 2022)	6/6	100%										
Andrea Sacher	13/13	100%			3/3 since April 2022	100%	1/1 since April 2022	100%	1/1 until April 2022	100%		
Claudia Schade (since April 2022)	7/7	100%										
Michael Schmidt-Kießling (until April 2022)	6/6	100%										
Heinz Georg Webers (since April 2022)	7/7	100%							1/1	100%		
Alberto Weisser	10/13	77%	5/5	100%							1/1 since April 2022	100%
Michael Westmeier (since April 2022)	7/7	100%										
Prof. Dr. Otmar D. Wiestler	12/13	92%					2/2	100%				
Oliver Zühlke (until April 2022)	6/6	100%	1/1	100%			1/1	100%	1/1	100%		

Financial statements and audits

The financial statements of Bayer AG were prepared according to the requirements of the German Commercial Code and Stock Corporation Act. The consolidated financial statements of the Bayer Group were prepared according to the International Financial Reporting Standards (IFRS) as endorsed by the European Union. The applicable further requirements of Section 315a

of the German Commercial Code were also taken into account. The combined management report was prepared according to the German Commercial Code.

The auditor, Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Munich, has audited the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. The auditor responsible for the audit was Michael Mehren. The conduct of the audit is explained in the auditor's reports. The auditor finds that Bayer has complied, as appropriate, with the German Commercial Code, the German Stock Corporation Act and/or the International Financial Reporting Standards endorsed by the European Union, and issues an unqualified opinion on the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. The financial statements of Bayer AG, the consolidated financial statements of the Bayer Group, the combined management report and the audit reports were submitted to all members of the Supervisory Board. They were discussed in detail by the Audit Committee and at a meeting of the full Supervisory Board. The auditor submitted a report on both occasions and was present during the discussions.

We examined the financial statements of Bayer AG, the proposal by the Board of Management for the use of the distributable profit, the consolidated financial statements of the Bayer Group and the combined management report. While examining the combined management report, we also examined in particular the nonfinancial statement, which is fully integrated into the management report and was also examined by the auditor. We have no objections, thus we concur with the result of the audit.

We have approved the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group prepared by the Board of Management. The financial statements of Bayer AG are thus confirmed. We are in agreement with the combined management report and, in particular, with the assessment of the future development of the enterprise. We also concur with the dividend policy and the decisions concerning earnings retention by the company. We assent to the proposal by the Board of Management for the use of the distributable profit, which provides for payment of a dividend of €2.40 per share and the allocation of the remaining amount to other retained earnings.

The Supervisory Board would like to thank the Board of Management and all employees for their dedication and hard work in 2022.

Leverkusen, February 24, 2023

For the Supervisory Board

Prof. Dr. Norbert Winkeljohann
Chairman

Investor Information

Positive performance in a challenging environment

2022 was a challenging year for major equity markets due to increasing inflation, rising interest rates, recessionary concerns and the effects of Russia's war in Ukraine for Europe in particular. By the end of the year, the DAX had lost approximately 12% and the EURO STOXX 50 had declined by almost 10%.

In this difficult environment, the Bayer share consistently outperformed both indices, closing the year with a plus of 3%. Including the dividend of €2.00, paid at the beginning of May, this represented a total return of 6% and an outperformance of around 19 percentage points compared to the DAX. The share price developed particularly strongly at the beginning of the year, gaining up to 47% against declining markets and reaching its high of €67.73 in mid-April. In the second half of the year, the share price showed a higher correlation to the general market development, closing the year at €48.33.

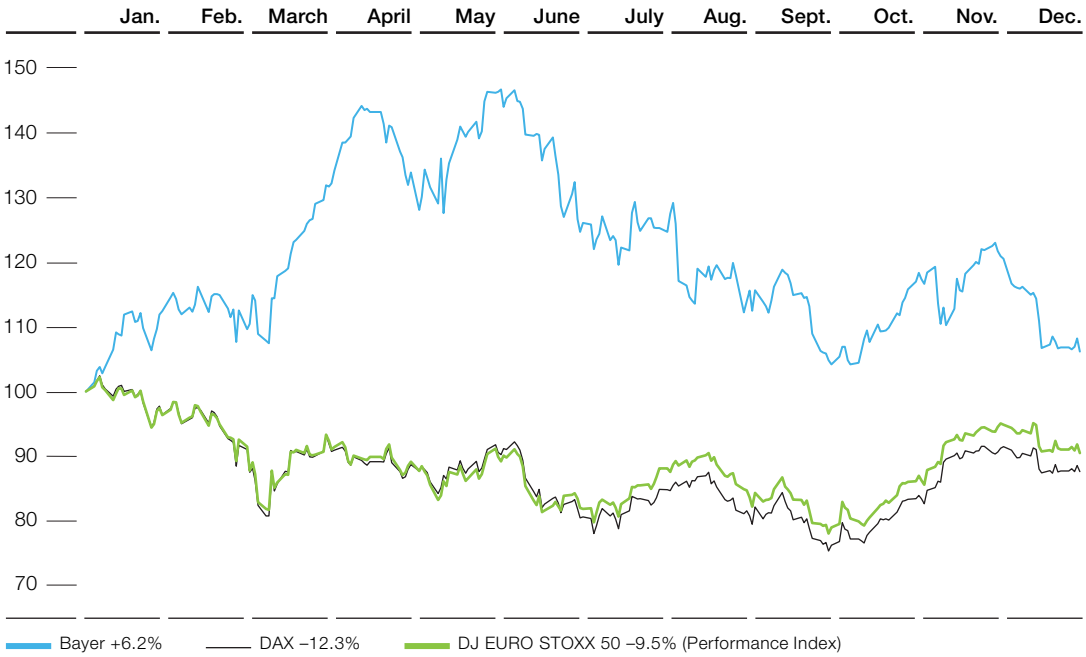
In regard to business performance, our nutrition- and health-focused portfolio proved its resilience in a tough environment, and we exceeded the core earnings per share guidance that we had upgraded in August. We were able to compensate significant cost inflation with pricing leverage in our Crop Science and Consumer Health businesses. While our Pharmaceuticals Division has limited pricing flexibility, we saw promising pipeline results and increasing growth contributions from our launch products in 2022.

Sell-side analysts viewed the Bayer stock more positively in 2022 compared to 2021. The average target price was €77.30 (as of the end of December 2022) compared to €64.80 a year earlier. Of the 23 analyst recommendations at the end of the year, 18 were positive, 5 were neutral and none was negative.[1]

1

Performance of Bayer Stock in 2022

Indexed; 100 = Xetra closing price on December 31, 2021



[1] Source: VARA Research (Bayer does not assume any responsibility for these studies nor for any recommendations or assessments made as part of such studies)

2

Bayer Stock Data

		2021	2022
Earnings per share from continuing and discontinued operations	€	1.02	4.22
Core earnings per share from continuing operations[1]	€	6.51	7.94
Free cash flow per share	€	1.44	3.17
Equity per share	€	33.76	39.62
Dividend per share	€	2.00	2.40
Year-end price[2]	€	47.00	48.33
High for the year[2]	€	57.30	67.73
Low for the year[2]	€	44.26	47.68
Total dividend payment	€ million	1,965	2,358
Number of shares entitled to the dividend (Dec. 31)	million shares	982.42	982.42
Market capitalization (Dec. 31)	€ billion	46.2	47.5
Average daily share turnover on German stock exchanges	million shares	3.3	3.4
Price/EPS[2]		46.2	11.2
Price/core EPS[2]		7.2	6.1
Price/free cash flow[2]		32.6	15.2
Dividend yield[2]	%	4.3	5.0

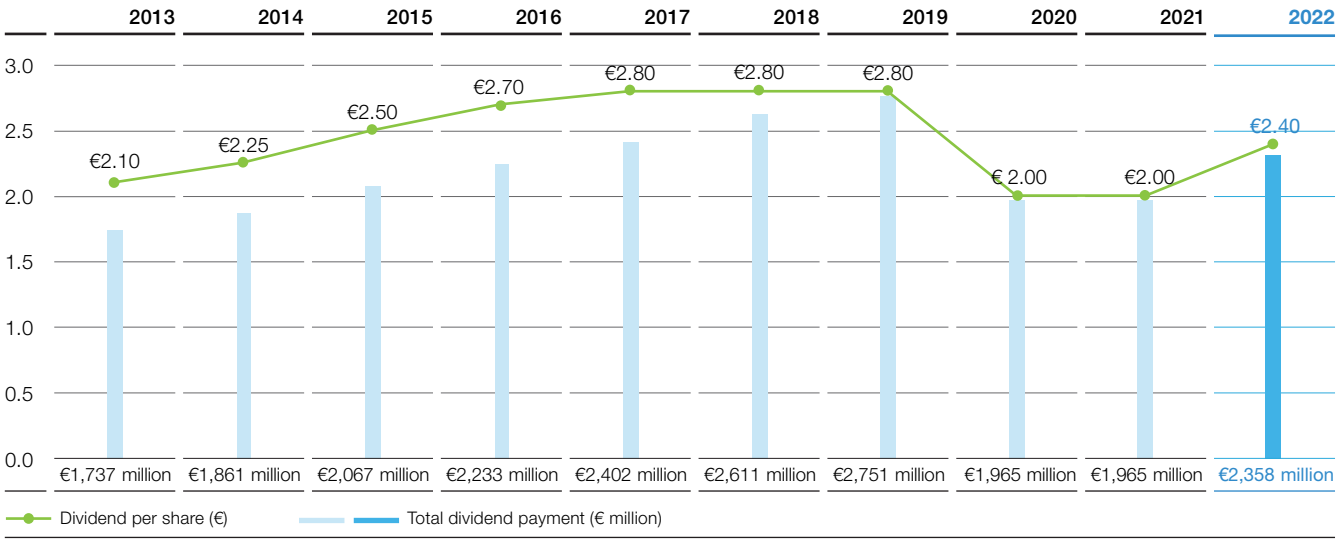
[1] For details on the calculation of core earnings per share, see Combined Management Report, A 2.3
[2] Xetra closing prices (source: Bloomberg)

Dividend payout increased substantially

After two years of stable dividends, the Board of Management and the Supervisory Board propose to increase the dividend payout to €2.40 per share for 2022 (2021: €2.00 per share). This represents an absolute increase of 20% year on year, in line with our strong operational performance. The dividend payment corresponds to 30% of 2022 core EPS (2021: 31%). Based on the Bayer stock price at the end of 2022, the dividend yield is 5.0% (2021: 4.3%).

3

Dividends Per Share and Total Dividend Payment



Bayer stock included in important indices

The Bayer stock is listed on the DAX and numerous other key European indices, including the EURO STOXX 50, the FTSE Euro 100 and the S&P Europe 350. At the end of the year, Bayer was ranked 7th in the DAX 40 according to market capitalization. Bayer stock is also included in the important sustainability indices FTSE4Good, STOXX Global ESG Impact, STOXX Europe Sustainability, DAX 50 ESG and MSCI ACWI Low Carbon Target Index.

International ownership structure

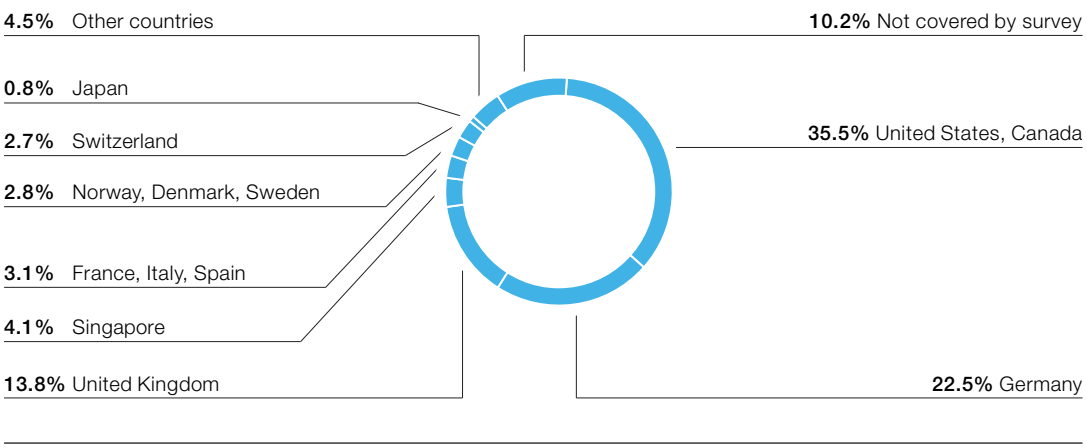
Our company's global presence is also reflected in our international ownership structure. The biggest share of our capital stock is held by investors in North America, accounting for 35.5%, up 5.7 percentage points year on year. German-based stockholders remain a key group of investors, holding 22.5% of Bayer stock, while shareholders in the United Kingdom account for 13.8%. Irrespective of geographic distribution, some 15% of our shares are held by private stockholders. In addition, Bayer employees hold about 1% of our capital stock through participation programs.

According to our share register, we had approximately 586,000 stockholders at the end of 2022.

Bayer has a 100% free float as defined by Deutsche Börse, the operator of the Frankfurt Stock Exchange.

4

Shareholder Composition – Regional Allocation



Source: CMi2i

Intensified investor dialogue across multiple offerings

We consider our ongoing dialogue with analysts and investors an important communication channel in order to receive their input and feedback and to inform them about the latest developments at our company. Our capital market communications in 2022 focused on progress with innovations and our business performance.

We advanced our successful virtual formats introduced during the COVID-19 pandemic and at the same time again increased in-person interaction with our investors. In total, Investor Relations participated in more than 500 engagements in 2022, both in-person and via virtual venues. The events were regularly attended by members of the Board of Management and other top executives.

In particular, we held **four investor webinars,** two with a Pharmaceuticals focus following key late-stage asset milestones for our cancer drug Nubeqa™ and our Factor XIa inhibitor asundexian, one Crop Science Annual Pipeline Update and one Consumer Health Portfolio Update.

As a major in-person event, we hosted the **Crop Science Field Technology Showcase** at our Jerseyville Agronomy Center in the United States, during which top technical experts guided the attendees through our latest technologies live in the field and participants experienced the convergence of cutting-edge technology in crop protection chemistry, breeding, biotechnology, digital agriculture and sustainability in full-system demonstrations.

We also kept the successful virtual format of our **Annual Stockholders' Meeting**, providing shareholders with best-in-class options to exercise their stockholder rights in a virtual setting, including the ability to ask follow-up questions during the event through our Stockholders' Portal and to submit text and video statements ahead of the meeting which were then published on our website. Video statements were also played during the Annual Stockholders' Meeting and transcripts of the speeches by Werner Baumann and Prof. Dr. Norbert Winkeljohann were published in advance so that targeted questions could be submitted.

Based on our experience with virtual Annual Stockholders' Meetings from the past few pandemic years and the new legislation, we will in principle offer the same rights as in a physical Annual Stockholders' Meeting in a virtual setting starting from 2023. The new form of the virtual Annual Stockholders' Meeting supports the direct exchange with stockholders during the event by way of video communication. In particular, shareholders have the right to submit motions and election proposals during the virtual Annual Stockholders' Meeting as well as to speak. In addition, the shareholders have the right to submit questions and obtain feedback during the event.

Important improvements in ESG ratings

The capital markets' interest in environmental, social and governance (ESG) topics is higher than ever before. Besides our sustainability strategy, our targets and our climate protection activities, we see increasing relevance in the areas of biodiversity, product stewardship and human rights.

We increased transparency in several bilateral investor interactions, conferences and roadshows and proactively addressed controversies in several reports: The United Nations (UN) Global Compact Adherence Report outlines our commitment to the 10 UN Global Compact principles and the Genetically Modified Crops Report as well as the Crop Science Sustainability Progress Report describe our contribution to sustainable agriculture and environmental impact reduction.

Highlights of our engagement included the removal of the red flag and the alleged UN Global Compact breach by MSCI ESG Research and the subsequent rating improvement from BB to A. We also improved our Access to Medicine Index (ATMI) ranking by four places to rank nine.

Successful hybrid bond refinancing in a challenging market environment

Central banks increased target interest rates worldwide as a reaction to increasing inflation due to pandemic-related supply chain disruptions. For the euro area, which is heavily dependent on energy imports from Russia, the start of Russia's war in Ukraine in February further fueled inflationary pressures and pushed the European Central Bank to act. Consequently, long-term interest rates also sharply increased in 2022 following almost a decade of all-time lows. This volatile interest rate environment in combination with high geopolitical uncertainty led to extraordinarily cautious debt investor behavior. Therefore, issuance windows were closed for long periods throughout 2022.

Despite this challenging market environment, we were able to successfully refinance our hybrid bond with a 2022 call date in March in a one-day execution. The issuance day was one of the rare periods throughout the year in which the hybrid bond market was able to absorb any new issuances at all. The issuance volume of €1.3 billion was split into two tranches with non-call periods of 5.5 years and 8.5 years. The achieved pricing was highly attractive as benchmark rates and credit spreads increased heavily over the course of the year. Being able to realize such a significant volume in the hybrid bond market, especially in times of market distress, shows the support Bayer enjoys with investors. Concurrent with the new issue, we offered investors early repayment of the outstanding hybrid bond with a 2022 call date. Since more than 80% of investors accepted the tender offer, we were subsequently able to make use of the clean-up call by repurchasing the remaining approximately 20% of the hybrid bond at par value. Through this tender offer, we were able to reduce hybrid bond refinancing costs to an optimal level.

In addition, we redeemed maturing bonds of US$250 million, €1.75 billion and JPY10 billion over the course of the year.

About this Report

This integrated Annual Report combines our financial reporting and material sustainability information. Our aim is to elucidate the interactions between financial, ecological and societal factors and underline their influence on our company's long-term success. All information required by commercial law is combined and referenced in our nonfinancial statement. In addition to the Annual Report, we publish a separate Sustainability Report with additional detailed nonfinancial information to meet the informational needs of all stakeholders to the greatest possible extent.

Legal principles and reporting standards

The consolidated financial statements of the Bayer Group as of December 31, 2022, comply with the International Financial Reporting Standards (IFRS), as adopted by the EU, valid at the closing date and with the provisions of the German Commercial Code in conjunction with German financial reporting standards (DRS). With due regard to these provisions, the combined management report provides an accurate overview of the financial position and results of operations of the Bayer Group. The Corporate Governance Report also conforms with the German Stock Corporation Act and the recommendations of the German Corporate Governance Code.

The nonfinancial statement (Sections 289b et seq. and 315b et seq. of the German Commercial Code) is integrated into the combined management report and covers data for the Bayer Group and Bayer AG as the parent company. As a framework for this, we apply the GRI Standards (Section 289d of the German Commercial Code). We also use, for example, the international recommendations and guidelines of the OECD and ISO 26000 as a guide for defining and selecting nonfinancial indicators and in our reporting. When selecting and measuring our key data, we take into account the recommendations of the Greenhouse Gas Protocol with respect to greenhouse gas emissions and those of the European Federation of Financial Analysts Societies, the World Business Council for Sustainable Development and the European Chemical Industry Council with respect to other nonfinancial indicators. The legality, accuracy and expediency of the nonfinancial statement have been verified by the Supervisory Board.

The Annual Report is available online as a PDF. Furthermore, contents subject to the statutory disclosure requirement are published in the Federal Gazette under consideration of the specifications of the European Single Electronic Format (ESEF) Regulation.

Data collection and reporting thresholds

In accordance with IFRS 5 (Non-current Assets Held for Sale and Discontinued Operations), financial indicators are given for continuing operations unless otherwise explicitly indicated. The same logic applies principally to HR, procurement and HSE (health, safety and environment) information and to our social data.

Reporting of the Group's HSE data includes all fully consolidated companies in which we hold at least a 50% interest. Data on occupational injuries is collected at all sites worldwide. Environmental indicators are measured at all environmentally relevant production, research and administration sites.

External verification

The auditing company Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Munich, Germany, has audited the consolidated financial statements of Bayer AG, Leverkusen, and the combined management report for the fiscal year from January 1, 2022, to December 31, 2022, and has issued an unqualified opinion. The audit, which is conducted to obtain reasonable assurance, also includes the disclosures pertaining to the nonfinancial statement in the management report. Exempted from this are Table A 1.2.1/2 and the indented passages pertaining to the nonfinancial Group targets in Chapter 1.2.1, as well as the section on the EU Taxonomy, which were reviewed on a limited assurance basis in 2022. Our information on Scope 3 emissions was also subject to a limited assurance review. In addition, our Opportunity and Risk Report contains certain disclosures concerning the description of the risk management system and the internal control system pursuant to Section 91, Paragraph 3 of the AktG that do not normally form part of the management report. These disclosures are provided in indented passages within the text.

The Compensation Report was subject to a reasonable assurance review and appears in a separate chapter outside of the Management Report. The declaration of compliance with the German Corporate Governance Code has not been audited by the auditor.

Additional information

As the indicators in this report are stated in accordance with commercial rounding principles, totals and percentages may not always be exact.

Since inclusion and diversity forms an integral part of our corporate culture, we have employed gender-neutral language throughout this Annual Report where possible while maintaining legibility, clarity and accuracy.

A Combined Management Report

of the Bayer Group and Bayer AG as of December 31, 2022

1. Fundamental Information About the Group

1.1 Corporate Profile and Structure

We promote health and safeguard the food supply

Our strategy targets both economic growth and sustainability

1.1.1 Corporate Profile

We are a life science company and a global leader in healthcare and nutrition. Our innovative products support efforts to overcome the major challenges presented by a growing and aging global population. We help prevent, alleviate and treat diseases. We also aim to ensure the world has a reliable supply of high-quality food, feed and plant-based raw materials. As part of this endeavor, the responsible use of natural resources is always a top priority. In line with our vision, “Health for all, hunger for none”, we aim to put an end to hunger and help everyone lead a healthy life, while at the same time protecting ecosystems. That is what we aspire to achieve, guided by our purpose, “Science for a better life.”

We aim to continuously enhance our company’s earning power and create value for customers, patients, shareholders, employees and society. Innovation, growth and sustainability are integral parts of our strategy, while our corporate values of **L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency, or LIFE for short, lay the foundation for the way we operate. These values shape our culture and ensure a common identity throughout the Bayer Group.

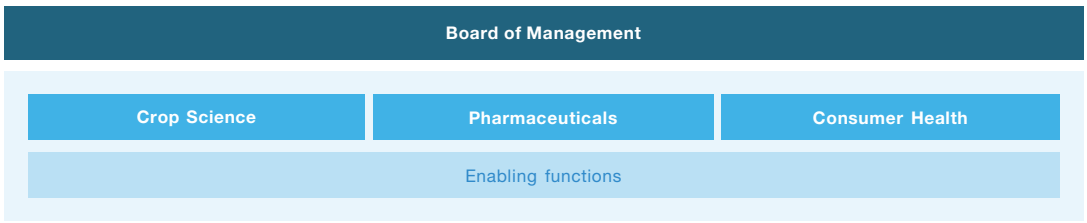
1.1.2 Corporate Structure

Corporate structure as of December 31, 2022

As the parent company of the Bayer Group, Bayer AG – represented by its Board of Management – performs the principal management functions for the entire enterprise. This mainly comprises the Group’s strategic alignment, resource allocation, and the management of financial affairs and managerial staff, along with the management of the Group-wide operational business of the Crop Science, Pharmaceuticals and Consumer Health divisions. The enabling functions support the operational business.

A 1.1.2/1

Bayer Group Structure in 2022



The following changes have occurred within our organization:

Rodrigo Santos was appointed to the Board of Management effective January 1, 2022, and became head of the Crop Science Division. His predecessor Liam Condon stepped down from the Board of Management effective December 31, 2021.

The Supervisory Board of Bayer AG has appointed Bill Anderson to become CEO of Bayer, effective June 1, 2023. He will join Bayer as a member of the Board of Management on April 1, 2023. Current CEO Werner Baumann will retire at the end of May 2023.

Our divisions are active in the following areas:

Crop Science is the world's leading agriculture enterprise, with businesses in crop protection, seeds and traits, and digital farming. We offer a broad portfolio of high-value seeds, improved plant traits, innovative chemical and biological crop protection products, digital solutions and extensive customer service for sustainable agriculture. We market these products primarily via wholesalers and retailers or directly to farmers. In addition, we market pest and weed control products and services to professional users outside the agriculture industry. Most of our crop protection products are manufactured at the division's own production sites. Numerous decentralized formulation and filling sites enable the company to respond quickly to the needs of local markets. The breeding, propagation, production and/or processing of seeds, including seed dressing, take place at locations close to our customers, either at our own facilities or under contract.

Pharmaceuticals concentrates on prescription products, especially for cardiology and women's healthcare, and on specialty therapeutics focused on the areas of oncology, hematology, ophthalmology and, in the medium term, cell and gene therapy. We have established a strategic unit for cell and gene therapy spanning the entire value creation chain – from research and development to marketing and patients. The division also comprises the radiology business, which markets diagnostic imaging equipment and digital solutions together with the necessary contrast agents. Our portfolio includes a range of key products that are among the world's leading pharmaceuticals for their indications. The prescription products of our Pharmaceuticals Division are primarily distributed through wholesalers, pharmacies and hospitals.

Consumer Health is a leading supplier of nonprescription (OTC = over-the-counter) medicines, nutritional supplements, medicated skincare products and other self-care solutions in the categories of pain, cardiovascular risk prevention, dermatology, digestive health, allergy, and cough & cold. The products are generally sold by pharmacies and pharmacy chains, supermarkets, online retailers and other large and small retailers.

The **enabling functions**, such as Group Finance, Information Technology and Human Resources, serve as Group-wide competence centers and bundle business support processes and services for the divisions. Our Leaps by Bayer unit, which invests in disruptive innovations, also forms part of the enabling functions.

More information on the divisions' products and activities is contained in the following table:

A 1.1.2/2

Products and Activities of the Divisions

Indication/application/business	Core activities and markets	Main products and brands[1]
Crop Science		
Herbicides	Chemical crop protection products to control weeds	Adengo™, Alion™, Atlantis™, Conviso™, Laudis™, Roundup™, Sakura™, XtendiMax™
Corn Seed & Traits	Seeds and traits for corn	Dekalb™, RIB Complete™, SmartStax™, Vitala™, VT Double™ PRO, VT Triple™ PRO, VTPRO4™
Soybean Seed & Traits	Seeds and traits for soybeans	Asgrow™, Intacta RR2PRO™, Intacta 2 Xtend™, Roundup Ready 2 Xtend™, Roundup Ready 2 Yield™, XtendFlex™
Fungicides	Biological and chemical products to protect crop plants from fungal diseases	Antracol™, Delaro Complete™, Fox™, Infinito™, Luna™, Nativo™, Prosaro™, Serenade™, Xivana™, Xpro™
Insecticides	Biological and chemical products to protect crop plants from harmful insects and their larvae	BioAct™, Confidor™, Curbix™, Movento™, Sivanto™, Vayego™, Velum/Verango™, Vynyty Citrus™
Environmental Science[2]	Products for professional pest control, vector control, forestry, golf courses and parks, railway tracks, products for consumer lawn and garden use	Esplanade™, Ficam™, Fludora™ Fusion, K-Othrine™, Maxforce™
Vegetable Seeds	Vegetable seeds	DeRuiter™, Seminis™
Digital Agriculture	Digital applications for agriculture	Climate FieldView™, ForGround
Other	Seeds and traits for cotton, oilseed rape/canola, rice and wheat as well as biological and chemical seed treatment products to protect against fungal diseases and pests	Bollgard™ 3 XtendFlex™, Deltapine™, Gaucho™, TruFlex™, ThryvOn™
Pharmaceuticals		
Cardiology	Hypertension, pulmonary hypertension, heart attack and stroke, thrombosis, coronary artery disease (CAD), peripheral artery disease (PAD), symptomatic chronic heart failure, chronic kidney disease and type 2 diabetes	Xarelto™, Adalat™, Aspirin™ Cardio, Adempas™, Verquvo™, Kerendia™
Oncology	Liver cancer, renal cell carcinoma, thyroid carcinoma, prostate cancer, colorectal cancer, gastrointestinal stromal tumors (GIST), follicular lymphoma, solid tumors with NTRK gene fusions	Nexavar™, Nubeqa™, Xofigo™, Stivarga™, Aliqopa™, Vitrakvi™
Ophthalmology	Visual impairment due to age-related macular degeneration (AMD), diabetic macular edema (DME) or retinal vein occlusion (RVO)	Eylea™
Hematology	Hemophilia A	Kogenate™/Kovaltry™/Jivi™
Women's health	Contraception, gynecological therapy	Mirena™ product family, Yaz™ product family, Visanne™
Infectious diseases	Bacterial infections	Avalox™/Avelox™, Cipro™, Ciprobay™
Radiology	Contrast agents; diagnostic imaging equipment for use with contrast agents	Gadovist™, Ultravist™, Medrad Spectris Solaris™, Medrad Stellant™
Neurology	Multiple sclerosis	Betaferon™/Betaseron™
Consumer Health		
Dermatology	Wound care, skin care, skin and intimate health	Bepanthen™, Canesten™
Nutritionals	Multivitamin products, dietary supplements	One A Day™, Elevit™, Berocca™, Supradyn™, Redoxon™
Pain and Cardio	General pain relief and cardiovascular risk prevention	Aspirin™, Aleve™
Digestive Health	Digestive health complaints	Alka-Seltzer™, MiraLAX™, Rennie™, Iberogast™
Allergy, Cough & Cold	Allergies, cough and cold	Claritin™, Aspirin™, Alka-Seltzer™, Afrin™

[1] The order of the products listed is no indication of their importance.

[2] We completed the sale of our Environmental Science Professional business to international investment firm Cinven in early October.

Our company has a global footprint. As of December 31, 2022, the Bayer Group comprised 354 consolidated companies in 83 countries.

A 1.1.2/3

Selected Bayer Sites in 2022

Administrative sites

Basel, Switzerland
Berlin, Germany
Leverkusen, Germany (headquarters)
Monheim am Rhein, Germany
St. Louis, USA

Research and development sites

Crop Science
Chesterfield, USA
Frankfurt am Main, Germany
Monheim am Rhein, Germany

Pharmaceuticals
Berlin, Germany
Whippany, USA
Wuppertal, Germany

Consumer Health
Basel, Switzerland
Gaillard, France
Whippany, USA

Production sites

Crop Science
Dormagen, Germany
Luling, USA
Vapi, India

Pharmaceuticals
Bergkamen, Germany
Berlin, Germany
Leverkusen, Germany

Consumer Health
Grenzach, Germany
Lerma, Mexico
Myerstown, USA

Selected sites based on number of employees (FTEs)

1.2 Strategy and Management

Sustainable, profitable growth in focus

Innovative business activities contribute to “Health for all, hunger for none”

Ambitious sustainability targets for the entire Group

1.2.1 Strategy and Targets

Group strategy

A growing and aging world population and the increasing strain on nature’s ecosystems are among the major challenges facing humanity. As one of the world’s leading companies in the fields of health and nutrition, we are able to play a key role in devising solutions to tackle these challenges. The COVID-19 crisis and Russia’s invasion of Ukraine have reminded us of the importance of health and nutrition and underlined our systemic relevance.

Guided by our purpose “Science for a better life”, we deliver breakthrough innovations in healthcare and agriculture. We contribute to a world in which diseases are not only treated but effectively prevented or cured, in which people can take better care of their own health needs, and in which enough agriculture products are produced while conserving our planet’s natural resources. That’s because at Bayer, growth and sustainability go hand in hand. In short, we are working to make our vision of “Health for all, hunger for none” a reality. Our strategy operationalizes our vision, as we look to achieve long-term profitable growth and make a positive contribution to society and the environment.

We focus on four strategic levers:

// We develop **innovative products and solutions** and leverage cutting-edge research to address unmet societal challenges. We are also continuing to drive the digitalization of our entire value chain.

// We drive the **operational performance** of our business by optimizing our resource allocation and cost base.

// **Sustainability** is an integral part of our business strategy, operations and compensation system. Through our businesses, we contribute significantly to achieving the United Nations’ Sustainable Development Goals (SDGs). We also pursue resolute, science-based climate action along our entire value chain.

// As a **global leader** in health and nutrition, we continue to develop our business. We create value with strategy-based resource allocation focused on profitable growth. We are active in regulated and highly profitable businesses that are driven by innovation and in which we have the objective to grow ahead of the competition.

These four value levers underpin the strategies of our divisions.

Strategies of the divisions

Crop Science

The landscape is changing in agriculture: Increased pressures due to climate change combined with a growing population have created a pivotal moment in how our customers provide food, fuel and textile fibers for a world that needs to learn to live within planetary boundaries. These challenges have spurred rapid, disruptive changes in the industry, intensifying competition across the value chain, creating new players and opening up new sales opportunities. Our mission is to transform agriculture and drive a more sustainable food system.

The differentiators in this dynamic environment are clear: the speed and scale of innovation and a focus on sustainable results for our customers. With a leading innovation pipeline across Seeds & Traits, Crop Protection and Digital Farming, a deep digital ecosystem, a global footprint, and a multitude of partnerships, we are currently the market leader and are very well positioned moving forward. At the same time, we are evaluating the opportunities for expansion into attractive new business fields.

Our digital connectivity strengthens our proximity to our customers, accelerating innovation, automating processes and increasing the productivity of our R&D pipeline. We are digitally connecting farms, optimizing input use and creating an industry-wide ecosystem aimed at unlocking new income streams for our customers and our own business by pioneering new, sustainable business models. We provide smart and integrated approaches to our customers in order to meet the requirements of the future. Our goal is to grow faster than the market and deliver superior returns to our competitors through tailored solutions such as the Smart Corn System. Moreover, we aim to achieve digitally enabled sales by the end of the decade.

We are pursuing ambitious sustainability targets. By 2030, we aim to reduce the environmental impact of Bayer's crop protection by 30% globally, decrease field greenhouse gas emissions by 30% in the most emitting cropping systems that we serve, and improve the livelihoods of 100 million smallholders.

Supported by our digital application FieldView™, the Bayer Carbon Initiative Program rewards customers such as farmers for adopting climate-smart practices, sequestering carbon at scale and creating new on-farm revenue streams. We are evolving our approach for a more sustainable ecosystem – for example with the launch of "ForGround" in the United States. "ForGround" offers a suite of resources and decision support tools to help users introduce or expand regenerative agricultural practices to make fields more weather-resilient and productive.

Smallholder farmers are both a fast-growing market that we are committed to serving and a critical lever to ensure food security and quality of life in their communities. That's why we continue to expand the Better Life Farming program: With around 2,500 centers operating in India, Bangladesh, Indonesia, Mexico and Honduras, these centers provide smallholder farmers with products, education, financing and support to help their businesses thrive. As our work with smallholder farmers continues, it will underpin our growing business with this customer segment.

Pharmaceuticals

Throughout the world, an aging population continues to drive the incidence of chronic diseases and the increased occurrence of multiple conditions affecting patients' quality of life. The convergence of biology and data science will be a key element for innovation at Pharmaceuticals. Digital technologies can transform the way healthcare is delivered, while cell and gene therapy has the potential to cure severe diseases.

We are helping to drive medical progress through our focus on researching, developing and marketing innovative medicines. Our short- and mid-term growth will be further fueled by key products such as Eylea™, Nubeqa™, Verquvo™ and Kerendia™, as well as late-stage R&D pipeline candidates, including elinzanetant and asundexian. We are enhancing the benefits for patients and generating added value in our product portfolio with a series of life cycle management activities, including the development of a high-dose formulation for Eylea™. To safeguard long-term growth, we continue to invest in R&D.

We are continuously strengthening our technology platforms. Building on our acquisitions of the US companies BlueRock Therapeutics LP, and Asklepios BioPharmaceutical, Inc. (AskBio), we are further expanding our cell and gene therapy activities. By entering a partnership with US-based Mammoth Biosciences Inc., we have secured access to novel gene-editing technology complementing our existing technology platforms. Last year's acquisition of Vividion Therapeutics, Inc., also in the United States, strengthens our drug discovery capabilities. We are also enhancing our technological capabilities through the targeted expansion of our digital R&D infrastructure. Moreover, we are expanding our efforts to access external innovation through research collaborations and in-licensing, capturing continued growth opportunities in biologics and novel technologies.

In Oncology, we continue to build our integrated Research & Early Development organization. With our new precision molecular oncology research center in Boston-Cambridge, we will drive the development of novel targeted cancer therapies for people with unmet medical needs. Located in the Boston scientific hub, the new center will foster close collaboration with the research world and enhance our global network of academic, hospital and industry partners.

Our ambitious sustainability agenda includes improving access to medicines. We improved our ranking in the Access to Medicine Index to 9th place in 2022 (2021: 13th place), underlining our commitment to ensuring fairer access to medicines. Another focus is on improving women's health and strengthening their role in society by helping to promote gender equality and women's economic participation. As part of this endeavor, we are leveraging our leading position in women's health to be able to provide 100 million women in low- and middle-income countries with access to modern contraception by 2030. In addition, we are committed to combating neglected tropical diseases and noncommunicable diseases.

Consumer Health

Rising healthcare costs, changing demographics and increasing health awareness among consumers continue to fuel attractive long-term growth in the consumer healthcare market. A more prominent consumer focus on self-care, prevention and convenience further sharpened during the pandemic is expected to continue to drive consumption across all core Consumer Health categories and accelerate channel shifts towards e-commerce.

We provide consumers with products, services and information that empower them to improve their everyday health. Our strategy focuses on our core categories, as well as the transition of prescription medicines to nonprescription status. Our profitable growth is driven by world-class, science-based innovation with our trusted, consumer-preferred brands as well as new product launches. We are also continuously driving cost and cash productivity across the entire value chain.

We continue to accelerate our digital transformation efforts across all areas of our operations, in marketing, sales, supply chain and R&D, to improve engagement with consumers, customers and healthcare professionals while driving productivity, flexibility and resilience across our value chain. We leverage an agile innovation model and collaborate with external partners to provide consumers with innovative solutions that best address their everyday health needs. Through acquisitions and partnerships, we have gained access to new business models and capabilities to provide personalized diagnostics and treatment solutions.

We pursue ambitious sustainability targets. By 2030, we aim to expand access to self-care for 100 million people in economically or medically underserved communities. We are executing this ambition by fully embedding sustainability across our operations to offer solutions that best serve consumers, in particular those for whom self-care is the primary form of care.

Climate action and decarbonization

We have a far-reaching decarbonization program in place across the company, contributing in this way to meeting the target of limiting global warming to 1.5°C. The targets and measures we pursue as part of our decarbonization program have been confirmed by the Science Based Targets initiative (SBTi). To reduce emissions by more than 42% by the end of 2029 compared with the 2019 baseline, we are implementing energy efficiency measures at our sites, and are aiming to purchase 100% of our electricity from renewable sources. To support the decarbonization, we joined the EV100 initiative in 2022 with the aim to switch our fleet to electric vehicles by 2030. We have committed to becoming climate-neutral in our own operations by 2030 by offsetting all other emissions through the purchase of certificates from certified climate protection projects that satisfy externally recognized quality standards. We have further enhanced transparency by disclosing climate-related risks and opportunities as part of our TCFD reporting and by publishing a detailed report on the subject.

We are also cooperating with our suppliers and customers to reduce our greenhouse gas emissions along the upstream and downstream value chain by at least 12.3% by 2029 compared with the 2019 baseline. The aforementioned in-field decarbonization efforts of our Crop Science Division and its innovations to enhance climate resilience supplement these commitments and should make significant contributions in the value chains of the agricultural industry.

Targets and key performance indicators

To advance and measure the implementation of our strategy, we have set ambitious Group targets.

A 1.2.1/1

Financial Group Targets

Target (based on closing rates as of June 30, 2022)	Target attainment in 2022	Target for 2023 (currency-adjusted)	Target for 2023 (at closing rates)
Group sales (Fx & p adj. change); Revised 2022 outlook: increase by approx. 8% (Fx & p adj.) to €50 to 51 billion	€50.7 billion +8.7%	€51 to 52 billion Fx & p adj.: +2 to 3%	€50 to 51 billion Fx & p adj.: +2 to 3%
EBITDA margin before special items; Revised 2022 outlook: 26 to 27%	26.6%	–	–
Core earnings per share; Revised 2022 outlook: approx. €7.70	€7.94	€7.20 to €7.40	€7.20 to €7.40
Free cash flow; Revised 2022 outlook: approx. €2.5 billion	€3.1 billion	approx. €3.0 billion	approx. €3.0 billion

Fx & p adj. = currency- and portfolio-adjusted

See A 2.1.1 “Economic Position and Target Attainment” for further information on the attainment of our Group financial targets, and A 3.1.2 “Corporate Outlook” for our financial targets for 2023.

A 1.2.1/2

Nonfinancial Group Targets Through 2030

Target[1]	Base year 2019	2021	2022	Target for 2030
Number of smallholder farmers in low- and middle-income countries (LMICs) supported by products, services and partnerships	42 million	49 million	**52 million**	100 million
Number of women in low- and middle-income countries (LMICs) who have their need for modern contraception satisfied due to interventions supported by Bayer	38 million	41 million	**44 million**	100 million
Number of people in underserved[2] communities whose self-care is supported by interventions from Bayer	41 million	46 million	**49 million**	100 million
Scope 1 and 2 greenhouse gas emissions[3] (million metric tons of CO_2 equivalents) (% change compared to base year)	3.76	3.17 (– 15.7%)	**3.03** **(– 19.5%)**	– 42%[4, 6]
Scope 3 greenhouse gas emissions from relevant[7, 8] categories (million metric tons of CO_2 equivalents) (% change compared to base year)	8.82	7.91 (– 10.2%)	**8.90** **(+ 1.0%)**	– 12.3%[5, 6]
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions (million metric tons of CO_2 equivalents) (% target attainment)	0	0.30 (9.5%)	**0.45** **(14.9%)**	100%

[1] A more detailed description of the calculation methodologies is published on our website www.bayer.com/en/sustainability.
[2] Economically or medically
[3] Covering Scope 1 and 2 emissions (market-based) of sites that have an energy consumption in excess of 1.5 terajoules
[4] Corresponding to the sustainability target of limiting global temperature rise to 1.5°C above pre-industrial level
[5] Corresponding to the sustainability target of limiting global temperature rise below 2°C above pre-industrial level
[6] By the end of 2029
[7] In accordance with the criteria set out by the Science Based Targets initiative, the Scope 3 categories relevant for our goal include emissions in the following categories: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) (upstream) transportation and distribution, and (6) business travel.
[8] The figures for 2020 and 2021 were corrected as new information came to light in the categories 3.1, 3.2 and 3.4. This encompassed adjusting the methodology employed for correcting for inflation and improving the classification system in procurement.

In our **Crop Science** Division, we support smallholder farmers by supplying high-quality seeds and crop protection products, technologies and services. In 2022, together with the Bill & Melinda Gates Foundation, the Bayer Foundation continued to support Mercy Corps AgriFin's Digital Farmer II program, for example. The program is aimed at providing smallholder farmers in Africa with access to digital offerings, such as information and financial products and services, through 2025. In 2022, we supported 52 million smallholder farmers (2021: 49 million) in low- and middle-income countries.

In our **Pharmaceuticals** Division, our local sales activities for modern contraception are primarily supplemented by global aid programs (such as the United Nations' Population Fund, UNFPA), for which we offer our products on favorable terms. Alongside product sales, we are also engaged in partnerships with the Bill & Melinda Gates Institute at Johns Hopkins University as part of "The Challenge Initiative" and in a national UNFPA project in Egypt. The partnership programs we support help numerous women in Asia and Africa to gain access to modern contraception, irrespective of the method or manufacturer. In 2022, we were able to increase the number of women reached to 44 million (2021: 41 million).

In our **Consumer Health** Division, we advance access to everyday health for people in underserved communities who have limited access to essential health services. We leverage our global brands and partnerships to develop and adapt self-care solutions for low-income consumers, bring targeted health education to communities who need it most, establish critical last-mile distribution channels, and advocate globally for science-based and accessible self-care. Our signature program, the Nutrient Gap Initiative, aims to tackle malnutrition brought about by widespread micronutrient deficiency in underserved communities around the globe, preventing irreversible health damage and breaking the cycle of poverty. Through our global partnership with Vitamin Angels, we focus on underserved pregnant women and their babies, who are particularly vulnerable, improving access to micronutrients in 12 countries. Through

our direct efforts and partnerships, we were able to reach 49 million people in 2022 (2021: 46 million), and an additional 21 million in India.

As part of our **climate strategy**, we reduced Scope 1 and 2 greenhouse gas emissions by 0.14 million metric tons of CO_2 equivalents (–4.5%) year on year in 2022, mainly due to a greater share of electricity being purchased from renewable energy sources. In the Scope 3 Science Based Targets (SBT) categories that are relevant for our company, our emissions rose by 0.99 million metric tons of CO_2 equivalents, representing an increase of 12.5% compared with the prior year. The rise in Scope 3 emissions in the SBT-relevant Scope 3 categories was largely attributable to business growth, replenishment of inventories and an increase in air freight and business travel.

In addition, we have also offset 0.45 million metric tons of CO_2 equivalents through external projects to achieve carbon neutrality at our own sites.

EU taxonomy

Our sustainability targets (Chapter 1.2.1/2) help us to realize our vision of “Health for all, hunger for none”. In addition, we also report on other nonfinancial aspects. In accordance with Article 8 of the EU Taxonomy Regulation (EU) 2020/852 and the supplementary delegated acts, we are required to disclose the proportion of turnover (sales), capital expenditure (CapEx), and operating expenditure (OpEx) in the reporting period that is EU taxonomy-eligible and taxonomy-aligned with regard to the environmental objectives climate change mitigation and climate change adaptation.

Under Article 1, No. 5 of the delegated act of July 6, 2021, supplementing Article 8 of Regulation (EU) 2020/852, economic activities can only qualify as taxonomy-eligible if they have been defined in Annexes I and II to the delegated act of June 4, 2021. Activities that are not described in these two Annexes are deemed taxonomy-non-eligible. This means that, while our own sustainability targets can be regarded as an additional contribution to sustainability, they do not fall under the EU taxonomy.

Taxonomy-eligible economic activities were required to be reviewed in terms of their ecological sustainability (taxonomy alignment) for the first time in 2022. Under Article 3 of Regulation (EU) 2020/852, economic activities qualify as taxonomy-aligned if they contribute substantially to one or more of the following environmental objectives: climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. Furthermore, economic activities must not significantly harm any of the other environmental objectives (DNSH = do no significant harm) and must be carried out in compliance with the minimum safeguards, such as in the area of human rights.

Taxonomy alignment is verified using technical screening criteria for each economic activity. These criteria are defined in Annexes I and II to the delegated act of June 4, 2021, for economic activities that can contribute substantially to the environmental objectives climate change mitigation and climate change adaptation. As before, there is no delegated act in force for the remaining four environmental objectives.

We use our own interpretation when applying the EU taxonomy as definitions are not yet available and the wording used is unclear. We also take into account the FAQ documents published by the European Commission.

Reporting on turnover

As before, none of our core business activities are taxonomy-eligible, as the legislation has not changed. Therefore, none of our sales-generating activities currently fall within the EU taxonomy.

A 1.2.1/3

Taxonomy Turnover Reporting

Economic activities	Code(s)	Absolute turnover	Proportion of turnover	Substantial contribution criteria[1]: Climate change mitigation	Substantial contribution criteria[1]: Climate change adaptation
		€ million	%	%	%
A. Taxonomy-eligible activities					
A.1. Environmentally sustainable activities (taxonomy-aligned)					
Turnover of environmentally sustainable activities (taxonomy-aligned) (A.1)		0	0		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)					
Turnover of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)		0	0		
Total A.1 + A.2		0	0		
B. Taxonomy-non-eligible activities					
Turnover of taxonomy-non-eligible activities (B)		50,739	100		
Total A + B		50,739	100		

[1] The figures presented only pertain to the environmental objectives that the EU designated for application in 2022.

A 1.2.1/3 (continued)

Taxonomy Turnover Reporting

Economic activities	DNSH criteria (Does Not Significantly Harm): Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	Minimum safeguards	Taxonomy aligned proportion of turnover 2022	Taxonomy aligned proportion of turnover 2021	Category enabling activity	Category transitional activity
	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	%	E	T
A. Taxonomy-eligible activities											
A.1. Environmentally sustainable activities (taxonomy-aligned)											
Turnover of environmentally sustainable activities (taxonomy-aligned) (A.1)								0	–		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)											
Turnover of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)											
Total A.1 + A.2											

Reporting on capital expenditure

Capital expenditure in 2022 comprised investments in tangible and intangible assets before depreciation, amortization, impairments, and remeasurements. Also included were investments in tangible and intangible assets due to business combinations. For further details, see Notes [14] and [15].

All major projects relating to tangible and intangible assets were analyzed to ascertain their taxonomy eligibility and classified in accordance with the activities of the EU taxonomy. The taxonomy-eligible capital expenditure was then reviewed using technical screening criteria for each activity to determine its taxonomy alignment. The detailed analyses were conducted by the departments of the respective business units to ensure correct allocation.

Our relevant economic activities in 2022 can contribute to both climate change mitigation and climate change adaptation. To avoid double counting within an indicator, taxonomy alignment was reviewed under the environmental objective climate change mitigation.

We examined whether or not an economic activity contributes substantially to climate change mitigation based on the individual asset.

To rule out significant harm being caused to other environmental objectives, we assessed the respective criteria at various levels. The criteria for climate change adaptation were assessed at site level, while the in some cases highly granular requirements for the other environmental objectives were examined at the individual asset level.

Compliance with the minimum safeguards was examined at Group level, taking into account existing corporate policies and risk management processes with respect to human rights, compliance, anticorruption and other aspects.

Following detailed analysis, we classified the noncapitalizable expenditure within the capital expenditure projects as immaterial.

The total capital expenditure identified as being taxonomy-eligible and taxonomy-aligned is shown in the following table:

A 1.2.1/4

Taxonomy CapEx Reporting

				Substantial contribution criteria[1]	
Economic activities	Code(s)	Absolute CapEx	Proportion of CapEx	Climate change mitigation	Climate change adaptation
		€ million	%	%	%
A. Taxonomy-eligible activities					
A.1. Environmentally sustainable activities (taxonomy-aligned)					
CapEx of environmentally sustainable activities (taxonomy-aligned) (A.1)		**0**	**0**		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)					
Construction, extension and operation of waste water collection and treatment	5.3	**9.0**	0.2	–	–
Renewal of waste water collection and treatment	5.4	**11.1**	0.3	–	–
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	**22.3**	0.6	–	–
Renovation of existing buildings	7.2	**116.4**	3.2	–	–
Installation, maintenance and repair of energy efficiency equipment	7.3	**42.4**	1.2	–	–
Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	7.5	**17.5**	0.5	–	–
Acquisition and ownership of buildings	7.7	**171.2**	4.7	–	–
CapEx of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)		**389.9**	**10.7**		
Total A.1 + A.2		**389.9**	**10.7**		
B. Taxonomy-non-eligible activities					
CapEx of taxonomy-non-eligible activities (B)		**3,250.1**	**89.3**		
Total A + B		**3,640.0**	**100**		

[1] The figures presented only pertain to the environmental objectives that the EU designated for application in 2022.

A 1.2.1/4 (continued)

Taxonomy CapEx Reporting

	DNSH criteria (Does Not Significantly Harm)										
Economic activities	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	Minimum safeguards	Taxonomy aligned proportion of CapEx 2022	Taxonomy aligned proportion of CapEx 2021	Category enabling activity	Category transitional activity
	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	%	E	T
A. Taxonomy-eligible activities											
A.1. Environmentally sustainable activities (taxonomy-aligned)											
CapEx of environmentally sustainable activities (taxonomy-aligned) (A.1)								**0**	**–**		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)											
Construction, extension and operation of waste water collection and treatment	–	–	–	–	–	–	–	–	–	–	–
Renewal of waste water collection and treatment	–	–	–	–	–	–	–	–	–	–	–
Transport by motorbikes, passenger cars and light commercial vehicles	–	–	–	–	–	–	–	–	–	–	–
Renovation of existing buildings	–	–	–	–	–	–	–	–	–	–	–
Installation, maintenance and repair of energy efficiency equipment	–	–	–	–	–	–	–	–	–	–	–
Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	–	–	–	–	–	–	–	–	–	–	–
Acquisition and ownership of buildings	–	–	–	–	–	–	–	–	–	–	–
CapEx of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)											
Total A.1 + A.2											

We incurred taxonomy-eligible capital expenditure (CapEx) of €389.9 million in 2022 (2021: €276.1 million). Taxonomy-non-eligible capital expenditure amounted to €3,250.1 million (2021: €2,849.9 million). The proportion of taxonomy-eligible capital expenditure therefore came to 10.7% (2021: 8.8%). The taxonomy-eligible capital expenditure primarily related to three taxonomy activities. Under “Acquisition and ownership of buildings”, capital expenditure of €171.2 million was incurred. This was mainly attributable to our Pharmaceuticals Division, and partly related to a production center for cell and gene therapy in Berkeley, United States. Under “Renovation of existing buildings”, capital expenditure of €116.4 million was incurred, in part for the Pharmaceuticals Division’s IUS facility in Turku, Finland. Under “Installation, maintenance and repair of energy efficiency equipment”, capital expenditure of €42.4 million was incurred. This was largely attributable to our Pharmaceuticals Division, and primarily related to the installation of new heating, ventilation and air-conditioning systems. In addition, there were

smaller capital expenditure measures for waste water systems, means of transport and devices for measuring the energy performance of buildings totaling €59.9 million.

The material physical climate risks for the economic activities must be identified when assessing alignment with the EU taxonomy (DNSH criterion: climate change adaptation). Before a capital expenditure is approved, risks arising from aspects such as climate conditions as well as storm and flooding dangers at the respective site are comprehensively reviewed and evaluated. However, this is not yet done in a way that adequately covers all verifiable criteria for the EU taxonomy. As the climate risk analysis is relevant for the entirety of our EU taxonomy-eligible economic activities, none of our taxonomy-eligible capital expenditure is reported as taxonomy-aligned in 2022.

We also report taxonomy-eligible capital expenditure under "Transport by motorbikes, passenger cars and light commercial vehicles", although the alignment of this activity with the EU taxonomy cannot be reviewed by us alone. Among other aspects, we do not have any information on whether the vehicle components can be reused or recycled (DNSH criterion: transition to a circular economy). As there is not yet a process for reliably verifying the purchase of EU taxonomy-aligned products, we report the full capital expenditure amount as taxonomy-eligible but not taxonomy-aligned.

Reporting on operating expenditure

We were also once again unable to identify any significant taxonomy-eligible operating expenditure (OpEx). Our operating expenditure with respect to research and development expenses, short-term leasing, and maintenance and repair amounted to €7,460 million in 2022 (2021: €6,757 million).

A 1.2.1/5

Taxonomy OpEx Reporting

				Substantial contribution criteria[1]	
Economic activities	Code(s)	Absolute OpEx	Proportion of OpEx	Climate change mitigation	Climate change adaptation
		€ million	%	%	%
A. Taxonomy-eligible activities					
A.1. Environmentally sustainable activities (taxonomy-aligned)					
OpEx of environmentally sustainable activities (taxonomy-aligned) (A.1)		**0**	**0**		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)					
OpEx of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)		**0**	**0**		
Total A.1 + A.2		**0**	**0**		
B. Taxonomy-non-eligible activities					
OpEx of taxonomy-non-eligible activities (B)		**7,460**	**100**		
Total A + B		**7,460**	**100**		

[1] The figures presented only pertain to the environmental objectives that the EU designated for application in 2022.

A 1.2.1/5 (continued)

Taxonomy OpEx Reporting

	DNSH criteria (Does Not Significantly Harm)										
Economic activities	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	Minimum safeguards	Taxonomy aligned proportion of OpEx 2022	Taxonomy aligned proportion of OpEx 2021	Category enabling activity	Category transitional activity
	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	%	E	T
A. Taxonomy-eligible activities											
A.1. Environmentally sustainable activities (taxonomy-aligned)											
OpEx of environmentally sustainable activities (taxonomy-aligned) (A.1)								**0**	**–**		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)											
OpEx of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities) (A.2)											
Total A.1 + A.2											

1.2.2 Sustainability Management

Sustainability is one of our strategic levers. That means that our business activities are systematically geared toward generating a positive impact for people and the planet. Effective sustainability management throughout the organization is ensured by clearly defined roles and responsibilities. The Chairman of the Board of Management, in his capacity as Chief Sustainability Officer (CSO), and the entire Board of Management hold first-level responsibility for this strategy. An external Sustainability Council advises the Board of Management on all matters relating to sustainability and offers a critical-constructive perspective. At the beginning of 2022, the Supervisory Board formed a separate committee for environmental, social and governance (ESG) matters, called the ESG Committee. This body advises management with respect to the incorporation of sustainability into the company's business strategy and corporate governance, and the risks and opportunities relating to sustainability, including reputational implications. In addition, the Public Affairs, Science and Sustainability; Health, Safety, Environment (PASS & HSE) enabling function supports the CSO and Board of Management in identifying risks and opportunities, developing strategies and defining sustainability management targets and guidelines. It also provides governance for all sustainability topics. Sustainability management is integrated into the existing management and governance structures and the core processes of the entire organization.

Our commitment to the UN Global Compact and the Responsible Care™ initiative of the chemical industry and our involvement in the World Business Council for Sustainable Development (WBCSD) underline our mission as a company that acts sustainably.

Materiality analysis and stakeholder dialogue

We ascertain the expectations and requirements of our various stakeholders using a materiality analysis, which surveys external stakeholders and managerial employees from various areas of the company throughout the world. The results of this reveal the latest developments along with sustainability-related opportunities and risks. Areas of activity with very high relevance from an internal and external perspective are accounted for in our strategic lever of sustainability and reflected in our nonfinancial Group targets. The current materiality analysis covers the following key areas of activity:

// Innovation
// Access to healthcare
// Sustainable food supply
// Product stewardship
// Climate and environmental protection
// Business ethics

As part of our stakeholder engagement process, which is underpinned by a dedicated guideline, we approach key social and political players and seek dialogue from the outset in strategic decision-making processes regarding new projects such as investment projects and launches of new products.

Respect for human rights

Observing human rights is fundamental to the way we operate. We have documented our stance in a globally binding corporate policy entitled the Bayer Human Rights Policy. We further developed our corresponding strategy in 2022 and are currently updating our human rights policy. Human rights due diligence is a continuous process that we constantly adapt and improve. To specifically ensure respect for human rights in the value chain, we employ a due diligence approach based on the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises.

We take steps to ensure human rights are respected both within our own company and along our entire value chain. Corporate policies, processes, and management and monitoring systems are in place to govern the implementation of human rights standards.

We offer special training programs to continuously enhance employees' awareness of the importance of human rights in their day-to-day activities. We launched a specific human rights training program in English in 2021, and added an additional eight languages in 2022. We also demand that our business partners, particularly our suppliers, fully observe human rights.

We are a founding member of the UN Global Compact and respect the Universal Declaration of Human Rights, the UN International Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights, the UNGPs and a range of globally recognized declarations applicable to multinational corporations, including the OECD Guidelines for Multinational Enterprises, the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, and the core labor standards of the International Labour Organization (ILO).

As part of our risk management process, we conduct a risk analysis of the potentially adverse consequences of our operating activities for human rights. See the Opportunity and Risk Report for the risk status identified for this area in 2022. We did not identify any potentially negative effects that were reportable under the CSR Directive Implementation Act.

Donations and foundations

Together with our network of leading partners, such as the Bayer foundations and other non-profits, we support social impact projects in the areas of health, nutrition, science and environment, and community engagement. Responding to disasters by providing humanitarian aid also plays a crucial role in our social commitment. Through our disaster relief programs, we support communities affected by natural disasters and public health crises.

In 2022, we provided around €37 million in charitable donations and social impact programs worldwide. In addition to the financial contributions, products costing around €16 million were donated to organizations in countries and communities in need. 66% of our contributions (cash and products) went to low- and middle-income countries. In 2022, we conducted more than 400 social projects worldwide with partner organizations, including the Bayer foundations (Bayer Cares Foundation, Bayer Science & Education Foundation, Bayer Fund (US) and Bayer Foundation India), which generate an important impact for society in line with our vision and

corporate purpose. Our donation activities in 2022 were mainly focused on humanitarian support in Ukraine and eastern European countries, as well as on our commitment to water access and the promotion of social innovations in agriculture.

The contributions we make to support social causes – in the form of monetary, product or other in-kind donations – are governed by our global "Corporate Charitable Giving Procedure," which was revised in late 2020. It establishes clear criteria for recipient eligibility and project selection, and also sets forth the strategy we follow to generate long-term impact for society in line with our sustainability goals. Our charitable donations are recorded and approved centrally, which provides a transparent overview of our contributions to supporting social causes around the world.

1.2.3 Management Systems

Planning and steering

Economic planning and steering are conducted in line with the frameworks that are set for the Group and the divisions by the Board of Management in the course of the strategic planning process, and are translated into specific targets during operational planning. The planning and steering process is complemented by the continuous monitoring of business developments, with key financial and nonfinancial management and performance indicators being updated regularly.

The following financial and nonfinancial indicators are employed to plan, steer and monitor the development of our business:

Operational management indicators

The main parameters in performance management at the operational level are sales growth, earnings and cash flow data, which also form the basis of short-term variable compensation (STI). Sales growth is measured in terms of the change in sales after adjusting for currency and portfolio effects (Fx & portfolio adj.) in order to reflect the operational business development of the Group and the divisions. A key measure of profitability is the EBITDA margin before special items, which is the ratio of EBITDA before special items to sales. Another important profitability indicator for the Bayer Group is core earnings per share, which is the core net income divided by the weighted average number of shares. The free cash flow – an absolute indicator – shows the generation of freely available financial resources and also reflects the company's financial strength and earning power.

Strategic value management indicator: ROCE

Return on capital employed (ROCE) is used as a strategic metric to measure the company's operating profit after taxes in relation to the average capital employed. Comparing ROCE against the weighted average cost of capital (WACC) on an annual basis illustrates the level of value creation. It also forms part of our long-term stock-based cash compensation (LTI).

Total shareholder return

We aim to create shareholder value and thus deliver attractive returns for our stockholders. Total shareholder return, which is determined based on the change in the share price over the measurement period plus any dividends paid in the interim, also forms part of our long-term stock-based cash compensation (LTI).

Sustainability

We aim to improve people's lives through our products. At the same time, we also endeavor to reduce our ecological footprint. We regulate and measure the attainment of our sustainability targets with the aid of nonfinancial key performance indicators (KPIs). We take into account the number of people reached in the "100 million" divisional targets and our greenhouse gas emissions as indicators for tracking the sustainable steering of our business and the reduction of our ecological footprint (see A 1.2.1/2). Our sustainability KPIs are also reflected in our long-term stock-based cash compensation (LTI) program.

Integrated management system

We maintain a Group-wide integrated management system (IMS), which is detailed in a corporate policy. The IMS provides a framework for all management systems at Bayer, ensuring compliance with the law and with internal and external requirements while also ensuring efficient ways of working. This is achieved through internal regulations and applicable processes involving clear roles and responsibilities. The IMS therefore plays a key role in safeguarding our company's license to operate.

1.3 Focus on Innovation

Our new solutions generate added value for our customers and society. Our activities focus on innovative products based on our research and development (R&D) competencies supplemented with new approaches in our process, service and business models. We also focus on social innovation to improve living conditions for people in developing countries and disadvantaged individuals in our society.

The results of our research and development help us contribute to solving global challenges in medical care and agriculture. In addition to the strong innovative capabilities of our employees throughout the company, our efforts are driven by a broad open innovation network and the use of new, groundbreaking technologies with a particular focus on data science insights.

Partnerships are integral to our innovation strategy, ensuring access to complementary technologies and expertise. We enter into strategic alliances with various partners such as universities, governmental agencies, start-ups, suppliers and other industrial companies.

We maintain a global network of R&D locations, which employ roughly 16,200 Bayer employees. In 2022, our research and development spend before special items amounted to €6,168 million (2021: €5,326 million).

Excellence in research and development

The activities we pursue are aligned with the innovation strategies of our divisions and are aimed at improving human and plant health and sustainably safeguarding stable harvests in agriculture in step with our vision "Health for all, hunger for none."

We are increasingly employing data science methods in the R&D projects of our three divisions, strategically coordinated by the cross-divisional Digital Transformation Board (DTB).

At Crop Science, we are driving forward the development of innovative products and services tailored to farmers' individual needs. With industry-leading research and development spending, we have developed cutting-edge technologies and innovations to increase our customers' productivity and thus enhance food security, and help farmers further reduce the environmental cost of agriculture. In 2022, the short-stature hybrid corn newly developed by the Crop Science Division demonstrated its ability to withstand extreme weather conditions. The farmer trials of the Smart Corn System with the integrated digital Climate FieldView™ platform which are scheduled for 2023 will enable farmers to precisely deploy fertilizer and crop protection products throughout the season, and thus conserve natural resources and the environment. Bayer's digital platform was used on 80 million hectares of farmland in more than 23 countries around the world in 2022. In Bayer's "PRO Carbono" program, the biggest carbon program in Brazil, the carbon emissions per metric ton of soybeans produced are 70% lower than the Brazilian national average. The Bayer Carbon Program was further expanded in ten countries in 2022.

In 2022, our Pharmaceuticals Division continued to drive forward its transformation process in research and development. For example, the utilization of novel technologies has enabled us to unlock new ways of developing precision therapeutics to address traditionally undruggable targets for severe cancers and immune disorders. In 2022, we launched a new strategic partnership with Tavros Therapeutics, Inc., United States, through our subsidiary Vividion Therapeutics, Inc., United States, to discover and improve targeted oncology programs. Tavros and Vividion leverage their functional and computational genomics technology platforms to uncover unique vulnerabilities within tumors, discover novel targets and biomarkers in areas of high unmet clinical need, and identify novel clinical positioning strategies for existing molecules. Our cell and gene therapy platform was significantly strengthened in 2022 through a collaboration with California-based Mammoth Bioscience, Inc. in the field of innovative gene-editing technology (CRISPR systems). Our subsidiary BlueRock Therapeutics LP, United States, which had previously undertaken research activities exclusively in the United States and Canada, began establishing its European center for cell therapy innovation in Berlin in 2022, thereby considerably strengthening our cell therapy presence and expertise. We also opened the new Bayer Research & Innovation Center (BRIC) in Boston-Cambridge, Massachusetts, United States. One of the world's most modern research centers for molecular precision oncology, it aims to advance the development of novel, personalized cancer therapies. The site location on Kendall Square in Cambridge will foster close collaboration with leading scientists and enhance the global network of academic, hospital and biotech industry partners.

The Bayer Science Collaboration Explorer, a cross-divisional initiative launched in Germany in 2021, was also rolled out in the United States in 2022 to strengthen public trust in our innovations, scientific processes and R&D organization. This initiative is aimed at creating more transparency over Bayer's scientific collaborations. As modern research and innovation raises numerous complex ethical questions, furthermore, Bayer at the end of 2021 established an external advisory body of independent experts known as the Bayer Bioethics Council. The Council members met in person in Berlin for the first time in June 2022. The Council's role is to identify relevant bioethical questions and advise Bayer on how to respond to these issues. It will prioritize ethical aspects in connection with healthcare and agriculture, including the effects of digitalization on these industries.

Leaps by Bayer

Through our risk capital entity Leaps by Bayer, we invest in disruptive innovations in the areas of health and agriculture. The investment activities of Leaps by Bayer are focused on applying and further developing new technologies with the potential to solve some of humankind's most pressing problems and thus also make an important contribution to the Sustainable Development Goals of the United Nations. The framework established for the adoption of new activities is defined by the ten "leaps":

// Cure genetic diseases
// Provide sustainable organ and tissue replacement
// Reduce environmental impact of agriculture
// Prevent and cure cancer
// Protect brain and mind
// Reverse autoimmune diseases and chronic inflammation
// Provide next-generation healthy crops
// Develop sustainable protein supply
// Prevent crop and food loss
// Transform health with data

The Leaps by Bayer portfolio comprised investments in more than 50 biotech and tech start-ups at the end of 2022.

Examples of the wide-ranging activities of Leaps by Bayer in the field of healthcare in 2022 included the development of innovative therapeutic approaches to treat cancer and genetic diseases.

In connection with Leap "Prevent and cure cancer," Leaps participated in an investment by Capstan Therapeutics Inc., United States. Through its precision in vivo cell engineering technology, Capstan Therapeutics aims to address current challenges in the development of cell therapies such as obstacles to production, cost minimization and accessibility. Leaps also invested in Affini-T Therapeutics, Inc., United States, a start-up working on therapies for currently difficult-to-treat solid tumors characterized by high mortality rates, such as lung cancer, colon cancer and pancreatic cancer. In addition, Leaps joined an investment round for Indapta Therapeutics Inc., United States, which is focused on developing an allogeneic cell therapy. Leaps also invested in ReCode Therapeutics, Inc., United States, and that company's selective organ targeting (SORT) lipid nanoparticle technology (LNP) platform, a nonviral transport approach which aims to drive forward the development of new gene therapies. In 2022, Leaps also invested for the first time in a mental health solution through its participation in a round of financing for Woebot Labs, Inc., United States (Woebot Health), which has developed an AI-supported, chat-based "digital therapist".

In the agriculture sector, there were significant projects involving a number of Leaps portfolio companies and our Crop Science Division in 2022. Ginkgo Bioworks, Inc., United States, acquired Bayer's research and development facilities for agricultural biologicals in West Sacramento, a move which also gave Bayer exclusive access to the technologies of the Leaps joint venture Joyn Bio. In August, furthermore, we announced the acquisition of a majority stake in the Leaps portfolio company CoverCress Inc., United States. CoverCress produces a sustainable oilseed that can be planted as a cover crop, which has additional positive effects on soil health.

By participating in a financing round for NuCicer, Inc., United States, which develops chickpeas with an up to 75% higher protein content than conventional varieties, Leaps strengthened its existing portfolio of alternative and sustainable protein sources. NuCicer utilizes proprietary machine learning to compare genetically different chickpeas and employs genomics-guided technology to enable the production of ultra-high-protein varieties.

Patents protect Bayer's intellectual property

Reliable global protection of intellectual property rights is particularly important for an innovation company like Bayer. In most cases, it would be impossible to cover the high costs and risks incurred in the research and development of innovative products without this protection. We are therefore committed worldwide to protecting both the international patent system and our own intellectual property. Depending on the legal framework, we endeavor to obtain patent protection for our products and technologies in major markets. When we successfully market patent-protected products, we are able to invest the profits sustainably in research and development.

The term of a patent is normally 20 years from the date the application is filed. Since it takes an average of 11 to 13 years to develop a new medicine or crop protection active ingredient, only seven to nine years of patent protection remain following the product's approval. The same applies to the development of new transgenic traits. To nevertheless provide an adequate incentive to make the necessary major investments in research and development, the European Union member states, the United States, Japan and some other countries extend patent terms or issue supplementary protection certificates to compensate for the shortening of the effective protection period for pharmaceutical and crop protection patents, but not for transgenic traits.

Crop Science

Working with digital applications and teams of experts, we develop a broad spectrum of tailored solutions that enable farmers to achieve higher productivity in a sustainable manner. Our R&D organization comprises approximately 7,700 employees (2021: 7,300) operating in more than 60 countries around the world. We also collaborate with a large number of external partners under our Open Innovation model to strengthen our innovation power.

Research and development capacities

Our R&D is focused on developing solutions for farmers and customers across multiple indications, through multiple technology platforms, in order to sustainably increase agricultural productivity while better protecting natural resources. Using a targeted approach, we focus on bringing together our expertise across the following disciplines to deliver innovation faster.

Our **breeding** innovations are aimed at improving crop yields, boosting resiliency against pests, disease and a changing climate, and improving quality. We combine genomic, phenotypic and environmental data with the use of advanced breeding methods and artificial intelligence (AI) to develop novel seed products. Our product design centers in Petrolina (Brazil), Marana (United States) and Juana Diaz (Puerto Rico) among others feature expansive, automated, controlled-environment greenhouses that accelerate the development of seed products for our largest markets. Through our advanced breeding program, we were able to deploy more than 500 new hybrid and varietal seed products in 2022, across corn, soybeans, cotton and vegetables.

Biotechnology and **genome editing** tools allow us to develop traits in crops like corn, soybeans, cotton and canola that strengthen plants' resistance to insect pests, disease, weeds and other environmental stresses such as drought or high winds, protecting or enhancing yields and in some cases reducing insecticide use. Biotechnology enables sustainable farming with reduced pesticide use and conservative tillage practices that are designed to preserve topsoil and decrease CO_2 emissions. We are the global leader in plant biotechnology and have 12 next-generation traits in development.

In our **small molecule chemistry** program, we discover, develop and optimize new, safe and sustainable crop protection products with herbicidal, insecticidal and fungicidal activity. We are working on tailored solutions that will help farmers achieve better harvests by managing threats in a more targeted manner. With hundreds of new Crop Protection product registrations annually, our life-cycle management program allows us to extend the reach of our products into new crops and geographies. Discovering new modes of action (MOAs) is one of our main priorities, contributing to finding improved solutions for our customers' needs and achieving our sustainability targets, with a particular focus on reducing the environmental impact of crop protection.

Our approach in **biologicals** encompasses a broad range of solutions with a focus on microbial organisms and materials derived from them as well as plant extracts. Biologicals have the potential to reduce the use of synthetic chemicals, decrease residue levels and support resistance management strategies. By introducing biological products into programs with traditional chemistry, we are building a more holistic application system. We are continuing to realign our activities in this field by partnering with innovation leaders and strengthening internal R&D activities around product development and support to product launch.

From farmer to consumer, **digital solutions** and data science are accelerating agricultural technology and enhancing decision-making across the value chain. Our digital capabilities continue to expand, offering solutions and insights for unique conditions globally through digital platforms, tailored solutions, and value-chain solutions. With Climate FieldView™, our digital farming platform, we have insight into field-specific information that enables us to use novel modeling to make custom product recommendations that are precisely tailored to each individual field. With these insights we can maximize the value of our seed and chemistry portfolio, help farmers expand participation in the carbon markets and food, feed, fiber and fuel value chains, and lead Bayer toward digitally enabled business models and new opportunities for growth.

Research and development pipeline

Our product pipeline contains numerous new small molecule products, seed varieties, digital products and biologicals that promote sustainable agriculture and help improve farmer productivity. The following table shows new products in late development phases[1] that are scheduled to be launched by 2024.

[1] Products in late development phases have proven proof of concepts validated by field studies and are ready for hand-off to the regulatory team for regulatory approvals.

A 1.3/1

Product Innovation Pipeline[1]

Crop/digital application	First launch	Product group	Indication	Product/trait/number of hybrids or varieties
Corn	Annual	Breeding/native trait	Crop efficiency	>250 new corn seed hybrids in 2022
	2023	Breeding/native trait	Crop efficiency	Short Stature Corn
	2024	Biotechnology trait	Pest management	VT4PRO™
Soybeans	Annual	Breeding/native trait	Crop efficiency	~ 150 new soybean seed varieties in 2022
Cotton	Annual	Breeding/native trait	Crop efficiency	>10 new cotton seed varieties in 2022
	2023	Biotechnology trait	Pest management	ThryvOn™ Technology
Crop Protection	Annual	Biological/small molecule LCM[2]	Crop efficiency, disease, pest and weed management	10 new formulations of crop protection products in 2022
	2024	Crop protection	Pest management	Plenexos (spidoxamat)
Vegetables	Annual	Breeding/native trait	Crop efficiency, disease management	> 90 new seed varieties in 2022
Digital applications	2023	Digital platforms	Platform	Microsoft partnership, providing B2B agricultural technology services
	2023	Value chain solutions	Carbon markets	Enable offset and inset approaches for carbon markets in North America, while advancing our pilot projects in other regions
	2024	Tailored solutions	Crop efficiency	Corn seed hybrid selection and planting density recommendations for Brazil & Europe

As of December 2022
[1] Planned market launch of selected new products, subject to regulatory approval
[2] Life cycle management

In 2022, we launched confirmatory technical proof-of-concept field studies for two new small-molecule or biological active ingredients and plant traits[2]. For 2023, we aim to launch confirmatory technical proof-of-concept field studies for two to three new small-molecule or biological active ingredients and plant traits.

New products and registrations in 2022 (examples)

SmartStax™ PRO, our third-generation corn rootworm trait, was launched in the United States in 2022. This technology combines the benefits of SmartStax™ with a novel RNAi-based mode of action that provides growers with the maximum level of protection in medium- to very high-pressure corn rootworm environments.

Our newest corn offering, VT4PRO™, received commercial registrations in the United States in 2022. This biotech trait also contains an RNAi-based mode of action and combines it with our Trecepta™ above-ground pest package. It will complement other products like SmartStax™ PRO in low-to-moderate corn rootworm pressure conditions, along with potential higher risk for corn earworm or western bean cutworm. Pending state registrations, we expect to launch commercial volumes as early as 2024.

ThryvOn™ Technology is the industry's first cotton biotechnology trait that provides protection through built-in trait technology against key tarnished plant bugs and thrips species and may help reduce the number of insecticide applications needed to control these insects. Following the limited introduction in 2022, this technology is now available in the United States for the 2023 cotton season.

TriVolt™ corn herbicide is a new addition to our broad Crop Protection portfolio and received regulatory approval in the United States in 2022. This new corn herbicide formulation provides broad-spectrum and consistent broadleaf weed and grass control for visibly clean fields, offering residual activity for up to eight weeks. TriVolt™ brings built-in resistance management and consistently high levels of weed control for corn growers.

[2] A new plant trait is a specific characteristic that has not yet been available or offered at Bayer for the crop plant in question.

In Australia, we launched Mateno™ Complete, a grass and broadleaf weed pre-emergent and early post-emergent herbicide for use in wheat and barley, in 2022. With aclonifen, it introduces a new mode of action for Australia in a complementary co-formulation with pyroxasulfone and diflufenican herbicides. In addition, we introduced Xivana™, a foliar fungicide for fruits and vegetables. Its active ingredient fluoxapiprolin offers Australian wine growers a new fungicidal mode of action with high efficacy at very low dose rates and a strong safety profile for pollinators and beneficial insects.

We pre-launched our new fungicide Fox™ Supra[3] in Brazil and Paraguay in 2022, providing growers with a new active ingredient, Indiflin™, to defend their harvests and strengthening our leading position in this market segment. Fox™ Supra offers two complementary modes of action providing control of Asian soybean rust and will complement our broad-spectrum solution Fox™ Xpro in seasonal spray campaign to help farmers achieve higher yields.

FieldView™ expanded its global footprint to include Australia in 2022, the first offering of the digital platform in the Asia-Pacific region. The platform will improve on-farm insights and decision making for cotton, canola, and cereal crop growers in the country, as well as allow for future development of digitally enabled new business models.

Patents

We routinely apply for patent protection for our innovations in both chemical crop protection and seed / biotechnology. The link between patents and products is relatively complex. Products often combine multiple technologies that are patented differently in different areas of the world, with patents often granted only late in the product life cycle.

Although the patents have already expired for some of our crop protection active ingredients, such as glyphosate, trifloxystrobin, prothioconazole[4] or imidacloprid, we have a portfolio of patents on formulations, mixtures and / or manufacturing processes for these active ingredients. In addition, some of our younger active ingredients such as fluopyram and bixafen are still patent-protected in the United States, Germany, France, the United Kingdom, Brazil, Canada and other countries until at least 2023. Fluopyram is patent-protected until 2024 in the United States and 2025 in Brazil.[5] Tetraniliprole has patent protection until 2029 in Germany, France, the United Kingdom, Brazil, Canada and other countries, and in the United States its patent protection extends until 2030.

While our patent coverage on the first-generation Roundup Ready™ trait for soybeans has expired, some varieties – for example in the United States – are still protected by variety patents. The patent coverage on our current generation of soybean traits (Roundup Ready 2 Xtend™, XtendFlex™ and Intacta 2 Xtend™) runs until at least the end of the decade.

In corn seed and traits, most farmers have already upgraded to next-generation branded corn traits. SmartStax™ and SmartStax™ PRO have patent coverage running until at least 2028. For cotton seed and traits, Bollgard™ 3 XtendFlex™ has patent coverage until at least the mid-2030s.

[3] Co-development with Sumitomo Chemical Co., Ltd., Japan
[4] The last supplementary protection certificates for prothioconazole in some CIS countries expired in 2020.
[5] Patent protection does not take into account patent term extensions or supplementary protection certificates.

Partnerships and collaboration

As the established partner of choice in agriculture research and development, we bring specialist knowledge, resources, and enhanced expertise to our partners so that growers worldwide can benefit from a global community of solutions-oriented innovators.

New business models

We announced a regenerative farming collaboration with Perdue AgriBusiness, United States, in September, aimed at large-scale carbon emission reductions and creating a model for a more sustainable food value chain spanning Perdue's entire grain network. The collaboration leverages the strengths and scale of both organizations to create a blueprint for businesses to assess their carbon footprint and rapidly scale up their ability to reduce Scope 3 emissions. It is the first-of-its-kind collaboration under our new ForGround platform that was launched in August and will transform the way farms of all sizes can more easily make the transition to sustainable agricultural practices. In October we also announced a collaboration to scale Nori's carbon removal offset marketplace, aimed at adding Bayer-owned carbon removal offsets to the marketplace and envisioning the enhancement of the offering within our ForGround platform to enable even more growers to benefit from environmentally sustainable farming practices.

Sustainability

We acquired a majority share in CoverCress Inc., in August, whose namesake rotational cash crop combines oil seed production with the environmental benefits of a cover crop without displacing other harvests. Oil extracted from CoverCress™ grain is designed to achieve a lower carbon intensity score and can be made into renewable diesel, for example. With Bayer and fellow owners Bunge Ltd., United States, and Chevron Corp., United States, as contractual partners, CoverCress Inc. is represented by the full value chain, highlighting the incredible potential of this new crop for farmers.

With our support, researchers at the University of California, Davis have shown promise in reducing the amount of nitrogen fertilizers needed to grow cereal crops. This research could potentially improve farmer economics and benefit the environment.

Crop Protection

In October, we began a multi-year strategic partnership with Ginkgo Bioworks, Inc., United States, to accelerate research and development of biological products. This includes the continued advancement of Joyn Bio's innovative nitrogen fixation platform and gives Bayer the exclusive right to commercialize the technology in the coming years.

Bayer and Targenomix GmbH, Germany, have been working together successfully since 2014, with the discovery and development of the industry's first new post-emergence herbicide mode of action (MOA) for broadacre weed control in 30 years supported by the collaboration. This molecule has demonstrated effective control of key resistant grasses in research and is expected to be commercialized towards the end of this decade.

In 2019, the collaboration was extended to identify biomarkers through the Targenomix computational life sciences platform, allowing prediction of the safety of crop protection candidates at an early stage in the research and development process. Bayer acquired Targenomix in November and their expertise, personnel, and platforms will be an important part of delivering on Bayer's commitment to the design of safe and effective molecules, with the potential to make agricultural production more sustainable.

Bayer and the agricultural biotech company Oerth Bio have begun a new collaboration seeking to develop the next generation of more sustainable crop protection products. Initially developed to fight human diseases like cancer and other difficult-to-treat diseases, Oerth's patented PROTAC™ (PROteolysis TArgeting Chimera) protein degradation technology provides an innovative pathway to entirely novel crop protection and climate resilient farm solutions. Oerth Bio remains the first and only company researching agricultural PROTAC™ solutions.

We are part of a global network of partners from diverse segments of the agricultural industry and work together with numerous public-private bodies, NGOs, universities, and other institutions.

The following table provides an overview of important collaborations that are currently ongoing.

A 1.3/2

Crop Science: Important Collaborations

Partner	Collaboration objective
AbacusBio Limited	Accelerate Bayer's Global Crop Breeding program by utilizing AbacusBio's expertise in trait prioritization and valuation to advance products that anticipate grower and market needs
Andes Ag, Inc.	Andes' process integrates microbes that colonize a seed's root structure, starting biological nitrogen fixation, and enabling the crop to draw down nitrogen from the air. This will contribute to the reduction of additional field inputs and ag-associated greenhouse gas production
BASF SE	Co-funded collaboration agreement to develop transgenic products with increased yield stability in corn and soybeans
Brazilian Agricultural Research Corporation – Embrapa	R&D cooperation to address specific agricultural challenges in Brazil, e.g. integrated weed management and soil carbon dynamics and measurement methods in tropical environments
2Blades Foundation	Collaboration research program to identify Asian soybean rust resistance genes in legumes and other engineered genes to control this important fungal disease in soybeans
Citrus Research Development Foundation, Inc.	Search for solutions to citrus greening disease, which currently threatens the global citrus production and juice industry
Elemental Enzymes Ag and Turf, LLC	Use of soil microbes to improve plant health and crop efficiency thereby increasing crop productivity
Grains Research and Development Corporation (GRDC)	Partnership for the discovery and development of innovative weed management solutions (herbicides)
Ginkgo Bioworks, Inc.	Multi-year strategic collaboration with Ginkgo as the anchor partner of Ginkgo's expanded agricultural biologicals platform, focusing on nitrogen fixation, crop protection, and carbon sequestration
KWS SAAT SE	Joint collaboration and commercial agreement for herbicide-tolerant sugar beet
Microsoft Corp.	Strategic partnership to develop a new cloud-based set of business-to-business tools and services for use in agriculture and adjacent industries
National Resources Institute Finland (Luke)	Computational tools integrating genetics and genomics evaluation to improve field crops
Oerth Bio LLC	Oerth Bio LLC was co-founded with the biotechnology firm Arvinas to utilize Arvinas' targeted protein degradation technology PROTAC™ to develop innovative new agricultural products to improve crop yields
Pairwise Plants, LLC	Research alliance to develop genome editing tools and products in corn, soybeans, cotton, oilseed rape/canola, and wheat
RAGT SEMENCES S.A.S	Bayer has entered an exclusive collaboration with RAGT to jointly develop state-of-the-art hybrid wheat varieties to meet the evolving needs of farmers in Europe
Rantizo, Inc.	Precision aerial pesticide applications via unmanned aerial vehicles (UAVs) while reducing soil compaction. Focusing the application of the right amount to the right plant allows an overall reduction in pesticide applications and of carbon emissions compared to traditional sprayers
Sentera, Inc.	Enables farmers to visualize and order imagery through FieldView™
Sound Agriculture Co.	Sound's dual-technology platform uses biochemistry to tap into the natural capabilities of the plant and soil microbiome to increase the speed and efficiency of agriculture
UC Davis-Eduardo Blumwald	Identify pathways in cereal crops to enhance biological nitrogen fixation and reduce need for chemical fertilizers

Pharmaceuticals

Our research and development activities in the Pharmaceuticals Division are focused on indications with a high medical need in the areas of cardiovascular disease, oncology and women's healthcare. In the context of our cell and gene therapy platform, we develop treatments for indications which are likewise associated with a high medical need and in which cell and gene therapies appear promising, regardless of the specific therapeutic area. Examples of this include neurodegenerative disorders, muscular dystrophies, cardiovascular and metabolic diseases, and ophthalmological disorders. Our work in radiology focuses on the development of digital solutions, contrast agents and injection systems. Approximately 7,900 (2021: 7,400) employees work in our R&D departments at a number of locations around the world, mainly in Germany, the United States, Japan, China, Finland and Norway.

In June 2022, as mentioned above in the “Excellence in research and development” section, we opened the new Bayer Research and Innovation Center (BRIC) in Boston-Cambridge, Massachusetts, United States. BRIC houses a new research center for molecular precision oncology and is also home to a newly established research team deploying chemical biology technologies to further advance the development of novel, targeted oncology drugs. The new center also strengthens the collaboration between our proven R&D teams, our US subsidiaries such as BlueRock Therapeutics, Inc., Asklepios BioPharmaceutical Inc. (AskBio) and Vividion Therapeutics, Inc., and our external partners. This total investment of US$140 million and the presence of currently 100 employees on site further expands our footprint at one of the world’s most innovative pharmaceutical research and development locations and means we are now represented at four of the largest biotechnology hubs in the United States – Boston, San Francisco, San Diego and Research Triangle Park.

In our R&D activities, we combine profound knowledge about disease biology with numerous therapy forms and focus on the systematic implementation of digital technologies and the deployment of data sciences to increase the speed, reliability and effectiveness of our R&D processes. Our aim is to employ precision medicine to offer patients effective, individuaiized solutions that prevent, diagnose, treat or even cure diseases.

We have invested consistently in new technology platforms with the acquisitions of the biotech firms BlueRock in 2019 and AskBio in 2020, and the biopharmaceutical company Vividion in 2021. In this way, we have expanded our expertise in new modalities to include competencies in the areas of cell therapy (BlueRock) and gene therapy (AskBio) while also strengthening our existing knowledge in the field of small-molecule substances (Vividion). As internal partners, these three companies operate largely autonomously but in close cooperation with our research and development experts in the Pharmaceuticals Division. They play a key role in sustainably expanding our research pipeline with novel, first-class development candidates. In 2022, the three companies further advanced their development portfolio and established additional expertise in specific areas. Further information can be found in the “Cell and gene therapy” and “External innovation” sections.

Promising new molecular entities from our early research pipeline are transferred to preclinical development. We define a new molecular entity (NME) as an active ingredient that is not yet approved for use in humans. In preclinical development, these substances are examined further in various models with respect to their suitability for clinical trials and the associated first-in-human studies.

Clinical trials are an essential tool for determining the efficacy and safety of new drugs before they can be used to diagnose or treat diseases. The benefits and risks of new medicinal products must always be scientifically proven and well documented. All our clinical trials comply with strict international guidelines and quality standards, as well as the respective applicable national laws and standards.

Bayer also publishes information about clinical trials in line with the applicable national laws and according to the principles of the European (EFPIA) and US (PhRMA) pharmaceutical industry associations, these principles being defined in position papers.

Information about our own clinical trials can be found in the publicly accessible register www.ClinicalTrials.gov and our own Trial Finder database. Further information on our globally uniform standards, the monitoring of studies and the role of the ethics committees can be found on our homepage.

Cell and gene therapy

The addition of cell and gene therapies to our drug development portfolio has given us new, transformative treatment approaches that enable us to target disease-specific structures and thus develop treatments that could potentially intervene in disease mechanisms and ultimately even cure them at some point in the future.

Robust manufacturing processes are a fundamental factor in the success of cell and gene therapies, and Bayer is investing in the know-how and infrastructure to ultimately bring these products to patients on a global scale. The acquisition of AskBio has now also provided Bayer with world-class GMP production facilities that allow not only manufacturing for internal demands, but also enable us to offer services to third parties via our dedicated Contract Development and Manufacturing Organization (CDMO).

We further expanded our cell and gene therapy development portfolio in 2022. It currently comprises seven projects in various stages of clinical development that cover several therapeutic areas with a high unmet medical need, with leading programs in Parkinson's disease, Pompe disease and congestive heart failure.

A 1.3/3

Cell and Gene Therapy Projects in Clinical Development

Project	Indication (modality, clinical phase)
AB-1005 (formerly AAV2_GDNF_PD)[1]	Parkinson's disease (gene therapy, Phase Ib)
ACTUS-101	Pompe disease (gene therapy, Phase I/II)
AB-1002 (formerly NAN-101)[2]	Congestive heart failure (gene therapy, Phase I)
AB-1005 (formerly AAV2_GDNF_MSA)[3]	Multiple system atrophy (gene therapy, Phase I/II)
Bemdaneprocel (BRT-DA01)[4]	Parkinson's disease (cell therapy, Phase I)
BV-101[5]	Huntington's disease (gene therapy, Phase I/II)
LION-101[6]	Limb-girdle muscular dystrophy type 2I/R9 (gene therapy, start of Phase I scheduled for 2023)

As of February 6, 2023
[1] Registration number NCT04167540, recruiting concluded
[2] Registration number NCT04179643, recruiting started
[3] Registration number NCT04680065, recruiting started
[4] Registration number NCT04802733, recruiting concluded
[5] Registration number NCT05541627; recruiting started
[6] Registration number NCT05230459, recruiting not yet started

The following material developments occurred in 2022:

// In May, BlueRock completed enrollment of its Phase I trial of BRT-DA01, a novel cell therapy for the treatment of Parkinson's disease.
// Also in May, we ended our collaboration with Atara Biotherapeutics, Inc., United States, which had been based on a license agreement for mesothelin-targeted CAR-T cell therapies to treat solid tumors.
// In June, we announced the establishment of the BlueRock site for cell therapy innovation on our campus in Berlin to enable the expansion and acceleration of the company's clinical trials in Europe.
// In August, BrainVectis, a subsidiary of AskBio, received clearance to conduct a Phase I/II clinical trial in France for its novel gene therapy for early-stage Huntington's disease (BV-101).
// In October, we decided not to pursue further development of the Phase I/II development candidate peboctocogene camaparvovec, an investigational gene therapy that was being evaluated for the treatment of adults with hemophilia A. All licensed rights for peboctocogene camaparvovec have reverted back to Ultragenyx Pharmaceutical, Inc., United States.
// In January 2023, Viralgen, a subsidiary of AskBio, announced that it had been granted cGMP (current Good Manufacturing Practice) certification for the production of gene therapy products at its new production facility in San Sebastián, Spain.

Phase II and III clinical testing projects

One of the most important substances in our Phase II and III clinical development is the Factor XIa inhibitor asundexian, with which we are continuing to innovate in thrombosis management in the field of cardiovascular disease. Despite the major progress made in the prevention and treatment of thrombosis in the last 15 years, many patients eligible for anticoagulation treatment are currently undertreated, be it due to a fear of associated potential bleeding complications or because current therapies are not suitable for certain patient groups. Inhibiting Factor XI(a) makes it possible to selectively modulate coagulation, blocking the formation of pathological blood clots (for example, those that may cause stroke) while allowing healing blood clots to form (for example, after an injury). Focusing on Factor XI(a) inhibition, we are striving for another paradigm shift to investigate a new class of antithrombotics with the potential of an improved benefit-risk profile compared to the current standard of care.

The following table shows our most important drug candidates currently in Phase II of clinical testing:

A 1.3/4

Research and Development Projects (Phase II)

Project	Indication
Adrenomedullin Pegol (PEG-ADM inhale)	Acute respiratory syndrome
Asundexian (FXIa inhibitor)	Prevention of major adverse cardiac events (MACE)
Gadoquatrane (MRI contrast agent)	Magnetic resonance imaging
BAY 2395840 (BDKRB1 antagonist)	Neuropathic pain
Regorafenib + nivolumab combination[1]	Recurrent or metastatic solid tumors
Runcaciguat (sGC activator)	Chronic kidney disease
Runcaciguat (sGC activator)	Non-proliferative diabetic retinopathy
Zabedosertib (IRAK4 inhibitor)	Atopic dermatitis

As of February 6, 2023

[1] In collaboration with Bristol-Myers Squibb Company Co., United States, and Ono Pharmaceutical Co., Ltd., Japan

The following table shows our most important drug candidates currently in Phase III of clinical testing:

A 1.3/5

Research and Development Projects (Phase III)

Project	Indication
Asundexian (FXIa inhibitor)	Prevention of stroke in atrial fibrillation patients
Asundexian (FXIa inhibitor)	Secondary prevention of stroke
Copanlisib (PI3K inhibitor) + chemotherapy combination	Second-line therapy of indolent non-Hodgkin lymphoma (iNHL)
Darolutamide (ODM-201, AR antagonist)	Hormone-sensitive metastatic prostate cancer
Darolutamide (ODM-201, AR antagonist) / ADT without chemotherapy	Adjuvant treatment for localized prostate cancer with very high risk of recurrence
Elinzanetant (neurokinin 1,3 receptor antagonist)	Vasomotor symptoms
Finerenone (MR antagonist)	Heart failure with mid-range or preserved ejection fraction
Finerenone (MR antagonist)	Non-diabetic chronic kidney disease
Vericiguat (sGC stimulator)[1]	Stable heart failure with reduced ejection fraction (HFrEF)

As of February 6, 2023

[1] In collaboration with Merck & Co., Inc., United States

The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and/or commercial reasons and will not result in commercialized products. It is also possible that the requisite US Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds. Moreover, we regularly review our research and development pipeline so that we can give priority to advancing the most promising pharmaceutical projects.

The following material developments occurred in 2022:

Asundexian

// In February, we announced that the US Food and Drug Administration (FDA) had granted Fast Track Designation for asundexian as a potential treatment for secondary prevention in patients with a non-cardioembolic ischemic stroke.
// In April, we presented results from the Phase IIb PACIFIC-AF trial on the safety of asundexian in patients with atrial fibrillation (AF).
// In August, we presented results from the Phase IIb PACIFIC-STROKE and PACIFIC-AMI trials on the safety of asundexian in the indications of secondary stroke prevention and acute myocardial infarction (AMI), respectively.
// Also in August, we launched the OCEANIC trial program comprising two Phase III trials to investigate the efficacy and safety of asundexian for stroke prophylaxis in patients with atrial fibrillation and in patients with a non-cardioembolic ischemic stroke or high-risk transient ischemic attack.

Aflibercept

// In September, aflibercept 8 mg met the primary endpoint in two pivotal Phase III trials in patients with neovascular (wet) age-related macular degeneration (nAMD) and diabetic macular edema (DME) at week 48[6]. The PULSAR trial in nAMD and the PHOTON trial in DME evaluated the noninferiority of the two aflibercept 8 mg extended-dosing regimens (12 and 16 weeks) in terms of best corrected visual acuity compared to Eylea™ (aflibercept 2 mg) dosed every 8 weeks following initial monthly doses. In these trials, the safety of aflibercept 8 mg was consistent with the well-established safety profile of Eylea™. We will submit these data to regulatory authorities outside of the United States.

[6] In collaboration with Regeneron Pharmaceuticals, Inc., USA

Elinzanetant

// In October, we expanded the Phase III clinical development program OASIS by initiating OASIS 4, a Phase III study investigating elinzanetant as a nonhormonal treatment in breast cancer patients and women with high risk for breast cancer with vasomotor symptoms caused by endocrine therapy.

Fesomersen and osocimab

// In November, we announced our decision to discontinue the development of two parenteral investigational candidates: fesomersen, a Factor XI ligand-conjugated antisense medicine licensed from IONIS Pharmaceuticals, Inc., United States, and osocimab, an anti-Factor XIa (FXIa) antibody. This follows the company's decision to focus on further developing asundexian, an investigational oral Factor XIa (FXIa) inhibitor. For fesomersen, the rights and licenses granted by Ionis to Bayer under the collaboration will be returned to Ionis.

TASK channel blocker

// In April, based on the results of the Spray Smart study, we decided to not pursue further development activities for the TASK (TWIK-related Acid-Sensitive K^+) channel blocker in the indication of obstructive sleep apnea.

Pecavaptan

// In March, we decided to not pursue further development activities for pecavaptan, a dual vasopressin receptor antagonist, in the indication of heart failure due to scientific reasons.

Regorafenib + pembrolizumab combination and regorafenib (multi-kinase inhibitor)

// In November, we decided to halt two development projects with regorafenib. These projects investigated the treatment of inoperable hepatocellular carcinoma as a second-line therapy in combination with pembrolizumab and the treatment of diagnosed or recurrent glioblastoma.

Filings and approvals

The most important drug candidates currently in the approval process are:

A 1.3/6

Main Products Submitted for Approval

Project	Region	Indication
Aflibercept 8mg (VEGF inhibitor)[1]	USA[2], EU	Diabetic macular edema (DME)
Aflibercept 8mg (VEGF inhibitor)[1]	USA[2], EU	Neovascular age-related macular degeneration (nAMD)
Darolutamide (ODM-201, AR antagonist) / ADT with chemotherapy	EU, Japan, China	Hormone-sensitive metastatic prostate cancer

As of February 6, 2023

[1] In collaboration with Regeneron Pharmaceuticals, Inc., United States

[2] Submitted by Regeneron Pharmaceuticals, Inc., United States

Finerenone

// In February, based on the positive results of the Phase III FIDELIO-DKD study, we received marketing authorization in the European Union for Kerendia™ (finerenone) for the treatment of chronic kidney disease (stage 3 and 4 with albuminuria) associated with type 2 diabetes in adults. In March, this product was approved in Japan for the treatment of chronic kidney disease and type 2 diabetes in adults, excluding patients with end-stage renal disease or on dialysis. The approval was based on the results of the Phase III FIDELIO-DKD and FIGARO-DKD studies. In June, we received marketing authorization for Kerendia™ in China for the treatment of chronic kidney disease (eGFR of ≥ 25 to 75 mL/min/1.73 m2 with albuminuria) associated with type 2 diabetes in adults, to reduce the risk of sustained eGFR decline and end-stage kidney disease. The approval is based on the results of the Phase III FIDELIO-DKD study.

// In September, we received approval from the US Food and Drug Administration for a label update for Kerendia™ to include findings from the Phase III FIGARO-DKD cardiovascular outcomes study in patients with chronic kidney disease associated with type 2 diabetes.
// In February 2023, the European Commission granted approval in the EU for a label update to extend the indication of Kerendia™ to early stages of chronic kidney disease (CKD) associated with type 2 diabetes.

Rivaroxaban (FXa inhibitor)

// In March, the oral Factor Xa inhibitor rivaroxaban (Xarelto™) was approved in China for the treatment of venous thromboemobolism (VTE) and the prevention of recurrent VTE in neonates, children and adolescents aged less than 18 years. The suspension for oral administration was likewise granted regulatory approval in May.
// In June, rivaroxaban was approved in Japan for the treatment of patients with peripheral artery disease (PAD) after revascularization (twice daily (2.5 mg), used in combination with aspirin). The approval is based on data from the Phase III VOYAGER PAD trial. In September, regulatory approval in the indication PAD was granted by the authorities in China.

Vericiguat

// In May, vericiguat was approved in China under the brand name Verquvo™ for the treatment of adults with symptomatic chronic heart failure and reduced ejection fraction (less than 45%) who are stabilized after a recent decompensation event with intravenous therapy to lower the risk of heart failure hospitalization or the need for intravenous diuretics in emergency care.

Aflibercept

// In September, the Ministry of Health, Labour and Welfare (MHLW) in Japan approved a label extension for Eylea™ for the treatment of preterm infants with retinopathy of prematurity (ROP). The European Union granted approval in December. Both approvals were based on data from the Phase III FIREFLEYE study and the results of the FIREFLEYE NEXT follow-up study.
// In February 2023, we submitted an application to the European Medicines Agency (EMA) for regulatory approval of aflibercept 8 mg in two frequent retinal diseases: neovascular (wet) age-related macular degeneration (nAMD) and diabetic macular edema (DME).

Darolutamide

// In March, based on positive data from the Phase III ARASENS trial, we submitted a supplemental new drug application in the United States for the oral androgen receptor inhibitor Nubeqa™ for the treatment of metastatic hormone-sensitive prostate cancer (mHSPC), and were granted priority review status for this product. We also submitted applications in the European Union, Japan and China to expand the product's approval in this indication. The ARASENS trial demonstrated a statistically significant improvement in overall survival for darolutamide plus androgen deprivation therapy (ADT) and docetaxel in patients with mHSPC compared with patients who had only received ADT plus docetaxel.
// In August, the US Food and Drug Administration approved a label extension for darolutamide in combination with docetaxel for the treatment of patients with metastatic hormone-sensitive prostate cancer.
// In January 2023, darolutamide was recommended for marketing authorization in the EU for the treatment of patients with metastatic hormone-sensitive prostate cancer.

Larotrectinib

// In April, our precision oncology drug Vitrakvi™ (larotrectinib) was granted regulatory approval in China. Larotrectinib is indicated for the treatment of adult and pediatric patients with advanced solid tumors that display a neurotrophic tyrosine receptor kinase (NTRK) gene fusion.

Mirena™

// In August, the long-acting intrauterine system Mirena™ was approved in the United States for an extended duration of use in contraception of up to eight years. The corresponding approval procedure in Europe was positively concluded in October, and the first national approvals in the EU were granted in the fourth quarter of 2022. This regulatory approval is based on the results of the Mirena™ Extension Trial evaluating the efficacy and safety of Mirena™, which demonstrated that contraceptive efficacy remains high with greater than 99% efficacy during years six to eight of use.

Radiology

// In the area of digital health solutions, we announced in 2022 the launch of Calantic™ Digital Solutions, a new platform delivering access to digital applications, including artificial intelligence-enabled programs for medical imaging. The offering contains tools which aid radiologists and their teams in improving prioritization, lesion detection, quantification and productivity. Through the launch of Calantic™ Digital Solutions, we are expanding our radiology portfolio beyond contrast media, injection systems, software and services. The first launch markets will include the United States and several European countries.
// In August, we submitted our MEDRAD™ Centargo CT injection system, the latest product in our computed tomography portfolio for radiology workflow optimization, for regulatory approval in the United States.
// In January 2023, we received a label extension on EU level for use of our Ultravist™ 300 and 370 contrast agents in contrast-enhanced mammography. The label extension covers the identification and evaluation of breast tumors in addition to mammography or as an alternative in cases where magnetic resonance imaging (MRI) is contraindicated or unavailable.

Patents

The following table shows the expiration dates for our most significant Pharmaceuticals patents:

A 1.3/7

Pharmaceuticals Patent Expiration Dates

Products	Market										
	Germany	France	Italy	Switzer-land	Spain	UK	China	Japan	Brazil	Canada	USA
Adempas™											
Active ingredient	2028	2028	2028	2028	2028	2028	2023	2027–2028[d]	2023	2023	2026
Eylea™											
Active ingredient	2025	2025	2025	2025	2025	2025	–	2021–2025[e, d]	–	–	–
Jivi™											
Active ingredient	2025[a, g]	2031[h]	2031[h]	2030[g]	2031	2025[a]	2025	2027	2025	2027	2025[a]
Kerendia™											
Active ingredient	2028[a]	2028[a]	2033[e]	2033[e]	2028[a]	2028[a]	2028[a]	2028[a]	2028	2028[f]	2028[a]
Nexavar™											
Active ingredient	–	–	–	–	–	–	–	2021–2025[d]	–	–	–
Nubeqa™											
Active ingredient	2035[e]	2035[e]	2035[e]	2030[a]	2035	2030[a]	2030	2035	2030	2032	2030[a]
Stivarga™											
Active ingredient	2028	2028	2028	2028	2028	2028	2024	2026[d]	2024	2024	2031
Verquvo™											
Active ingredient	2031[a]	2036[e]	2036[e]	2036[e]	2036[e]	2031[a]	2031[a]	2031[a]	2031[b]	2031[f]	2031[a]
Vitrakvi™											
Active ingredient	2034[e]	2034	2034	2034	2034	2029[a]	2029[a]	2034[e]	2029	2031	2029[a]
Xarelto™											
Active ingredient	2024	2024[h]	2024	2024	2024[h]	2024[h]	–	2022–2025[d]	2020	–	2025[i]
Xofigo™											
Use	2024	2024	2024	2024	2024	2024	–	2022	–	–	2022

[a] Current expiration date; patent term extension applied for
[b] Patent application pending
[c] Patent term revised
[d] Application-specific patent term extension(s)
[e] Patent term extension granted
[f] Current expiration date; patent term extension will be applied for punctually
[g] Pediatric SPC extension applied for
[h] Pediatric SPC extension granted
[i] Including six-month period of pediatric exclusivity granted by the regulatory authority following patent expiration in 2024

In addition to the information in the table, it should be noted that in Europe our Xarelto™ 10, 15 and 20 mg tablets are protected by a patent granted by the European Patent Office for once-daily dosing until 2026. This patent has been successfully defended at European level but is being attacked again at the national level in a number of countries. We are confident that we will be able to ward off such attacks. In the case of such secondary patents, there is also the risk of an attempt to circumvent them. However, we will take vigorous action against any infringement of this patent.

In the United States, our Xarelto™ 10, 15 and 20 mg tablets are also protected by a patent for once-daily dosing beyond 2025. There have already been patent law disputes that have been settled through settlements, including with Unichem, Inc. and Unichem Pharmaceuticals (USA), Inc. (collectively “Unichem”). According to the settlement with Unichem, Unichem will be licensed under the relevant patents to market a generic version of Xarelto™ 10, 15 and 20 mg tablets from 2027 or earlier in certain circumstances, which we do not expect at this time. In the United States,

as in Europe, there is a risk of attempts to circumvent and attacks on this patent by previously uninvolved competitors from 2025 onwards.

External innovation

We achieved significant progress in the area of external innovation – a strategic cornerstone of our R&D strategy – in 2022. This includes acquisitions of companies that are engaged in research in our core therapeutic areas:

// In February, AskBio secured 100% ownership of TAAV Biomanufacturing Solutions, SL, based in San Sebastián, Spain, for its production of research, clinical and commercial adeno-associated virus (AAV) doggybone DNA (dbDNA™) technology. dbDNA™ has the potential to enable faster, safer and more scalable DNA production than other traditional methods without contamination of the plasmid DNA backbone.
// In January 2023, we announced the acquisition of Blackford Analysis Ltd., United Kingdom. Blackford is a global provider of platform technologies for artificial intelligence (AI) in radiology. The acquisition will help us advance innovation in medical imaging, including the development of AI-supported offerings for clinical workflows.

The following developments also took place in our collaboration projects:

// In October, Vividion announced a collaboration with Tavros Therapeutics, Inc., United States, to conduct research into vulnerabilities within tumors in the context of specific mutations, with the objective of laying the foundations for the development of new precision oncology treatments and identifying novel clinical positioning strategies for existing molecules.
// In January 2023, we announced a collaboration with Google Cloud EMEA Limited, Ireland. The objectives of the collaboration are to accelerate and scale quantum chemistry calculations using Google Cloud's Tensor Processing Units (TPUs) and to demonstrate fully quantum mechanical modeling of protein-ligand interactions to accelerate drug discovery and development.
// Likewise in January 2023, AskBio announced a strategic collaboration with ReCode Therapeutics Inc., United States, aimed at jointly developing a single vector gene-editing platform for novel precision genetic medicines. The collaboration will advance AskBio's capabilities in the areas of gene editing and other nonviral delivery technologies.

The following table provides an overview of additional significant ongoing partnerships and collaborations newly formed in 2022:

A 1.3/8

Main Collaboration and Licensing Partners

Partner	Collaboration objective
Arvinas Inc.	Research collaboration in the field of life sciences using novel PROTAC™ (proteolysis-targeting chimeras) technology from Arvinas to develop new pharmaceuticals to treat cardiovascular, oncological and gynecological diseases
Bill & Melinda Gates Foundation	Grant agreement to advance innovations in the field of non-hormonal contraception
Brigham and Women's Hospital and Massachusetts Hospital	Collaboration and joint laboratory for research into new drug candidates to treat chronic lung diseases
Bristol-Myers Squibb Co. und Ono Pharmaceutical Co., Ltd.	Clinical collaboration to evaluate new combination possibilities for Stivarga™ (regorafenib) with immuno-oncologics
Broad Institute	Strategic partnership to research and develop new therapeutic options in the fields of cardiovascular medicine and oncology, and establishment and operation of a joint cardiology research laboratory
Curadev Pvt. Ltd.	Research collaboration to identify and develop new drug candidates for the treatment of lung, cardiovascular and other inflammatory diseases, and a licensing agreement for Curadev's STING (Stimulator of Interferon Genes) antagonists program
Daré Bioscience Inc.	License agreement for US commercial rights to hormone-free contraceptive Ovaprene™ in the future
German Cancer Research Center (DKFZ)	Strategic partnership to research and develop new therapeutic options in oncology, especially in immunotherapy, and establishment of a joint research laboratory
Dewpoint Therapeutics, Inc.	Option, research and license agreement for the development of new treatments for cardiovascular and gynecological diseases, with the partnership leveraging Dewpoint's proprietary platform for biomolecular condensates and Bayer's compound library
Editas Medicine, Inc.	License agreement to use Editas CRISPR genome editing technologies in support of BlueRock's portfolio in neurology, cardiology, and immunology
Evotec SE	Cooperation and licensing agreements to identify development candidates for the treatment of endometriosis, kidney diseases and polycystic ovary syndrome (PCOS)
Foundation Medicine Inc.	Collaboration for the development and global commercialization of therapy-accompanying diagnostic tests, also known as companion diagnostics (CDx), based on next-generation sequencing for new cancer drugs developed by Bayer
Fujifilm Cellular Dynamics, Inc. & Opsis Therapeutics, LLC	Collaboration and option agreement for BlueRock focused on discovering and developing iPSC therapies for the treatment of ocular diseases, including inherited retinal disorders and dry-AMD
F. Hoffmann-La Roche Ltd. Hoffmann-La Roche Inc.	Multi-target collaboration employing Vividion's screening technology to develop new drug products for selected targets in oncology and immunology
Google Cloud EMEA Limited	Collaboration to accelerate quantum chemistry calculations for protein-ligand interaction modeling using Google Cloud's Tensor Processing Units (TPUs)
Informed Data Systems Inc. (One Drop)	Collaboration for co-development of digital healthcare products in a variety of therapeutic areas
Janssen Research & Development, LLC of Johnson & Johnson	Development and marketing of Xarelto™ (rivaroxaban) for the treatment of coagulation disorders
Mammoth Biosciences, Inc.	Strategic partnership in the field of gene editing, focusing on the development of in vivo therapies with target structures in the liver, and non-exclusive collaboration in the field of ex vivo gene editing
MD Anderson Cancer Center	Development collaboration in oncology
Merck & Co., Inc.	Development and marketing collaboration in the field of soluble guanylate cyclase (sGC) modulation
Orion Corporation	Development and marketing of darolutamide (previously ODM-201) for the treatment of patients with prostate cancer
Peking University	Research collaboration and establishment of a research center for joint projects
ReCode Therapeutics, Inc.	Strategic research collaboration for AskBio to jointly develop a single vector gene-editing platform for novel precision genetic medicines
Recursion Pharmaceuticals Inc.	Strategic partnership to conduct research into new treatments for fibrotic diseases of the lungs, kidneys, heart and other organs
Regeneron Pharmaceuticals, Inc.	Cooperation and license agreement for the brand Eylea™ and joint development of aflibercept 8 mg
Schrödinger, Inc.	Development of an artificial-intelligence-based platform for chemical compound design
Senti Biosciences, Inc.	Collaboration and option agreement is focused on applying SentiBio's gene circuit technology to enhance BlueRock's cell and gene platform to develop next-generation engineered cell therapies across multiple therapeutic areas
Tavros Therapeutics, Inc	Strategic research collaboration to identify and optimize targeted oncology programs for Vividion
Tsinghua University	Research collaboration and establishment of a research center for joint projects
University of Oxford	Strategic research partnership and licensing agreement to develop novel gynecological therapies
Vanderbilt University Medical Center	Strategic research alliance to identify and develop new potential active ingredients for the treatment of kidney diseases

Consumer Health

At Consumer Health, we concentrate on developing new nonprescription (OTC) products and solutions that improve consumer health and well-being. We maintain a global network of research and development facilities, with major sites in the United States, France, Spain, Germany and China at which approximately 700 employees (2021: 600 employees) work. We are active in the areas of pain, cardiovascular risk prevention, dermatology, nutritional supplements, digestive health, allergy and cough & cold.

Our focus lies on product developments that are insight-driven and aligned to the unmet needs of consumers. Our innovations range from new product formulations, devices and packaging to new consumer and healthcare professional claims and communications. In addition, we developed around 50 new consumer-validated product innovations in 2022. We are strengthening Consumer Health's innovation pipeline with around 170 active projects that we are developing across all our categories. These include core and adjacent innovations as well as transformational innovations that could significantly advance self-care products for consumers worldwide.[7]

A further important part of our innovation strategy is transitioning current prescription medicines that are suitable for self-care to over-the-counter status (Rx-to-OTC switches).

In the United States, China, Germany and other core markets, we continue to make progress in e-commerce by increasing sales and market share on key e-commerce platforms. In addition, we continue to pursue our 'Innovation with Partners' strategy introduced in 2021 to discover new sources of growth.

We also introduced a number of product line extensions for existing brands in various countries in 2022, for example:

In the United States, we expanded our Nutritionals product portfolio with the launch of One-A-Day™ Multi+, a line of complete gummy multivitamins that offer daily nutritional support plus a choice of boost for immunity defense (Adults or Teens versions), brain support, and healthy hair, skin and nails. In our Pain & Cardio category, we also expanded our Midol™ menstrual pain-relief range with the launch of Midol™ Heat Relief, patches that use drug-free heat therapy to increase blood flow, relax muscles and relieve pain and cramps.

In the Europe/Middle East/Africa region, we extended the Bepanthen™ Derma dry skin range with the launch of Bepanthen™ Derma Hand Cream in Germany and Greece, as well as Bepanthen™ Tattoo Wash and Bepanthen™ Tattoo Suncream for tattoo aftercare in Italy. In the UK and France, Berocca™ moved into the immunity space with the launch of Berocca™ Immuno (UK name)/Immunité Flash (France name) to win more broadly in the category.

[7] Core innovation means optimizing existing products for existing customers. Adjacent innovation refers to the extension of existing brands to new market segments, i.e. new products and assets are added. Transformational innovation refers to achieving breakthroughs and creating new markets that do not yet exist.

In the Asia/Pacific region, we expanded our range of Redoxon™ supplements in our Nutritionals category with the launch of Redoxon™ Immunity+ product to strengthen the immune system and bone development for adults and children. We also expanded our Elevit™ range in China, with the launch of an infant line containing calcium and vitamin D. In India, we extended our Supradyn™ portfolio in the Nutritionals category with the launch of Supradyn™ Immuno+ in a film-coated tablet format.

In the United States, we launched Astepro™ as an OTC product, following the FDA's approval of the switch from Rx status in 2021. Astepro™ relieves nasal congestion, sneezing and a runny or itchy nose due to hay fever or other upper respiratory allergies. It is the first and only steroid-free antihistamine nasal spray on the US market that is available over-the-counter for adults and children aged six and above that works in 30 minutes and lasts 24 hours.

1.4 Commitment to Employees

Bayer's business success is essentially built on the knowledge and commitment of our workforce. As an employer, we offer our employees attractive conditions and wide-ranging individual development opportunities. Alongside professional training, we focus on promoting a dialogue- and feedback-oriented culture based on trust, intentional inclusion, and respect for diversity and equality of opportunity, which is also summarized in our corporate policy entitled "Fairness and Respect at Work." Our employees worldwide are trained to comply with these guidelines. We measure the engagement and satisfaction of our employees by means of systematic feedback discussions and regular employee surveys. Responsibility for the human resources strategy of the Bayer Group lies with the Board of Management, supported by Bayer's Human Resources enabling function. The strategy is globally implemented within the scope of binding policies.

For more than 10 years, Bayer's LIFE values (Leadership, Integrity, Flexibility and Efficiency) have guided us in our activities. These stand for our values and leadership principles. Attributes define each value's practical meaning and behaviors, serving as the sole reference for how employees work at Bayer.

Employees at all Bayer sites around the world have the right to elect their own representatives. In 2022, the working conditions for around 53% (2021: 54%) of our employees worldwide were governed by collective or company agreements.

Employee data

On December 31, 2022, we employed 101,369 people (2021: 99,637) worldwide. In Germany, we had 22,569 (2021: 23,116) employees, representing 22.3% of the total Group workforce (2021: 23.2%).

In 2022, the Bayer Group hired 12,433 new employees (accounting for 12.3% of our workforce). On the reporting date, our employees had worked for the Bayer Group for an average of 11.0 years (2021: 11.2). Our workforce includes only a small number of employees on temporary contracts (3.4%).

Restructuring measures

We act with social responsibility when changes and restructuring measures are necessary. In all countries, we aim to minimize the impact on employees and find mutually agreeable solutions in cases where job reductions are necessary. This is also the case in Germany, where agreements are in place with employee representatives that fundamentally rule out dismissals for operational reasons in the intercompany personnel network of Bayer AG in the country until the end of 2025.

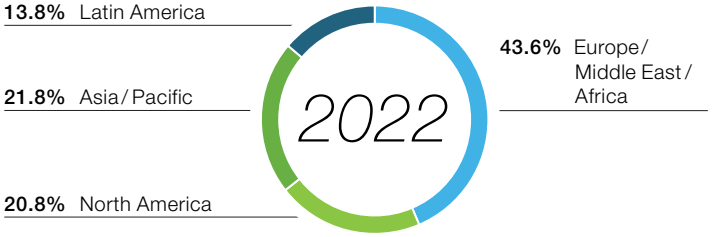
We are at different stages of development with regard to the program to accelerate our transformation, which we announced in 2020. We anticipate that all the major transformation measures will be implemented by the end of 2024, with employees of various age groups being offered flexible models with attractive conditions.

A 1.4/1

Employee Data

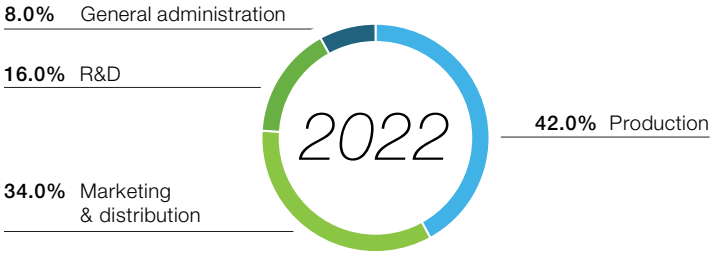
	2021	2022	Change (%)
Total	**99,637**	**101,369**	**+1.7%**

by Region



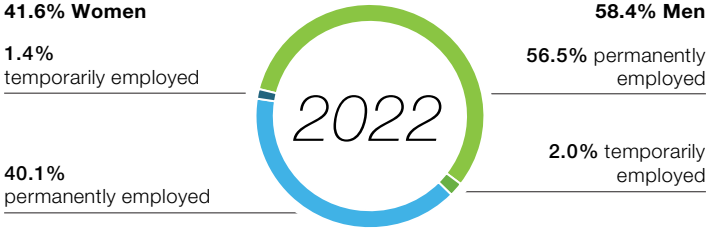
	2021	2022	Change (%)
Europe/Middle East/Africa	44,309	44,181	–0.3%
North America	19,515	21,090	+8.1%
Asia/Pacific	21,448	22,094	+3.0%
Latin America	14,365	14,004	–2.5%

by Function



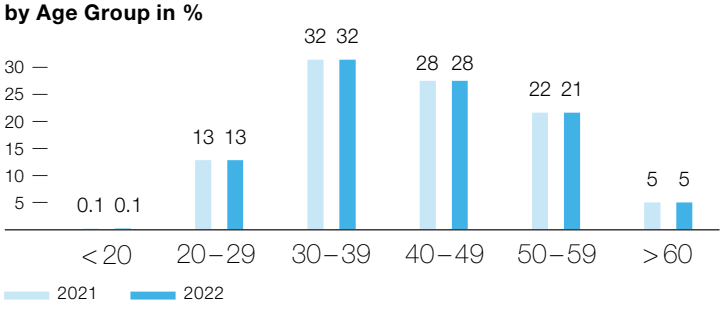
	2021	2022	Change (%)
Production	40,838	42,548	+4.2%
Marketing & distribution	35,496	34,477	–2.9%
R&D	15,310	16,211	+5.9%
General administration	7,993	8,132	+1.7%

by Gender



	Women		Men	
	2021	2022	2021	2022
Europe/Middle East/Africa	19,530	19,464	24,779	24,717
North America	7,482	8,138	12,033	12,952
Asia/Pacific	8,447	9,047	13,001	13,047
Latin America	5,465	5,479	8,900	8,525
Total	40,924	42,128	58,713	59,241

by Age Group in %



Fluctuation in %

	Voluntary		Total	
%	2021	2022	2021	2022
Women	6.7	6.2	12.6	12.1
Men	5.9	5.7	11.8	12.2
Total	6.2	5.9	12.1	12.2

Number of employees in full-time equivalents (FTEs)
Breakdown by division no longer shown in order to align with Note [9], where employee figures are reported by function

Employee compensation and variable pay

Our compensation system combines a basic salary reflecting performance and responsibility with elements based on the company's success, plus additional benefits that include stock participation programs. Members of upper management throughout the Bayer Group are invited to participate in Aspire, a uniform long-term compensation program based on the development of the share price. Adjustments based on continuous benchmarking make our compensation internationally competitive.

Besides providing attractive compensation for their work, we contribute to the financial security of our present and former employees after their retirement. Retirement benefit plans are available to 79% (2021: 75%[8]) of Bayer employees worldwide to complement national pension systems.

A 1.4/2

Personnel Expenses and Pension Obligations

€ million	2021	2022
Personnel expenses	11,798	12,619
of which pension expenses	904	999
Pension obligations[1]	25,734	19,139
Pension benefits paid[2]	1,073	1,125

[1] Present value of defined benefit obligations for pensions and other post-employment benefits as of December 31
[2] 2021 figures restated

The increase in personnel expenses was partly due to currency effects and a rise in compensation. In 2022, provisions of around €1,400 million (2021: €1,570 million) were established for variable one-time payments to employees under the Group-wide short-term incentive (STI) program and similar programs. In addition, a budget of approximately €109 million (2021: €100 million) was made available in 2022 for individual Top Performance Awards.

Our compensation principles comprise providing fair compensation to all employees. As standard practice, we pay at least a "living wage," which is annually reviewed and defined worldwide by the nonprofit organization Business for Social Responsibility, and compensate employees on both permanent and temporary employment contracts in excess of the statutory minimum wage in many of the countries in which we operate.

Vocational and ongoing training

To meet our need for skilled employees, we hire apprentices in Germany in more than 29 different occupations. In total, we had 1,286 apprentices in 2022. We also offer trainee programs in various areas for those embarking on a career, and internships for students around the world.

A wide range of ongoing training opportunities is available to our employees in the form of both e-learning and face-to-face training. Each employee engaged in an average of around 26 hours of ongoing training in 2022.

Work-life integration

We help our employees balance their work and private lives, and provide various programs to support them, including flexible working arrangements for how, when and where they work. In response to the COVID-19 pandemic, we have extended these flexible arrangements in the long term, creating a "next normal" way of working for employees with suitable job profiles.

In addition, we offer employees the opportunity to take parental leave, while also supporting them with childcare and the care of close relatives within the scope of local social and legal guidelines. In many countries, our commitment in this area goes beyond the statutory requirements.

[8] 2021 figure restated

In 2022, part-time employees accounted for around 6.4% of our workforce (of which 51.7% were women and 48.3% men), primarily in Europe.

Health promotion

Around 97% (2021: 97%) of our employees worldwide either have statutory health insurance or can obtain health insurance through the company.

We maintain a global framework concept to promote employee health and quality of life called BeWell@Bayer. BeWell@Bayer expands the core aspect of health into a comprehensive approach, targets further health improvements in the daily work environment and is intended to help employees balance their professional and private lives. Health check-ups are an integral part of our health promotion initiatives.

Inclusion and diversity

We aim to create an inclusive workplace where all employees feel welcome and contribute at their best. We will continue to seek out and promote the best talent for a workforce that is built on high-quality skills and qualifications and also reflects our strong focus on inclusion and diversity. We attach great importance to equal pay for men and women in comparable roles with similar levels of experience.

The initial findings of a global review indicate minor gender-specific differences of less than 2%. Further analysis will be conducted in 2023 to determine whether the identified differences in pay are due to factors other than gender, with targeted adjustment measures to follow.

Our Inclusion & Diversity strategy focuses on the integrative behavior and decision-making of all employees within the Group. To support this, we have established inclusion and diversity committees at various management levels. Each of our Business Resource Groups (BRGs) has a sponsor at Board of Management level and is intensively supported in promoting an inclusive workspace. In addition, we are integrating inclusion and diversity into core people processes such as talent acquisition and talent management.

With 42,128 women employed at Bayer, the proportion of women in the workforce remained almost constant at 41.6% (2021: 41.1%). We are specifically targeting a greater gender balance in management. The proportion of women in management in 2022 was 42.9% (2021: 41.9%[9]), and among skilled workers 40.6% (2021: 40.5%). The proportion of women in top management, which encompasses the highest levels of management, including the Board of Management, increased again compared to previous years. At the end of 2022, it was made up of 27.8% women (2021: 26.8%[10]) and 72.2% men (2021: 73.2%[11]).

Our top management currently comprises 37 nationalities (2021: 37), with around 67% (2021: 65%) of its members working in their native country. Information on diversity in our Board of Management and our Supervisory Board can be found in our Corporate Governance Report.

The average age of our employees is 42 (2021: 42). There were no significant changes to the age structure in 2022 compared to 2021.

[9] 2021 figure restated
[10] 2021 figure restated
[11] 2021 figure restated

People with disabilities are an integral part of our workforce. Based on voluntary statements by employees, we employ some 2,150 people with disabilities, 44% of whom are women and 56% men. That represents around 2.1% of our total workforce.

In 2021, we announced our commitments for achieving gender balance across the Bayer Group. We aim to increase female representation to 33% across our entire top management by 2025, and to 50% across all management levels as a whole by the same year. We then aim to increase the proportion of women in top management to 50% as well by 2030. We have also defined commitments for other diversity elements, including generation, nationality, experience, LGBTQ+, and people with disabilities for 2025 and 2030. Regionally tracked aspects such as ethnic origin are integrated into commitments in our country organizations.

1.5 Procurement and Supplier Management

We have an impact on society and the environment through our procurement activities and supplier relationships. Not only economic but also ethical, social and ecological principles are therefore anchored in our Procurement Policy, which is binding for all employees worldwide.

As a cross-divisional enabling function, Procurement leverages synergies by bundling know-how and procurement spend. In 2022, we had a total of 91,149 (2021: 93,844) suppliers. Our procurement spend was €23.3 billion (2021: €18.9 billion).

Our main direct procurement materials include active ingredients, raw materials, intermediates, finished products and seeds. Technical goods and services, research and development (R&D) resources, and marketing and IT services are important components of our indirect procurement portfolio.

Procurement operates according to advanced procurement and supplier management processes. Long-term contracts and dedicated supplier management for strategically important goods and services are key elements here. They serve to minimize procurement-specific risks such as supply disruptions or significant price fluctuations, while also helping to safeguard our company's competitiveness and ensure smooth production processes.

Throughout the ongoing COVID-19 pandemic, our supply chain has proven to be stable and resilient, partly due to our involvement in the Together for Sustainability (TfS) initiative and the Pharmaceutical Supply Chain Initiative (PSCI). We have worked together with our suppliers for many years to jointly develop sustainable solutions to avoid risks.

To meet our climate protection targets, Procurement takes and supports measures to reduce greenhouse gas (GHG) emissions in our supply chain (Scope 3). We advanced our activities from 2021 and initiated new ones in 2022. We continue to lead a dedicated "GHG Scope 3 Emissions" workstream in the TfS initiative and have also been working with the World Business Council for Sustainable Development and CDP (formerly the Carbon Disclosure Project) Supply Chain.

Regarding sustainable palm oil, Procurement decided in 2021 to switch from the Roundtable on Sustainable Palm Oil (RSPO) Book & Claim model (credits) to the RSPO Mass Balance model. The transition to the new process took place in early 2022. Since then, we have been sourcing RSPO Mass Balance-certified palm oil.

In 2022, we focused our efforts on raising knowledge about human rights in the supply chain among our procurement employees and suppliers as well as on enhancing our procurement processes in order to comply with the German Supply Chain Due Diligence Act (GSCDDA).

Our global teams have taken extensive action to increase the resilience of our supply chain and mitigate the impact of the war in Ukraine. For example, at some sites in Germany we have reduced the amount of electricity we generate using natural gas, switching to German wind power in order to reduce our natural gas consumption. We are also exploring alternative suppliers for selected raw materials.

Sustainability in the supply chain

Clear sustainability criteria and standards are in place for our supply chain on both a global and regional level. With the goal of improving sustainable practices in our supply chain, we operate a Group-wide four-step management process that comprises the following elements: raising awareness, supplier selection, supplier evaluation and supplier development. We select suppliers to be evaluated on sustainability performance based on a risk classification matrix that considers country as well as category sustainability risks. This allows for a more targeted analysis according to individual risk criteria (e.g., violation of human rights standards), thus increasing transparency in our supply chain.

Our sustainability requirements are established in the Bayer Supplier Code of Conduct, which is based on our Bayer Human Rights Policy and the principles of the UN Global Compact. This code serves as the basis for selecting and evaluating our suppliers and is integrated into electronic ordering systems throughout the Bayer Group. Furthermore, our standard supply contracts contain a clause that authorizes us to verify suppliers' compliance with our sustainability requirements. The Bayer Supplier Code of Conduct was updated in 2022 and now also contains GSCDDA-specific requirements.

We verify suppliers' observance of the code requirements with the aid of online assessments or audits. We evaluate suppliers of relevant importance and suppliers with a high sustainability risk, which factors in both country and category risks – together comprising around 35.4% of our total procurement spend. In addition, we are screening high sustainability risk suppliers as part of our due diligence process to ensure compliance with our sustainability standards. Our processes also include supplier evaluations performed within the scope of the two sustainability industry initiatives we are a part of. In total, our service provider EcoVadis assessed 1,145 (2021: 802) suppliers on our behalf in 2022. In 2022, we arranged for 113 (2021: 67) of our suppliers to be audited by internal and/or external, independent auditors.

If critical results are recorded as a result of a serious violation or several major shortcomings being identified during a supplier's sustainability performance evaluation, specific improvement measures are then jointly defined. In 2022, critical results were determined for 26 suppliers (2% of all assessed and audited suppliers; 2021: 22 suppliers (3%)). In these cases, we request that the suppliers remedy the identified weaknesses. We monitor the implementation of these activities through re-assessments or follow-up audits. We reserve the right to terminate a supplier relationship if insufficient improvements are observed during re-evaluations. In 2022, we did not have to end any supplier relationship due solely to sustainability performance, but we took measures to reduce business with suppliers that did not manage to improve their sustainability performance sufficiently. In 2022, 676 (2021: 508) of the 1,258 (2021: 879) suppliers assessed and audited improved their sustainability performance.

1.6 Product Stewardship

For us, product stewardship means that our products satisfy the highest quality standards and are safe for people and the environment when used properly. We respect legal requirements, and our voluntary commitment and internal standards go beyond these in various areas. We have put in place suitable directives and management systems for the implementation of regulatory and voluntary product stewardship requirements that are steered by our Sustainability, Safety, Health & Environment (SSHE) enabling function and the quality functions of the divisions.

Assessment and testing of active ingredients and products

Along the entire value chain, our substances and finished products undergo extensive assessment and testing, which we use to derive appropriate measures to mitigate health and environmental risks. Our divisions have quality management systems in place that are based on international sector-specific standards. By implementing a binding company-wide quality assurance system, we aim to guarantee high-quality, safe and effective products and services that satisfy all internal and external requirements and meet customer expectations. In this way, we work to prevent customer complaints, product recalls and other problems. For all chemical substances, we compile safety data sheets targeting professional users. End consumer products contain appropriate information in their packaging, with one example being package inserts for pharmaceuticals. We also conduct environmental risk assessments and implement risk management measures subsequent to product registration.

At **Crop Science**, we steer product stewardship through the strategy and sustainability function. We apply a lifecycle approach as specified in our Group Regulation on Product Stewardship Commitment, Principles and Key Requirements, which follows internationally recognized standards such as the International Code of Conduct on Pesticide Management issued by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), the guidelines of the crop protection association CropLife International, and the guidelines of the industry initiative Excellence Through Stewardship (ETS) for seeds and traits. Since 2021, we have also shared our internal product safety standards publicly on our website.

We aim to strengthen all stakeholders' confidence in our products through transparency. In line with this, we were one of the first companies in agriculture to make safety-relevant data on crop protection products and genetically modified crops publicly accessible. Summaries of scientific studies for 32 of our active ingredients submitted to the European Food Safety Authority (EFSA) in the context of registration procedures are available on our website. These reports include information on toxicological and ecotoxicological studies and investigations into the degradability of crop protection products. Also available are summaries of scientific studies on 16 traits of our genetically modified crops that were evaluated by US regulatory authorities. Study reports on our registration studies for the approval of our crop protection products and genetically modified crops are available on specific request. During the production, packaging, storage and transport phase, we rely on an established and globally applicable health, safety and environmental protection management system.

With regard to the sale of and the application instructions for crop protection products and technologies, we likewise observe the International Code of Conduct on Pesticide Management (FAO/WHO 2014). The principles of our product stewardship are set out in our Product Stewardship Guidelines and are implemented through the respective function, its programs and initiatives, and a network of other relevant functions such as toxicology and research.

We have not marketed any crop protection products that are classified by the WHO as being highly toxic (WHO Tox Class I) since as early as 2012. In addition, since 2016 we have marketed only crop protection products with active ingredients that have a registration in at least one OECD country, and only new active ingredients for which an OECD data package has been compiled. This means that we have set ourselves voluntary standards that go beyond many of the regulatory requirements in place at national level.

We put high priority on the safe use of our products. Our customers are provided with comprehensive, transparent and reliable information on our products. Through a variety of extensive programs, we train farmers, seed treatment professionals, dealers and other users in the safe handling and use of our products and the correct use of personal protective equipment (PPE).

In the **Pharmaceuticals** Division, we assess the medical benefit-risk profile of our pharmaceutical and medicinal products throughout their entire product life cycle. The efficacy, safety and

tolerability of pharmaceuticals are already investigated in preclinical and Phase I to III clinical development studies. These results and the benefit-risk assessment are submitted to the relevant authorities during the pharmaceutical registration process. We continue to compile safety-relevant information in a dedicated database following market launch of the product. Post-Authorization Safety Studies (PASS) are also conducted after approval. The results are entered into the PASS registry in compliance with EU pharmacovigilance legislation.

After proving the efficacy and safety of a nonprescription (OTC) medicinal product and consumers' ability to make self-selection decisions, **Consumer Health** receives marketing authorization from the relevant authorities. We continuously ensure the favorable benefit-risk profile of these products by conducting post-marketing surveillance and generating scientific evidence throughout the entire product life cycle. In addition to these OTC products, Consumer Health also markets medical devices, cosmetics and nutritional supplements. We conduct ongoing monitoring and measurements to ensure safety, efficacy and compliance with regulatory requirements around the world. We also monitor ingredients across all product categories and act on any concerns that are identified to provide the best-quality products for our patients and consumers.

Animal welfare in active ingredient testing

Animal studies are legally required and essential from a scientific viewpoint for assessing the safety and efficacy of our products. Such studies must comply not only with legal requirements but also with Bayer's principles on animal welfare and animal studies. The latter also apply both to the research institutes we commission and to our suppliers, whose compliance with our animal welfare requirements we monitor regularly. We published a corporate policy outlining these principles in 2020. We aim to minimize the use of study animals and to employ alternative methods whenever possible. In early drug research, Bayer continuously makes use of different in silico-based and in-vitro processes that help reduce the number of animal studies; included in this are our activities with "organ-on-a-chip."

Environmental impact

As part of our business activities, we aim to minimize the impact of our products on the environment.

Biodiversity

Agriculture relies on biodiversity and significantly benefits from species that create and maintain important ecosystem services like healthy soils, pollination or pest control. At the same time, the very purpose of agriculture is to provide a safe and secure food supply for humans, which can lead to a loss or reduction of biodiversity, for example through land-use change, degradation or fragmentation of habitats. To foster nature-positive production, we are investigating and developing cultivation systems that help to achieve a better balance between productivity and the conservation of soil health and habitats. In many of our field trials, we evaluate how our solutions – in combination with practices such as no till, cover crops or wider crop rotations – help to improve soil health without compromising farmers' profitability. In addition, we have various cooperation projects involving the Bayer ForwardFarms and nature conservation experts where we research what a better balance could look like in various countries and regions. We develop and propose to our customers and distribution partners effective biodiversity-inclusive production systems and initiate first steps to support their implementation, which is realized through specific measures on the part of our customers and distribution partners.

We also support and encourage the development of integrated pest management (IPM) and pollinator management methods that conserve the abundance and diversity of beneficial insects, protect pollinators and reduce the use of pesticides or replace compounds with a less favorable environmental safety profile with modern, more environmentally friendly solutions. Therefore, we conduct comprehensive field trials under agronomic conditions in various crops around the globe with the objective of deriving recommendations regarding the best positioning of our products within an IPM system to protect pollinators and beneficials.

We promote the responsible use of natural resources, both complying with international and national legislation as well as respecting biodiversity. Our principles on biodiversity are set forth in a corporate policy and a separate position paper on this issue. In this, we express our commitment to the objectives of the United Nations Convention on Biological Diversity, which includes the fair and equitable sharing of the benefits arising from the use of genetic resources. We also published a supplementary corporate policy that is designed to ensure compliance with international and national legislation on access to genetic resources and the fair utilization of the resulting benefits. Through monetary and nonmonetary contributions to the establishment of new gene banks that serve to preserve the genetic diversity of crops, we help to facilitate the conservation and sustainable use of plant genetic resources. In addition, we participate in a variety of projects with public partners to enable improved local food crops, promote the build-up of capacities to breed better crops, and support other global efforts to preserve biodiversity. Furthermore, we continually deploy plant breeding innovations that help to improve genetic diversity of crops, food security and ecological sustainability.

Bee safety of crop protection products

We are actively involved in numerous projects and research activities to protect bees and other pollinators.

In order to minimize risks posed to bees and other nontarget species by our crop protection products, we perform extensive safety tests and risk assessments. We also implement product stewardship measures, including certification for seed treatment facilities, knowledge-sharing and educational training courses for growers to help them understand the benefits of pollinators for crop quality and yield and the need to protect them. In addition, we develop bee-friendly crop protection products and are also involved in the development of innovative application processes that reduce the exposure of bees.

Furthermore, we have contributed to the creation of a new label pictogram designed by the industry association CropLife International and published by the Food and Agriculture Organization (FAO) of the United Nations that is to be used as a precautionary icon on labels for pesticides to protect pollinators from unintended side effects. We have started to adopt this label pictogram for our pesticide products.

Biotechnology

We apply biotechnological methods in biopharmaceutical production (e.g., Kogenate™, Kovaltry™, Jivi™) and the development of innovative biopharmaceuticals, cell and gene therapies. In addition, we apply biotech-based methods to seeds (e.g., SmartStax™ PRO with RNAi Technology Corn, Intacta 2 Xtend™ Soybeans, and Bollgard™ 3 with XtendFlex™ Cotton). In plant breeding, we use a variety of methods, including conventional breeding approaches and genetic engineering. Genetically modified crops can help to increase the sustainability of food production because they enable farmers to produce more food with less impact on natural resources.

For us, the safety of people and the environment is always the top priority in the use of biotechnology. In addition to meeting legal and regulatory requirements, we have specified the responsible use of genetic engineering and strict, globally applicable safety measures for handling biological substances in corresponding corporate policies.

The development and commercialization of genetically improved seeds are also subject to stringent laws and regulations. In addition, we have established internal processes to ensure the responsible use of biotechnologically manufactured products throughout their life cycle. Furthermore, our Crop Science Division maintained its membership in the Excellence Through Stewardship (ETS) organization in 2022.

Trace substances in the environment

We are committed to preventing emissions of product residues (e.g., active ingredients and their degradation products) into the environment or, where these are unavoidable, to minimize the risks they harbor. We focus on all stages of the product cycle – from manufacturing to safe use and disposal.

At our production sites around the world, regulatory authorities and external assessors monitor compliance with wastewater thresholds. Internal experts also perform corresponding audits of the production sites at regular intervals. We take appropriate action in our production facilities to avoid or reduce emissions from production, such as the release of active ingredients into the environment. Alongside the regulatory standards, such action also comes in the form of our own, more far-reaching environmental standards, for instance as outlined in our “Health, Safety and Environment Key Requirements” (HSE KR). We are also working to develop further effective risk minimization measures in various research projects.

With regard to the application of crop protection products, potential environmental impact is investigated in ecotoxicological studies during development and prior to the official product approval process. The responsible authorities receive an extensive environmental risk assessment and can specify risk minimization measures as appropriate.

Environmental risk assessments are also conducted in Europe and the United States for the official approval of human pharmaceuticals.

1.7 Environmental Protection and Safety

We are working on ways to further reduce the environmental impact of our business activities and develop solutions that relieve the burden on the environment. Responsibility for this lies with the Sustainability, Safety, Health & Environment (SSHE) enabling function, which defines framework conditions in the form of corporate policies and other measures. We use management systems to control operational implementation in the divisions.

Energy consumption

Bayer’s total energy consumption rose by 1.8% year on year to 35.5 petajoules in 2022 (2021: 34.8 petajoules). This includes both primary energy consumption, which mainly relates to fossil fuels, and secondary energy consumption. This slight increase was primarily attributable to the expansion of production at the US sites in Soda Springs and Luling.

Energy efficiency reported as the ratio of energy consumed to external sales improved from 220 kWh/€ thousand in 2021 to 194 kWh/€ thousand in 2022.

Greenhouse gas emissions

We consider climate protection and the related reduction of greenhouse gas emissions to be a top priority. We have therefore set ourselves ambitious targets in this area, and these are explained in more detail in Chapter 1.2.1 Strategy and Targets.

The following table provides an overview of the development in 2022:

A 1.7/1

Greenhouse Gas Emissions

Million metric tons of CO_2 equivalents	2021	2022
Scope 1: Direct emissions[1]	1.93	1.91
Scope 2: Indirect emissions[2] according to the market-based method	1.24	1.12
Total greenhouse gas emissions according to the market-based method	**3.17**	**3.03**
Scope 3: Indirect emissions from our upstream and downstream value chains (by materiality)[3,4,7]	8.69	9.64
of which indirect emissions from our upstream value chain to attain the SBT[4,5,6,7]	7.91	8.90

[1] Direct emissions result from our own power plants, vehicles, waste incineration plants and production facilities (Scope 1). In line with the GHG Protocol, we also report the direct emissions that arise through the generation of energy that we sell to other companies as a site service. Consequently, the figures for direct emissions of the Bayer Group are higher than the actual emissions resulting from Bayer's business activities alone. In 2022, 96.9% of direct greenhouse gas emissions were carbon dioxide emissions. Other greenhouse gases such as nitrous oxide, partially fluorinated hydrocarbons and methane made a negligible contribution to direct greenhouse gas emissions.
[2] Indirect emissions result from the procurement of electricity, steam and cooling energy (Scope 2).
[3] Scope 3 emissions were subjected to a limited assurance review.
[4] Emissions from eight Scope 3 categories are of material importance to Bayer and together represent our total Scope 3 emissions: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) (upstream) transportation and distribution, (5) waste generated in operations, (6) business travel, (7) employee commuting and (12) end-of-life treatment of sold products.
[5] Science Based Target
[6] For our reduction target for Scope 3 emissions in line with the SBTi, we consider the following materially important Scope 3 categories, which accounted for 88% of Scope 3 emissions in the baseline year: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) (upstream) transportation and distribution and (6) business travel.
[7] The figures for 2020 and 2021 were corrected as new information came to light in the categories 3.1, 3.2 and 3.4. This encompassed adjusting the methodology employed to correct for inflation and improving the classification system in procurement.

In 2022, we cut Scope 1 and 2 greenhouse gas emissions by 0.14 million metric tons of CO_2 equivalents, or 4.5%. The main reason for this decline is the increased share of electricity purchased from renewable sources (Scope 2) despite the rise in energy consumption.

In the Scope 3 Science Based Targets (SBT) categories that are relevant for our company, our emissions rose by 0.99 million metric tons of CO_2 equivalents, representing an increase of 12.5% compared with 2021. The rise in Scope 3 emissions in the SBT-relevant Scope 3 categories was largely attributable to business growth, replenishment of inventories and an increase in air freight and business travel. Emissions in the non-SBT-relevant categories decreased by 0.03 million metric tons of CO_2 equivalents overall due to a reduction in the volume of waste from our production activities (category 3.5) and product packaging (category 3.12).

To achieve carbon neutrality at our own sites, we financed reforestation and forest conservation projects in countries such as Brazil, Indonesia, Cambodia, Nicaragua, Peru, Uruguay, Zambia and Zimbabwe. The climate protection certificates generated as a result enabled us to offset greenhouse gas emissions amounting to 0.45 million metric tons of CO_2 equivalents.

Water

We use water resources as sparingly as possible and are endeavoring to further reduce emissions into water. All sites in water-scarce areas or areas identified as being threatened by water scarcity have a water management system in place.

Total water use in 2022 amounted to 53 million cubic meters (2021: 55 million cubic meters). This 4.0% year-on-year decrease in use is again due to infrastructure-related measures at the Orizaba Proquina site in Mexico and improved water use at the Luling site in the United States. Some

33.0% of all water used by Bayer is cooling water that is only heated in the process and does not come into contact with products. It can be returned to the water cycle, in line with the relevant official permits.

At our production facilities, we endeavor to use water several times and to recycle it. The total quantity of industrial and mixed wastewater came in at 24 million cubic meters in 2022 and was thus level with the previous year (2021: 25 million cubic meters). All wastewater is subject to thorough checks before it is discharged into the various disposal channels. All our industrial and mixed wastewater is purified in wastewater treatment plants (Bayer or third-party facilities) where necessary, categorized as environmentally safe according to official provisions and returned to the natural water cycle.

Waste and recycling

We aim to minimize material consumption and disposal volumes through systematic waste management. In accordance with Bayer's corporate policies, all production sites are required to prevent, reduce and recycle waste, and to dispose of it safely and in line with good environmental practices.

The total quantity of waste generated rose to 1,038,000 metric tons in 2022 (2021: 1,001,000 metric tons). This was mainly due to an increase in production at several sites in North and South America, which meant that larger volumes of waste were disposed of.

The volume of hazardous waste decreased by 12.6% to 276,000 metric tons (2021: 316,000 metric tons) due to the completion of building and renovation work at our sites in Dormagen and Berlin, Germany. The volume of hazardous waste from production, including hazardous waste from wastewater treatment plants, also declined against the prior year, falling from 303,000 metric tons to 273,000 metric tons.

Process and plant safety

We aim to design and operate our processes and production facilities in such a way that they do not pose any inappropriate risks to employees, the environment or neighboring communities. We are working to further develop our safety culture and the expertise of our employees. Principles of process and plant safety are laid out in our globally applicable corporate policies. Compliance with internal and external safety regulations is verified in internal audits.

To prevent substance and energy releases, the causes of process safety incidents (PSIs) are analyzed and relevant findings communicated throughout the Bayer Group. For this purpose, we use a globally standardized key performance indicator (KPI) – the Process Safety Incident Rate (PSI-R) – that is integrated into the Group-wide reporting system. The PSI-R indicates the number of PSI incidents per 200,000 hours worked. In 2022, the PSI-R was 0.11 (2021: 0.08).

Transportation safety

Transportation and warehouse safety is part of HSE management and is implemented by networks of supply chain experts. In addition to complying with legal regulations, we have implemented supplementary standards and requirements that are defined in corporate policies. We thereby ensure that our materials are handled and transported in accordance with their respective potential hazards and applicable regulations.

There were 17 transport incidents in 2022 (2021: 32), primarily involving road transport accidents. We define transport incidents as accidents that cause personal injury or significant damage to property, environmental impact resulting from the release of substances, or leakage of hazardous goods.

Safe working conditions

We consider safeguarding the occupational health of our employees – and of the employees of contractors on our company premises – to be a top priority.

In 2022, occupational safety and health protection were once again primarily shaped by the development of the COVID-19 pandemic. The existing regulations and requirements were therefore adapted to reflect changing risk situations, thus substantially reducing risks to employees. The protection concepts and measures that we implemented on a global scale took the different activity profiles at the individual sites into consideration.

In 2022, the Recordable Incident Rate (RIR)[12] amounted to 0.37 cases per 200,000 hours worked (2021: 0.38[13]), corresponding to 413 occupational injuries worldwide. The low RIR is due to the long-term impact of effective occupational safety measures and programs as well as short- and medium-term effects in connection with the COVID-19 pandemic resulting from a reduction in general movement due to employees working from home and paying greater attention to their health and safety, for example.

Despite all safety precautions undertaken, it is not possible to completely rule out serious or fatal accidents. One Bayer employee lost their life in a work-related accident in 2022. We will not let up in our efforts to further reduce risks and risky behavior.

The Intelex accident management platform introduced in 2021 continued to be promoted and used by the workforce. Employees can quickly, easily and anonymously report a safety incident, near accident or safety observation. Using this platform as a central source for data and insights enables us to share experiences and knowledge better, and thus reduce the incidence of illnesses and injuries in the future. The KPI “severity of injury” is also recorded in Intelex to assess the relevance of a reportable incident in terms of injury outcome and enable safety improvements to be made.

We attach great importance to the mental health of our employees and their families, and work hard to protect it. In 2022, we continued to actively promote mental health by providing a wide range of information and programs aimed at specific target groups. One example of this was the establishment of the “House of Health”, a central intranet platform providing a range of information and training offerings for topics such as mental health and healthy living. Furthermore, we provided 96% of our employees worldwide with access to our Employee Assistance Program in 2022. Run by external providers, the program offers support services and information from mental health specialists.

[12] The RIR covers all injuries to employees and directly supervised contractors leading to medical treatment that goes beyond simple first aid.
[13] Prior-year figure restated

2. Report on Economic Position

2.1 Overview of Business Performance

2.1.1 Economic Position and Target Attainment

2022 was a very successful year operationally. We registered a substantial increase in sales, with growth of 8.7% on a currency- and portfolio-adjusted basis (Fx & portfolio adj.). EBITDA before special items advanced by 20.9%, with the good business performance in the divisions more than offsetting inflation-driven cost increases. The EBITDA margin before special items amounted to 26.6%. At Crop Science, sales advanced by a double-digit percentage after adjusting for currency and portfolio effects, while EBITDA before special items rose by 46.2%, thanks in part to contributions from ongoing efficiency programs. Sales at Pharmaceuticals edged higher by 1.1% (Fx & portfolio adj.), and EBITDA before special items rose by 1.6%. Consumer Health registered encouraging sales growth of 8.4% on a currency- and portfolio-adjusted basis and a corresponding increase in EBITDA before special items, which advanced by 14.9%. Group earnings per share (total) came in at €4.22 in 2022, and were mainly weighed down by impairment losses. Core earnings per share rose by a substantial 22.0% to €7.94.

In the Group outlook published in March, we anticipated currency-adjusted sales of approximately €46 billion, corresponding to an increase of about 5% on a currency- and portfolio-adjusted basis. We expected an EBITDA margin before special items of around 26% on a currency-adjusted basis, which, based on the sales forecast, would have corresponded to EBITDA before special items of around €12 billion on a currency-adjusted basis. We also forecast core earnings per share of approximately €7.00 on a currency-adjusted basis, and free cash flow of around €2.0 billion to €2.5 billion.

The forecast was revised in August due to the good business performance. As part of this updated guidance, we anticipated an increase in currency-adjusted sales to €47 to €48 billion, corresponding to currency- and portfolio-adjusted growth of about 8%. The EBITDA margin before special items was expected to come in at around 26% to 27% on a currency-adjusted basis. In the revised outlook, we anticipated core earnings per share of approximately €7.30 on a currency-adjusted basis. Free cash flow was forecast to come in at approximately €2.5 billion.

We met this revised Group outlook, and in the case of core earnings per share exceeded it.

A 2.1.1/1

Target Attainment in 2022

	Forecast for 2022[1] currency-adjusted	Revised forecast for 2022[2] currency-adjusted	Target attainment in 2022 currency-adjusted	2022 results reported
Group sales	Approx. €46 billion	€47 to €48 billion	€47.7 billion	€50.7 billion
	Approx. +5% (Fx & p adj.)	Approx. +8% (Fx & p adj.)	+8.7% (Fx & p adj.)	+15.1%
EBITDA before special items	Approx. €12.0 billion based on a margin of approx. 26%	Approx. €12.5 billion based on a margin of approx. 26 to 27%	€13.1 billion and a margin of 27.4%	€13.5 billion and a margin of 26.6%
Core earnings per share	Approx. €7.00	Approx. €7.30	€7.70	€7.94
Free cash flow	Approx €2.0 to €2.5 billion	Approx. €2.5 billion	€3.1 billion	€3.1 billion

Fx & p adj. = currency- and portfolio-adjusted
[1] Issued in March 2022
[2] Issued in August 2022

2.1.2 Key Events

Innovations and product approvals

We made encouraging progress with our innovative products in 2022.

Among our projects in advanced clinical development, we announced the launch of the clinical Phase III development program OCEANIC investigating the use of our active ingredient asundexian in the prevention of stroke. This is one of the largest Phase III projects we have conducted to date.

September saw good news for our development candidate aflibercept 8 mg. In two pivotal studies in neovascular age-related macular degeneration and diabetic macular edema, the dosing interval was able to be extended to 16 weeks while maintaining a consistent efficacy and safety profile with our ophthalmology drug Eylea™. We have applied for EU approval in these two indications.

There was also encouraging news for our ongoing product launches. In August, our cancer drug Nubeqa™ was approved for an additional indication in patients with metastatic hormone-sensitive prostate cancer (mHSPC) in the United States. We have also submitted applications for this indication extension in the EU, Japan and China. In January 2023, the European Medicines Agency's Committee for Medicinal Products for Human Use recommended extending the product's marketing authorization.

In 2022, we received product approvals in the EU, Japan and China for our treatment Kerendia™ in adult patients with chronic kidney disease associated with type 2 diabetes. In September, we received approval for an update to the product label in the United States. In February 2023, the European Commission granted approval in the EU for a label update to extend the indication of Kerendia™ to early stages of chronic kidney disease (CKD) associated with type 2 diabetes.

Russia's invasion of Ukraine

The safety of our colleagues in Ukraine and their families remains our top priority. In addition to establishing a disaster relief fund, we are also donating products such as antibiotics and seed for growing food. Together, Russia and Ukraine accounted for about 3% of our sales in 2022.

Energy provision and global supply chains may also continue to be disrupted as a result of the war. At Bayer, energy costs only accounted for about 3% of the total cost of goods sold in 2022. To mitigate the impact of any potential gas shortages and reduce our reliance on natural gas, we have realigned certain processes by partially switching to alternative sources of energy and launching programs to save energy. These effects did not have any material financial impact in full-year 2022.

ESG rating

We have made important progress in a major ESG rating. In 2022, MSCI ESG Research updated their ESG Controversies Report and lifted the red flag relating to "environmental concerns over GMO crops" as well as their related allegation of a breach of the UN Global Compact Principles. In August, MSCI ESG Research raised our rating from BB to A.

Portfolio changes

In April, we completed the divestment of our lormetazepam products to treat insomnia to Neopharmed Gentili. The products are sold under the brand names Minias™ and Noctamid™ in Italy and Evamyl™ in Japan.

In early October, we completed the sale of our Environmental Science Professional business to international private equity firm Cinven. The purchase price paid for the business, which generated sales of around €600 million in 2021, amounted to around €2,299 million before customary adjustments.

At the start of November, we closed the sale of our men's health product Nebido™ to Grünenthal for a preliminary purchase price of €495 million that is likewise subject to customary purchase price adjustments.

Financing activities

In March, we placed new hybrid bonds with a total volume of €1.3 billion. The proceeds were used for general corporate purposes, including financing the early repayment of the €1.3 billion hybrid bond that was callable on October 2, 2022.

In May, we agreed and drew on a credit line of €3 billion. It will be used to help manage risks should the current geopolitical situation deteriorate.

Board of Management

Effective January 1, 2022, the Supervisory Board appointed Rodrigo Santos to the Board of Management of Bayer AG and named him President of the Crop Science Division. Santos succeeded Liam Condon, who had informed the Supervisory Board that he wished to bring forward the end date of his contract with the company from December 31, 2023, to December 31, 2021.

The Supervisory Board of Bayer AG has appointed Bill Anderson to become CEO of Bayer, effective June 1, 2023. He will join Bayer as a member of the Board of Management on April 1, 2023. Current CEO Werner Baumann will retire at the end of May 2023.

2.1.3 Economic Environment

Sharp slowdown in global economic growth

Global economic growth slowed significantly in 2022, due in part to the impact of the war in Ukraine, rising prices and lingering energy supply concerns. In addition, financing conditions came under the spotlight over the course of the year. In response to high inflation, major central banks tightened monetary policy and hiked base rates, placing additional strain on growth. Global economic growth was also hampered by the below-average growth of the Chinese economy. This was mainly due to the country's strict COVID-19 measures, which were only relaxed toward the end of the year.

A 2.1.3/1

Economic Environment

	Growth[1] 2021	Growth[1] 2022
World	+ 6.0%	+ 3.0%
European Union	+ 5.4%	+ 3.5%
of which Germany	+ 2.6%	+ 1.9%
United States	+ 5.9%	+ 2.0%
Emerging Markets[2]	+ 7.1%	+ 3.5%

2021 figures restated

[1] Real GDP growth, source: IHS Markit (as of January 2023)

[2] Including about 50 countries defined by IHS Markit as Emerging Markets in line with the World Bank

Currency development

In 2022, Group sales included positive currency effects of €3,003 million, and EBITDA before special items contained positive currency effects of €429 million. The effects pertained to the currencies shown in the following table.

A 2.1.3/2

Currency Development Bayer Group

	Average end-of-day exchange rate against the euro for the year		€ million	
	2021	2022	Fx effect on sales	Fx effect on clean EBITDA
AUD	1.57	1.52	33	18
BRL	6.37	5.42	778	466
CAD	1.48	1.37	138	79
CNY	7.63	7.08	286	200
JPY	129.82	137.76	(115)	(69)
MXN	23.99	21.13	141	62
RUB	87.11	70.22	152	114
TRY	10.23	17.27	(200)	(61)
USD	1.18	1.05	1,719	4
Other currency areas and effects[1]			71	(384)
Total			**3,003**	**429**

[1] Fx hedging, including hedging costs

2.2 Earnings; Asset and Financial Position of the Bayer Group

2.2.1 Earnings Performance of the Bayer Group

Business Development of the Bayer Group

A 2.2.1/1

			Change (%)				Change (%)	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Sales	**11,118**	**12,000**	**+7.9**	**+4.1**	**44,081**	**50,739**	**+15.1**	**+8.7**
Change in sales[1]								
Volume	+3.7%	**–0.6%**			+6.8%	**+0.8%**		
Price	+4.3%	**+4.7%**			+2.1%	**+7.9%**		
Currency	+2.9%	**+5.5%**			–2.6%	**+6.8%**		
Portfolio	+0.3%	**–1.7%**			+0.2%	**–0.4%**		
Sales by region								
Europe/Middle East/Africa	3,255	**3,068**	–5.7	–5.2	13,648	**14,429**	+5.7	+6.0
North America	3,401	**3,937**	+15.8	+8.8	14,952	**17,571**	+17.5	+7.0
Asia/Pacific	2,276	**2,283**	+0.3	+3.2	8,849	**9,451**	+6.8	+3.8
Latin America	2,186	**2,712**	+24.1	+11.8	6,632	**9,288**	+40.0	+24.4
EBITDA[1]	**1,731**	**3,276**	**+89.3**		**6,409**	**13,515**	**+110.9**	
Special items[1]	(664)	**814**			(4,770)	**2**		
EBITDA before special items[1]	**2,395**	**2,462**	**+2.8**		**11,179**	**13,513**	**+20.9**	
EBITDA margin before special items[1]	21.5%	**20.5%**			25.4%	**26.6%**		
EBIT[1]	**2,021**	**1,432**	**–29.1**		**3,353**	**7,012**	**+109.1**	
Special items[1]	638	**(21)**			(3,942)	**(2,245)**		
EBIT before special items[1]	**1,383**	**1,453**	**+5.1**		**7,295**	**9,257**	**+26.9**	
Financial result	**(524)**	**(562)**	**+7.3**		**(1,307)**	**(2,342)**	**+79.2**	
Net income (from continuing and discontinued operations)	**1,161**	**611**	**–47.4**		**1,000**	**4,150**	**.**	
Earnings per share from continuing and discontinued operations (€)	**1.18**	**0.62**	**–47.5**		**1.02**	**4.22**	**.**	
Core earnings per share[1] **from continuing operations (€)**	**1.26**	**1.35**	**+7.1**		**6.51**	**7.94**	**+22.0**	
Net cash provided by (used in) operating activities (from continuing and discontinued operations)	**3,046**	**3,061**	**+0.5**		**5,089**	**7,093**	**+39.4**	
Free cash flow[1]	**1,535**	**1,420**	**–7.5**		**1,415**	**3,111**	**+119.9**	
Net financial debt (at end of period)	**33,137**	**31,809**	**–4.0**		**33,137**	**31,809**	**–4.0**	
Cash flow-relevant capital expenditures (from continuing and discontinued operations)	**1,140**	**1,324**	**+16.1**		**2,611**	**2,949**	**+12.9**	
Research and development expenses	**1,012**	**1,614**	**+59.5**		**5,412**	**6,572**	**+21.4**	
Depreciation, amortization and impairment losses/loss reversals	**(290)**	**1,844**	**.**		**3,056**	**6,503**	**+112.8**	
Number of employees (at end of period)	**99,637**	**101,369**	**+1.7**		**99,637**	**101,369**	**+1.7**	
Personnel expenses (including pension expenses)	**3,016**	**3,141**	**+4.1**		**11,798**	**12,619**	**+7.0**	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Group sales up significantly on a currency- and portfolio-adjusted basis

Sales of the Bayer Group rose to €50,739 million (Fx & portfolio adj. +8.7%; reported +15.1%) in 2022, with Germany accounting for €2,477 million of this figure.

Sales at Crop Science advanced by 15.6% (Fx & portfolio adj.) to €25,169 million, with business up in all regions. We registered double-digit percentage gains in Latin America and Europe/Middle East/Africa, and also posted significant growth in North America and Asia/Pacific. Sales at Pharmaceuticals rose by 1.1% (Fx & portfolio adj.) to €19,252 million. Strong performance by Eylea™, our radiology business and the new products Nubeqa™ and Kerendia™ offset declines due to factors such as additional tender procedures in China. Sales at Consumer Health advanced by 8.4% (Fx & portfolio adj.) to €6,080 million, with gains registered in all regions and categories. In particular, the business with cough and cold products benefited from continuously elevated cold incidence rates following the lifting of protection and hygiene measures, as well as the return of mobility. In the Reconciliation, sales increased by 2.9% to €238 million.

Earnings

EBITDA before special items of the Bayer Group rose by 20.9% to €13,513 million (2021: €11,179 million). This figure included a positive currency effect of €429 million. EBITDA before special items at Crop Science climbed by 46.2% to €6,867 million in 2022 (2021: €4,698 million), mainly due to the substantial improvement in business performance. We also benefited from contributions from ongoing efficiency programs. At Pharmaceuticals, EBITDA before special items rose by 1.6% to €5,873 million (2021: €5,779 million), with earnings benefiting from the increase in sales and, to a lesser extent, from income from the sale of noncore businesses. EBITDA before special items at Consumer Health advanced by 14.9% to €1,367 million (2021: €1,190 million) due to the significant increase in sales and the division's cost and price management efforts. In the Reconciliation, EBITDA before special items came in at minus €594 million (2021: minus €488 million).

EBITDA came in at €13,515 million in 2022 (2021: €6,409 million). **Depreciation, amortization, impairment losses and impairment loss reversals** led to net expenses of €6,503 million (2021: €3,056 million), with intangible assets accounting for €4,691 million (2021: €1,482 million) and property, plant and equipment for €1,812 million (2021: €1,574 million). Impairment losses and impairment loss reversals led to net expenses of €2,554 million (2021: net gains of €684 million), with intangible assets accounting for an expense of €2,332 million (2021: gain of €741 million).

The impairment losses mainly related to the Crop Science Division (€2,184 million), and in this respect primarily concerned the cash-generating units Soybean Seed & Traits (€1,432 million), Vegetable Seeds (€652 million), glyphosate (€349 million) and cotton seed (€64 million). There was also an impairment loss of €734 million on goodwill. The impairment loss for Soybean Seed & Traits was largely due to increased production costs and a rise in the weighted average cost of capital at the end of the fourth quarter. With respect to Vegetable Seeds, the impairment loss was primarily attributable to a deterioration in business prospects. The impairment loss recorded for glyphosate was largely the result of an increase in the weighted average cost of capital and a deterioration in business prospects.

In addition, an impairment loss reversal of €1,111 million was recorded for the cash-generating unit Corn Seed & Traits, with an increase in the weighted average cost of capital more than offset by improved business prospects.

Net impairment losses of €2,226 million (2021: net impairment loss reversals of €844 million) and accelerated depreciation of €4 million (2021: €16 million) were included in special items.

EBIT before special items rose by 26.9% to €9,257 million (2021: €7,295 million). **EBIT** amounted to €7,012 million (2021: €3,353 million) after net special charges of €2,245 million (2021: €3,942 million) that were mainly attributable to the aforementioned impairment losses and impairment loss reversals recorded at the Crop Science Division.

In 2022, the following special effects were taken into account in calculating EBIT and EBITDA before special items.

A 2.2.1/2

Special Items by Category[1]

€ million	EBIT Q4 2021	EBIT Q4 2022	EBIT 2021	EBIT 2022	EBITDA Q4 2021	EBITDA Q4 2022	EBITDA 2021	EBITDA 2022
Total special items	**638**	**(21)**	**(3,942)**	**(2,245)**	**(664)**	**814**	**(4,770)**	**2**
Restructuring	(415)	(350)	(1,322)	(697)	(407)	(315)	(1,304)	(662)
of which in the Reconciliation	(162)	(118)	(570)	(233)	(162)	(100)	(570)	(215)
Acquisition/integration	5	(2)	(19)	–	5	(2)	(19)	–
of which in the Reconciliation	(1)	–	(1)	–	(1)	–	(1)	–
Divestments	(41)	1,196	5	1,320	(34)	1,196	12	1,320
of which in the Reconciliation	–	–	–	(10)	–	–	–	(10)
Litigations/legal risks	(99)	(37)	(3,310)	(616)	(99)	(37)	(3,310)	(616)
of which in the Reconciliation	(80)	(37)	(34)	(744)	(80)	(37)	(34)	(744)
Impairment losses/loss reversals[2]	1,309	(801)	841	(2,215)	(8)	(1)	(12)	(3)
Other	(121)	(27)	(137)	(37)	(121)	(27)	(137)	(37)
of which in the Reconciliation	(52)	–	(52)	–	(52)	–	(52)	–

2021 figures restated

[1] For definition, see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

[2] Where not already included in the other special items categories

Core earnings per share

Core earnings per share were up significantly year on year, at €7.94 (2021: €6.51; +22.0%), driven by the strong earnings contribution from the Crop Science Division. By contrast, the unfavorable development of the financial result after special items had a negative impact.

Earnings per share (total) came in at €4.22 (2021: €1.02) and, in comparison with core earnings per share, were mainly diminished by the impairment losses described above.

A 2.2.1/3

Core Earnings per Share[1]

€ million	Q4 2021	Q4 2022	2021	2022
EBIT[1] (as per income statements)	**2,021**	**1,432**	**3,353**	**7,012**
Amortization and impairment losses/loss reversals on goodwill and other intangible assets	(651)	1,231	1,482	4,691
Impairment losses/loss reversals on property, plant and equipment, and accelerated depreciation included in special items	(34)	190	74	226
Special items (other than accelerated depreciation, amortization and impairment losses / loss reversals)	664	(814)	4,770	(2)
Core EBIT[1]	**2,000**	**2,040**	**9,679**	**11,927**
Financial result (as per income statements)	(524)	(562)	(1,307)	(2,342)
Special items in the financial result[2]	137	156	95	408
Income taxes (as per income statements)	(327)	(261)	(1,024)	(504)
Special items in income taxes	–	–	–	–
Tax effects related to amortization, impairment losses/loss reversals and special items	(39)	(39)	(1,021)	(1,662)
Income after income taxes attributable to noncontrolling interest (as per income statements)	(9)	2	(22)	(16)
Above-mentioned adjustments attributable to noncontrolling interest	–	(6)	(1)	(7)
Core net income from continuing operations	**1,238**	**1,329**	**6,399**	**7,804**
Shares (million)				
Weighted average number of shares	982.42	982.42	982.42	982.42
€				
Core earnings per share from continuing operations[1]	**1.26**	**1.35**	**6.51**	**7.94**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Includes in particular the changes in the fair value of the interests in Century Therapeutics, Inc. and Pyxis Oncology, Inc. as well as interest cost for the provisions for litigations/legal risks. The prior-year figure mainly comprised currency effects in connection with dividend payments in Brazil.

Bayer Group – Other Earnings Parameters

A 2.2.1/4

Bayer Group Summary Income Statements

€ million	Q4 2021	Q4 2022	Change (%)	2021	2022	Change (%)
Net sales	11,118	12,000	+7.9	44,081	50,739	+15.1
Cost of goods sold	(3,685)	(4,768)	+29.4	(16,816)	(19,871)	+18.2
Selling expenses	(3,505)	(3,706)	+5.7	(12,363)	(14,084)	+13.9
Research and development expenses	(1,012)	(1,614)	+59.5	(5,412)	(6,572)	+21.4
General administration expenses	(786)	(720)	–8.4	(2,962)	(2,838)	–4.2
Other operating income (+) and expenses (–)	(109)	240	.	(3,175)	(362)	–88.6
EBIT[1]	**2,021**	**1,432**	**–29.1**	**3,353**	**7,012**	**+109.1**
Financial result	**(524)**	**(562)**	**+7.3**	**(1,307)**	**(2,342)**	**+79.2**
Income before income taxes	**1,497**	**870**	**–41.9**	**2,046**	**4,670**	**+128.3**
Income taxes	(327)	(261)	–20.2	(1,024)	(504)	–50.8
Income from continuing operations after taxes	1,170	609	–47.9	1,022	4,166	.
Income from discontinued operations after taxes	–	–		–	–	
Income after income taxes (total)	**1,170**	**609**	**–47.9**	**1,022**	**4,166**	**.**
of which attributable to noncontrolling interest	9	(2)	.	22	16	–27.3
of which attributable to Bayer AG stockholders (net income)	**1,161**	**611**	**–47.4**	**1,000**	**4,150**	**.**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Functional costs

The special effects accounted for in EBIT and EBITDA before special items were attributable to the functional costs as shown in the following table.

A 2.2.1/5

Special Items[1] by Functional Cost

€ million	EBIT Q4 2021	EBIT Q4 2022	EBIT 2021	EBIT 2022	EBITDA Q4 2021	EBITDA Q4 2022	EBITDA 2021	EBITDA 2022
Total special items	**638**	**(21)**	**(3,942)**	**(2,245)**	**(664)**	**814**	**(4,770)**	**2**
Cost of goods sold	661	(118)	229	(985)	(66)	(27)	(199)	(76)
Selling expenses	(99)	(215)	(89)	(538)	(216)	(184)	(315)	(350)
Research and development expenses	442	45	(86)	(404)	(16)	7	(260)	(5)
General administration expenses	(198)	(115)	(705)	(348)	(198)	(97)	(705)	(330)
Other operating income/(expenses)	(168)	382	(3,291)	30	(168)	1,115	(3,291)	763

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

The cost of goods sold rose by 18.2% to €19,871 million, and the ratio of the cost of goods sold to total sales increased to 39.2% (2021: 38.1%), mainly due to currency effects and special items at the Crop Science Division. After adjusting for special items and currency effects, the cost of goods sold increased by 2.6%.

Selling expenses rose by 13.9% to €14,084 million and accounted for 27.8% (2021: 28.0%) of sales. After adjusting for special items and currency effects, selling expenses increased by 5.3%, mainly at Crop Science and Consumer Health. This was partly due to investment in marketing activities and projects.

Research and development (R&D) expenses rose by 21.4% to €6,572 million, and the ratio of R&D expenses to sales increased to 13.0% (2021: 12.3%), driven by higher special charges at Crop Science and currency effects. Adjusted for special items and currency effects, R&D expenses rose by 10.3%. This was driven by increases at Crop Science, mainly due to inflation effects, and at Pharmaceuticals, partly as a result of acquisitions.

General administration expenses decreased by 4.2% to €2,838 million, mainly due to the decline in special charges. The ratio of general administration expenses to total sales fell to 5.6% (2021: 6.7%). Adjusted for special items and currency effects, general administration expenses rose by 2.6%.

The balance of other operating expenses and other operating income came in at minus €362 million, representing a significant 88.6% improvement against the prior year (2021: minus €3,175 million). The 2021 figure mainly reflected the allocations to provisions in connection with the glyphosate litigations.

Financial result and income before income taxes

After a financial result of minus €2,342 million (2021: minus €1,307 million), income before income taxes amounted to €4,670 million (2021: €2,046 million). The negative development of the financial result was largely attributable to an increase in expense for the unwinding of discount on provisions and to negative changes in the fair value of financial investments.

A 2.2.1/6

Financial Result[1]

€ million	Q4 2021	Q4 2022	2021	2022
Income (loss) from investments in affiliated companies	(115)	(110)	23	(300)
Net interest expense	(194)	(211)	(930)	(1,058)
Other financial income/expenses	(215)	(241)	(400)	(984)
of which interest portion of discounted provisions	(27)	(80)	(71)	(420)
of which exchange gain (loss)	(166)	(63)	(385)	(219)
of which miscellaneous financial income/expenses	(22)	(98)	56	(345)
Total	**(524)**	**(562)**	**(1,307)**	**(2,342)**
of which special items (net)	(137)	(156)	(95)	(408)

[1] Further information on the financial result is given in Note [10].

Income taxes

Income tax expense of €504 million was recorded in 2022 (2021: €1,024 million). The decline in tax expense was mainly attributable to the recognition of higher deferred tax assets arising from temporary differences in connection with the settlement agreements in the United States.

Net income

After income tax expense and income attributable to noncontrolling interest, net income in 2022 came to €4,150 million (2021: €1,000 million).

2.2.2 Business Development by Division

Crop Science

Positive market environment

The global seed and crop protection market grew strongly in 2022 (Fx adj. +12%; 2021: +7%) due to continued strong global demand for corn and soybeans and the overall effect of the Russia-Ukraine war across commodities. Growth was also driven by higher prices for agrochemical products, primarily due to high inflation and supply bottlenecks. Increased prices and the resulting improvement in farm incomes encouraged the application of premium crop protection products, especially herbicides, across all regions and indications. This had a positive impact on the overall Crop Science business.

A 2.2.2/1

Key Data – Crop Science

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Sales	**4,690**	**5,569**	**+18.7**	**+11.4**	**20,207**	**25,169**	**+24.6**	**+15.6**
Change in sales[1]								
Volume	−1.1%	+2.9%			+5.6%	−0.1%		
Price	+9.9%	+8.5%			+5.5%	+15.7%		
Currency	+3.5%	+10.6%			−3.8%	+9.7%		
Portfolio	0.0%	−3.3%			0.0%	−0.7%		
Sales by region								
Europe/Middle East/Africa	573	632	+10.3	+13.6	4,205	4,843	+15.2	+17.4
North America	1,695	2,014	+18.8	+14.7	8,721	10,341	+18.6	+9.0
Asia/Pacific	614	625	+1.8	+4.5	2,183	2,433	+11.5	+8.2
Latin America	1,808	2,298	+27.1	+10.0	5,098	7,552	+48.1	+28.7
EBITDA[1]	**715**	**1,511**	**+111.3**		**940**	**7,546**	**.**	
Special items[1]	(46)	691			(3,758)	679		
EBITDA before special items[1]	**761**	**820**	**+7.8**		**4,698**	**6,867**	**+46.2**	
EBITDA margin before special items[1]	16.2%	14.7%			23.2%	27.3%		
EBIT[1]	**1,435**	**127**	**−91.1**		**(495)**	**2,950**	**.**	
Special items[1]	1,263	(126)			(2,915)	(1,460)		
EBIT before special items[1]	**172**	**253**	**+47.1**		**2,420**	**4,410**	**+82.2**	
Net cash provided by operating activities	**2,335**	**2,073**	**−11.2**		**1,272**	**3,394**	**+166.8**	
Cash flow-relevant capital expenditures	470	760	+61.7		1,019	1,486	+45.8	
Research and development expenses	138	679	.		2,029	2,876	+41.7	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Sales

Sales at Crop Science advanced by a significant 15.6% (Fx & portfolio adj.) in 2022 to €25,169 million, with business up in all regions. We registered double-digit percentage gains in Latin America and Europe/Middle East/Africa, and posted significant growth in North America and Asia/Pacific.

A 2.2.2/2

Sales by Strategic Business Entity

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Crop Science	**4,690**	**5,569**	**+18.7**	**+11.4**	**20,207**	**25,169**	**+24.6**	**+15.6**
Corn Seed & Traits	1,042	1,438	+38.0	+23.6	5,162	6,089	+18.0	+8.8
Herbicides	1,302	1,648	+26.6	+16.8	5,328	8,325	+56.3	+43.9
Fungicides	706	727	+3.0	−6.1	2,924	3,273	+11.9	+5.2
Soybean Seed & Traits	544	774	+42.3	+22.6	2,164	2,462	+13.8	−0.2
Insecticides	373	375	+0.5	−6.5	1,417	1,584	+11.8	+4.9
Environmental Science	259	122	−52.9	+3.9	1,103	1,130	+2.4	+8.0
Vegetable Seeds	171	191	+11.7	+7.4	653	717	+9.8	+5.3
Other	293	294	+0.3	−2.5	1,456	1,589	+9.1	+1.8

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

// Sales at **Corn Seed & Traits** rose year on year as our business increased its market share. Price increases in all regions more than offset a decrease in acreages in North America and lower license revenues.
// **Herbicides** posted considerable gains due to higher prices, especially in Latin and North America and in Europe/Middle East/Africa, as supply for glyphosate-based products remained tight.
// Sales at **Fungicides** were also up, driven by higher prices in the Latin America and Europe/Middle East/Africa regions in particular, which more than offset a decline in volumes in North America.
// Sales at **Soybean Seed & Traits** were level with the prior year. We benefited from higher license revenues in Latin America, but saw business decline in North America due to lower volumes.
// Sales at **Insecticides** increased, primarily due to higher volumes and prices for our Curbix™ product in Latin America. Sales in North America were down due to lower volumes.
// **Environmental Science** registered an increase in sales in North and Latin America as well as in Asia/Pacific due to higher prices.
// Sales at **Vegetable Seeds** rose due to price increases in all regions. These higher prices more than offset a decline in volumes, especially in Europe/Middle East/Africa.
// Sales in the reporting unit **"Other"** expanded, largely as a result of volume and price increases in our North American cotton seed business.

Earnings

EBITDA before special items at Crop Science advanced by 46.2% to €6,867 million in 2022 (2021: €4,698 million), mainly due to the significant increase in sales. We also benefited from contributions from ongoing efficiency programs. In addition, there was a positive currency effect of €284 million. By contrast, earnings were diminished by an increase in costs, particularly in the cost of goods sold, which was mainly due to high inflation. The EBITDA margin before special items increased by 4.1 percentage points to 27.3%.

EBIT came in at €2,950 million in 2022 (2021: minus €495 million) after special charges of €1,460 million (2021: €2,915 million). These special charges primarily related to the aforementioned impairment losses, which mainly concerned the cash-generating unit Soybean Seed & Traits. These effects were partially offset by impairment loss reversals in the Corn Seed & Traits cash-generating unit and special gains from the divestment of the Environmental Science Professional business.

A 2.2.2/3

Special Items[1] Crop Science

€ million	EBIT Q4 2021	EBIT Q4 2022	EBIT 2021	EBIT 2022	EBITDA Q4 2021	EBITDA Q4 2022	EBITDA 2021	EBITDA 2022
Restructuring	(37)	(46)	(211)	(91)	(36)	(29)	(208)	(74)
Acquisition/integration	(8)	(2)	(12)	4	(8)	(2)	(12)	4
Divestments	(37)	734	(77)	648	(30)	734	(70)	648
Litigations/legal risks	6	(10)	(3,466)	113	6	(10)	(3,466)	113
Impairment losses/loss reversals	1,317	(801)	852	(2,125)	–	(1)	(1)	(3)
Other	22	(1)	(1)	(9)	22	(1)	(1)	(9)
Total special items	**1,263**	**(126)**	**(2,915)**	**(1,460)**	**(46)**	**691**	**(3,758)**	**679**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2022

Sales

Sales advanced by 11.4% (Fx & portfolio adj.) to €5,569 million in the fourth quarter, with growth in all regions. Our business in North America, Europe/Middle East/Africa and Latin America saw sales rise by double-digit percentages. Sales at **Corn Seed & Traits** were up significantly in North and Latin America, driven by an increase in prices and volumes. At **Herbicides**, sales rose year on year due to higher volumes and prices, especially for our glyphosate-based products. **Fungicides** recorded a decline in sales, with business down in Latin America in particular due to volume downsides in Brazil and drought in Argentina. Sales grew significantly at **Soybean Seed & Traits**, mainly thanks to higher license revenues in Latin America. Sales at **Insecticides** decreased in all regions, with business down in Latin America in particular due to drought in Argentina. **Environmental Science** registered an increase in sales thanks to higher prices. Sales at **Vegetable Seeds** increased year on year, with business growing in Europe/Middle East/Africa in particular thanks to higher prices and volumes. Sales in the reporting unit **"Other"** declined, primarily as a result of lower volumes in our canola business.

Earnings

EBITDA before special items increased by 7.8% to €820 million in the fourth quarter (Q4 2021: €761 million). The growth in earnings was mainly driven by the substantial improvement in business performance, as well as contributions from ongoing efficiency programs. There was also a positive currency effect of €64 million. By contrast, earnings were diminished by an increase in costs, particularly in the cost of goods sold, which was mainly due to high inflation. The EBITDA margin before special items declined by 1.5 percentage points to 14.7%.

EBIT decreased to €127 million in the fourth quarter (Q4 2021: €1,435 million) after special charges of €126 million (Q4 2021: special gains of €1,263 million) that largely related to the aforementioned effects of the impairment losses. The divestment of the Environmental Science Professional business had a positive impact.

Pharmaceuticals

Continued market growth

The pharmaceuticals market grew by 7% (Fx adj.) in 2022 (2021: 9%), driven once again by a general recovery from the significant restrictions introduced to combat the COVID-19 pandemic. As in the previous year, volumes increased due to catch-up effects and a normalization in the number of treatments and diagnostic tests performed. In addition, antiviral drugs and COVID-19 vaccines continued to make a substantial contribution to market growth.

A 2.2.2/4

Key Data – Pharmaceuticals

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Sales	**4,951**	**4,855**	**–1.9**	**–2.8**	**18,349**	**19,252**	**+4.9**	**+1.1**
Change in sales[1]								
Volume	+8.3%	**–3.4%**			+9.3%	**+1.3%**		
Price	–0.7%	**+0.6%**			–1.9%	**–0.2%**		
Currency	+2.4%	**+1.8%**			–1.4%	**+3.9%**		
Portfolio	+0.6%	**–0.9%**			+0.4%	**–0.1%**		
Sales by region								
Europe/Middle East/Africa	2,127	**1,882**	–11.5	–11.3	7,438	**7,424**	–0.2	–0.7
North America	1,133	**1,286**	+13.5	+4.3	4,155	**4,772**	+14.8	+3.4
Asia/Pacific	1,460	**1,428**	–2.2	+1.4	5,834	**6,051**	+3.7	+1.3
Latin America	231	**259**	+12.1	+14.7	922	**1,005**	+9.0	+4.1
EBITDA[1]	**1,208**	**1,715**	**+42.0**		**5,470**	**6,212**	**+13.6**	
Special items[1]	(298)	**282**			(309)	**339**		
EBITDA before special items[1]	**1,506**	**1,433**	**–4.8**		**5,779**	**5,873**	**+1.6**	
EBITDA margin before special items[1]	30.4%	**29.5%**			31.5%	**30.5%**		
EBIT[1]	**938**	**1,425**	**+51.9**		**4,469**	**4,985**	**+11.5**	
Special items[1]	(305)	**282**			(324)	**249**		
EBIT before special items[1]	**1,243**	**1,143**	**–8.0**		**4,793**	**4,736**	**–1.2**	
Net cash provided by operating activities	**595**	**1,061**	**+78.3**		**3,493**	**3,588**	**+2.7**	
Cash flow-relevant capital expenditures	516	**420**	–18.6		1,178	**1,045**	–11.3	
Research and development expenses	792	**839**	+5.9		3,139	**3,397**	+8.2	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Sales

Sales at Pharmaceuticals rose by 1.1% (Fx & portfolio adj.) to €19,252 million in 2022. Strong performance by our radiology business, Eylea™ and our new products Nubeqa™ and Kerendia™ was partially offset by declines due to factors such as additional tender procedures in China, especially for Xarelto™ and Nexavar™. Sales of the cancer drug Nubeqa™ nearly doubled year on year, with significant gains in all regions. Kerendia™, our product for the treatment of chronic kidney disease associated with type 2 diabetes, contributed €107 million to sales.

A 2.2.2/5

Best-Selling Pharmaceuticals Products

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Xarelto™	1,247	1,204	–3.4	–3.8	4,735	4,516	–4.6	–5.8
Eylea™	773	821	+6.2	+7.7	2,918	3,213	+10.1	+9.2
Mirena™/Kyleena™/Jaydess™	282	299	+6.0	–1.9	1,170	1,277	+9.1	–0.5
Kogenate™/Kovaltry™/Jivi™	219	206	–5.9	–10.3	823	847	+2.9	–3.2
Adalat™	207	148	–28.5	–28.0	763	831	+8.9	+1.6
YAZ™/Yasmin™/Yasminelle™	178	184	+3.4	+3.0	740	790	+6.8	+2.6
Aspirin™ Cardio	170	201	+18.2	+18.4	678	788	+16.2	+11.0
Adempas™	328	169	–48.5	–51.3	738	652	–11.7	–17.2
Stivarga™	120	155	+29.2	+23.9	477	613	+28.5	+20.2
CT Fluid Delivery	120	139	+15.8	+4.3	449	494	+10.0	+0.3
Gadovist™ product family	112	106	–5.4	–5.1	418	469	+12.2	+9.0
Nubeqa™	69	158	+129.0	+116.3	219	466	+112.8	+97.0
Ultravist™	97	101	+4.1	+5.0	357	436	+22.1	+17.5
Betaferon™/Betaseron™	93	77	–17.2	–20.4	337	311	–7.7	–12.7
Nexavar™	91	46	–49.5	–47.9	435	267	–38.6	–41.2
Total best-selling products	**4,106**	**4,014**	**–2.2**	**–3.8**	**15,257**	**15,970**	**+4.7**	**+0.8**
Proportion of Pharmaceuticals sales	83%	83%			83%	83%		

Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.4 “Alternative Performance Measures Used by the Bayer Group.”

// Sales of our oral anticoagulant **Xarelto™** decreased, largely due to tender procedures in China, price pressure in the United Kingdom and the expiration of our patent in Brazil. License revenues – recognized as sales – in the United States, where Xarelto™ is marketed by a subsidiary of Johnson & Johnson, were up against the previous year on a currency-adjusted basis.
// Business with our ophthalmology drug **Eylea™** expanded strongly, with gains in all regions. We achieved significant volume increases through continued market penetration, particularly in Europe and Asia/Pacific.
// Sales of our pulmonary hypertension treatment **Adempas™** were significantly lower than in the previous year, which had been boosted by a €190 million milestone payment. As in the past, sales reflected the proportionate recognition of the upfront and milestone payments resulting from the sGC collaboration with Merck & Co., United States.
// We registered strong volume growth and stable prices in China for **Aspirin™ Cardio**, our product for secondary prevention of heart attacks, as well as for our cancer drug **Stivarga™**.
// Our radiology business, comprising the **Gadovist™** and **Ultravist™** product lines, increased sales, largely driven by higher volumes in all regions.

Earnings

EBITDA before special items rose by 1.6% to €5,873 million in 2022, with earnings benefiting from the increase in sales and, to a lesser extent, from income from the sale of noncore businesses. We increased our investments in marketing new products and also incurred higher research and development expenses for our platform technologies and projects in advanced clinical development. By contrast, a decline in costs for our established products and the termination of development projects had a positive impact on earnings. In addition, higher costs due to a sharp increase in procurement prices had a negative effect. There was a positive currency effect of €9 million (2021: negative currency effect of €77 million). The EBITDA margin before special items declined by 1.0 percentage points to 30.5%.

EBIT at Pharmaceuticals rose by a substantial 11.5% to €4,985 million after net special gains of €249 million (2021: net special charges of €324 million). Earnings mainly benefitted from the sale of our lormetazepam products and our men’s health product Nebido™, but were diminished by expenses that primarily related to restructuring.

A 2.2.2/6

Special Items[1] Pharmaceuticals

€ million	EBIT Q4 2021	EBIT Q4 2022	EBIT 2021	EBIT 2022	EBITDA Q4 2021	EBITDA Q4 2022	EBITDA 2021	EBITDA 2022
Restructuring	(191)	(164)	(495)	(326)	(184)	(164)	(480)	(326)
Acquisition/integration	14	–	(6)	(4)	14	–	(6)	(4)
Divestments	(4)	462	82	682	(4)	462	82	682
Litigations/legal risks	(25)	10	190	15	(25)	10	190	15
Impairment losses/loss reversals	(8)	–	(11)	(90)	(8)	–	(11)	–
Other	(91)	(26)	(84)	(28)	(91)	(26)	(84)	(28)
Total special items	**(305)**	**282**	**(324)**	**249**	**(298)**	**282**	**(309)**	**339**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2022

Sales

Sales at Pharmaceuticals were down 2.8% (Fx & portfolio adj.) to €4,855 million in the fourth quarter. Declining sales of Adempas™, driven by an effect from the prior-year quarter, were partially offset by gains for Eylea™, Nubeqa™ and Kerendia™, with the latter contributing €48 million to sales.

Sales of **Xarelto™** declined, mainly due to tender procedures in China as well as notable decreases in volumes in Europe. Sales of **Eylea™** increased further, especially in Europe and Asia/Pacific. **Adempas™** sales were down significantly against the prior-year quarter, which had been boosted by a €190 million milestone payment as part of the sGC collaboration with Merck & Co., United States. Sales of our **Kogenate™/Kovaltry™/Jivi™** blood-clotting medicines fell sharply overall due to competition, with declines for Kogenate™ only partly offset by gains for Jivi™. **Adalat™** sales declined considerably as a result of tender procedures introduced in China in the fourth quarter. Sales of **Nubeqa™** more than doubled, with gains in all regions. The product therefore continued its growth momentum, especially in the United States, with significant increases in volumes. We registered strong volume growth and stable prices in China for **Aspirin™ Cardio** and **Stivarga™**.

Earnings

EBITDA before special items declined by 4.8% in the fourth quarter to €1,433 million (Q4 2021: €1,506 million), mainly due to the decline in sales. We increased our investments in marketing new products and also incurred higher research and development expenses for our platform technologies and projects in advanced clinical development. By contrast, a decline in costs for our established products and the termination of development projects had a positive impact on earnings. In addition, higher costs due to a sharp increase in procurement prices had a negative effect. There was a negative currency effect of €11 million (Q4 2021: positive currency effect of €19 million). The EBITDA margin before special items declined by 0.9 percentage points to 29.5%.

EBIT at Pharmaceuticals increased by a substantial 51.9% to €1,425 million after net special gains of €282 million (Q4 2021: net special charges of €305 million). Earnings mainly benefitted from the sale of our men's health product Nebido™, but were diminished by expenses that primarily related to restructuring.

Consumer Health

Increased market growth

Growth of the global consumer health market in 2022 was around 8% (2021: 6%). Overall market growth improved as we saw an increase in demand for cough and cold and digestive health products, and inflationary pressure that resulted in price increases.

A 2.2.2/7

Key Data – Consumer Health

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Sales	**1,405**	**1,524**	**+8.5**	**+5.8**	**5,293**	**6,080**	**+14.9**	**+8.4**
Changes in sales[1]								
Volume	+4.6%	**–0.8%**			+3.4%	**+2.2%**		
Price	+4.0%	**+6.6%**			+3.1%	**+6.2%**		
Currency	+3.2%	**+2.3%**			–2.7%	**+6.0%**		
Portfolio	+0.6%	**+0.4%**			+0.9%	**+0.5%**		
Sales by region								
Europe/Middle East/Africa	486	**496**	+2.1	+1.3	1,779	**1,921**	+8.0	+6.8
North America	573	**638**	+11.3	+0.1	2,075	**2,458**	+18.5	+5.7
Asia/Pacific	200	**230**	+15.0	+13.4	829	**967**	+16.6	+9.9
Latin America	146	**160**	+9.6	+32.5	610	**734**	+20.3	+20.1
EBITDA[1]	**287**	**291**	**+1.4**		**1,144**	**1,320**	**+15.4**	
Special items[1]	(25)	**(22)**			(46)	**(47)**		
EBITDA before special items[1]	**312**	**313**	**+0.3**		**1,190**	**1,367**	**+14.9**	
EBITDA margin before special items[1]	22.2%	**20.5%**			22.5%	**22.5%**		
EBIT[1]	**201**	**195**	**–3.0**		**808**	**957**	**+18.4**	
Special items[1]	(25)	**(22)**			(46)	**(47)**		
EBIT before special items[1]	**226**	**217**	**–4.0**		**854**	**1,004**	**+17.6**	
Net cash provided by operating activities	**316**	**317**	**+0.3**		**1,030**	**1,046**	**+1.6**	
Cash flow-relevant capital expenditures	89	**74**	–16.9		196	**173**	–11.7	
Research and development expenses	61	**67**	+9.8		199	**221**	+11.1	

Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Sales

Sales at Consumer Health advanced by a substantial 8.4% (Fx & portfolio adj.) in 2022 to €6,080 million, as the division once again reported gains in all regions and categories against a strong prior year. In particular, our business with cough and cold products significantly expanded due to continuously elevated cold incidence rates following the lifting of protection and hygiene measures, as well as the return of mobility. Our allergy business was also able to benefit from the launch of the Astepro™ antihistamine nasal spray. In addition, the Dermatology category achieved double-digit percentage sales gains, in part due to higher demand for Bepanthen™. Following a very strong prior year, the Nutritionals business also registered sales growth.

A 2.2.2/8

Sales by Category

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2021	Q4 2022	Reported	Fx & p adj.	2021	2022	Reported	Fx & p adj.
Consumer Health	**1,405**	**1,524**	**+8.5**	**+5.8**	**5,293**	**6,080**	**+14.9**	**+8.4**
Nutritionals	374	**374**	0.0	+1.2	1,471	**1,563**	+6.3	+1.0
Allergy & Cold	299	**376**	+25.8	+16.0	1,036	**1,377**	+32.9	+21.5
Dermatology	284	**317**	+11.6	+8.4	1,122	**1,287**	+14.7	+10.5
Pain & Cardio	221	**222**	+0.5	+2.6	834	**905**	+8.5	+3.3
Digestive Health	211	**223**	+5.7	0.0	771	**895**	+16.1	+8.6
Other	16	**12**	–25.0	–4.9	59	**53**	–10.2	–8.1

Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

// In **Europe/Middle East/Africa**, sales increased by 6.8% (Fx & portfolio adj.) to €1,921 million. Growth was mainly driven by the Dermatology category, particularly due to higher demand for Bepanthen™ Dry Skin. The Allergy & Cold category saw double-digit percentage sales gains, primarily for the Aspirin™ range of cough and cold products. The Digestive Health category also performed well. Sales in the Nutritionals category were up slightly against the strong prior year, while the Pain & Cardio category saw a moderate decline in sales.
// Sales in **North America** advanced by 5.7% (Fx & portfolio adj.) to €2,458 million. We recorded a significant sales increase in the Allergy & Cold category. This growth was particularly attributable to strong demand for our Alka Seltzer™ range of cough and cold products, as well as the launch of our Astepro™ antihistamine nasal spray in the second half of the year. Sales in the Dermatology and Digestive Health categories grew, in part thanks to Lotrimin™ and MiraLAX™. These positive developments more than offset the notable declines in the Nutritionals category against a very strong prior year, as well as the decrease in sales in the Pain & Cardio category.
// Business in the **Asia/Pacific** region expanded by a substantial 9.9% (Fx & portfolio adj.) to €967 million, with sales gains in all categories. We recorded strong growth at Nutritionals and Dermatology, in part due to higher demand for Redoxon™ and Canesten™. Sales in our Pain & Cardio category increased by a double-digit percentage. Sales were also up in the Allergy & Cold and Digestive Health categories.
// In **Latin America**, sales climbed by a significant 20.1% (Fx & portfolio adj.) to €734 million, with double-digit growth in all categories against a very strong prior year. Growth was particularly strong at Pain & Cardio and Nutritionals as well as at Allergy & Cold, thanks in part to Tabcin™.

Earnings

EBITDA before special items rose by 14.9% to €1,367 million in 2022 (2021: €1,190 million) thanks to the substantial increase in sales as well as our successful cost and price management efforts. We achieved this growth in a business environment that was impacted by significant inflation-related cost increases and large investments in the launch of innovative products, especially for Astepro™. There was a positive currency effect of €85 million (2021: negative currency effect of €39 million). The EBITDA margin before special items came in at 22.5%, matching the prior-year level.

EBIT at Consumer Health came in at €957 million (2021: €808 million) after special charges of €47 million (2021: €46 million) that related to restructuring.

A 2.2.2/9

Special Items[1] Consumer Health

€ million	EBIT Q4 2021	EBIT Q4 2022	EBIT 2021	EBIT 2022	EBITDA Q4 2021	EBITDA Q4 2022	EBITDA 2021	EBITDA 2022
Restructuring	(25)	(22)	(46)	(47)	(25)	(22)	(46)	(47)
Total special items	**(25)**	**(22)**	**(46)**	**(47)**	**(25)**	**(22)**	**(46)**	**(47)**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2022

Sales

Sales at Consumer Health increased by an encouraging 5.8% (Fx & portfolio adj.) to €1,524 million in the fourth quarter of 2022, with all regions contributing. Our business with cough and cold products significantly expanded against a very strong prior-year quarter due to a particularly elevated cold incidence rate. We recorded strong sales gains with our allergy products, benefiting from the launch of our Astepro™ antihistamine nasal spray in North America. Sales in the Dermatology category also rose substantially, with double-digit percentage gains in North and Latin America. We expanded sales in the Nutritionals category against a strong prior-year quarter, with the Pain & Cardio category likewise showing moderate growth. Business at Digestive Health matched the prior-year level.

Earnings

EBITDA before special items came in at €313 million in the fourth quarter of 2022, and was therefore level with the prior year (Q4 2021: €312 million; +0.3%). Positive effects from the increase in sales and our continuous cost and price management efforts were offset by investments in the launch of innovative products, especially for Astepro™, and by a strong rise in costs due to inflation. Earnings were also held back by the absence of positive one-time effects from the sale of minor, nonstrategic brands compared with the prior-year quarter. There was a positive currency effect of €2 million (Q4 2021: €8 million). The EBITDA margin before special items declined by 1.7 percentage points to 20.5%.

EBIT at Consumer Health came in at €195 million (Q4 2021: €201 million) after special charges of €22 million (Q4 2021: €25 million) that related to restructuring.

2.2.3 Value-Based Performance

A 2.2.3/1

Value-Based Performance

	Crop Science		Pharmaceuticals		Consumer Health			Group[2]
€ million	2021	2022	2021	2022	2021	2022	2,021	2,022
EBIT[1]	(495)	2,950	4,469	4,985	808	957	3,353	7,012
Income taxes [3]	119	(708)	(1,073)	(1,196)	(194)	(230)	(805)	(1,683)
NOPAT[1]	(376)	2,242	3,396	3,789	614	727	2,548	5,329
Average capital employed[1]	40,161	41,838	18,275	19,696	9,581	9,676	66,449	69,270
ROCE[1]	–0.9%	5.4%	18.6%	19.2%	6.4%	7.5%	3.8%	7.7%
WACC[1, 4]	6.2%	6.1%	6.2%	6.1%	6.2%	6.1%	6.2%	6.1%

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”
[2] Including Reconciliation
[3] 24% on EBIT; based on historical average of tax rates
[4] At the divisional level, ROCE is compared with the WACC of the Bayer Group as we do not report WACC for the individual divisions.

Bayer’s ROCE in 2022 amounted to 7.7% (2021: 3.8%) and was therefore above the cost of capital (6.1%). All divisions contributed to the positive year-on-year development, especially Crop Science. Due to higher EBIT driven by increased operating profit and a reduction in special charges, Crop Science posted a significant increase in net operating profit after taxes (NOPAT) and thus a substantial improvement in ROCE. Pharmaceuticals’ ROCE also rose due to a reduction in special charges, even though its capital base increased, partly as a result of the acquisition of Vividion Therapeutics, Inc., United States, in 2021. Consumer Health registered higher EBIT, driven by increased operating profit, and a stable capital base, and therefore saw its ROCE improve.

The following overview shows the components of the average capital employed used in calculating ROCE.

A 2.2.3/2

Components of Capital Employed[1]

€ million	Dec. 31, 2021	Dec. 31, 2022
Goodwill	40,106	39,648
Other intangible assets	26,258	24,183
Property, plant and equipment	12,688	13,674
Other financial assets[2]	57	172
Inventories	11,314	13,636
Trade accounts receivable	10,047	10,312
Other receivables[2]	1,896	2,066
Deferred tax assets[2]	2,444	4,334
Claims for income tax refunds	1,526	1,507
Assets held for sale	76	3
Gross capital employed	**106,412**	**109,535**
Other provisions[2]	(15,321)	(13,385)
Trade accounts payable	(6,792)	(7,545)
Other liabilities[2]	(3,406)	(4,531)
Refund liabilities	(4,847)	(5,593)
Contract liabilities	(4,821)	(4,723)
Financial liabilities[2]	–	(5)
Deferred tax liabilities[2]	(814)	(606)
Income tax liabilities	(2,288)	(2,728)
Capital employed[1]	**68,123**	**70,419**
Average capital employed[1]	**66,449**	**69,270**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Selected items forming part of the line item in the statement of financial position; items that were predominantly non-interest-bearing or nonoperating in nature were eliminated from capital employed.

2.2.4 Asset and Financial Position of the Bayer Group

Financial management of the Bayer Group

The financial management of the Bayer Group is conducted centrally. Capital is a global resource, generally procured centrally and distributed within the Bayer Group. The foremost objectives of our financial management are to help bring about a sustained increase in corporate value and to ensure the Group's liquidity and creditworthiness. This involves optimizing the capital structure and effectively managing risks. The management of currency, interest-rate, commodity-price and default risks helps to reduce the volatility of our earnings.

The contracted rating agencies assess Bayer as follows:

A 2.2.4/1

Rating

	Long-term rating	Short-term rating	Outlook
S & P Global Ratings	BBB	A-2	stable
Moody's	Baa2	P-2	negative
Fitch Ratings	BBB+	F2	stable

These investment grade ratings from all three agencies reflect the company's high solvency and ensure access to a broad investor base for financing purposes. Our stated aim is to regain A-category long-term ratings in the future.

As a matter of principle, we pursue a prudent debt management strategy to ensure flexibility, drawing on a balanced financing portfolio. This is fundamentally based on bonds in various currencies, syndicated credit facilities, bilateral loan agreements and a global commercial paper program.

We use financial derivatives to hedge against risks arising from business operations or financial transactions but do not employ contracts in the absence of an underlying transaction. It is our policy to diminish default risks by selecting trading partners with a high credit standing. We closely monitor the execution of all transactions, which are conducted in accordance with Bayer Group policies.

Liquidity and Capital Expenditures of the Bayer Group

A 2.2.4/2

Bayer Group Summary Statements of Cash Flows

€ million	Q4 2021	Q4 2022	2021	2022
Net cash provided by (used in) operating activities (total)	**3,046**	**3,061**	**5,089**	**7,093**
Net cash provided by (used in) investing activities (total)	**(988)**	**67**	**855**	**(2,381)**
Net cash provided by (used in) financing activities (total)	**(1,798)**	**(2,141)**	**(5,645)**	**(4,220)**
Change in cash and cash equivalents due to business activities	**260**	**987**	**299**	**492**
Cash and cash equivalents at beginning of period	**4,316**	**4,365**	**4,191**	**4,564**
Change due to exchange rate movements and to changes in scope of consolidation	(12)	(181)	74	115
Cash and cash equivalents at end of period	**4,564**	**5,171**	**4,564**	**5,171**

Net cash provided by operating activities

Net operating cash flow in 2022 amounted to €7,093 million (2021: €5,089 million) and included net payments of €1,165 million (2021: €4,232 million) to resolve litigations involving glyphosate, dicamba, PCBs and Essure™. That total comprised payments resulting from both settlement agreements and court judgments.

Net cash used in investing activities

Net cash used in investing activities in 2022 amounted to €2,381 million (2021: net cash of €855 million was provided by investing activities). Cash outflows for property, plant and equipment and intangible assets rose to €2,949 million (2021: €2,611 million), with the increase mainly attributable to the Crop Science Division. There was an inflow of €1,130 million (2021: €373 million) from the sale of property, plant and equipment and other assets that resulted partly from the sale of our men's health product Nebido™ and our lormetazepam-based products. Divestments led to a cash inflow, less transferred cash, of €2,287 million (2021: cash outflow of €6 million). This total mainly included the divestment proceeds from the sale of our Environmental Science Professional business to the international private equity firm Cinven. Outflows for non-current financial assets amounted to €1,182 million (2021: €400 million), of which €557 million was attributable to Bayer-Pensionskasse VVaG and Rheinische Pensionskasse VVaG drawing on their effective initial funds. Outflows for acquisitions, less acquired cash, amounted to €89 million (2021: €1,340 million). The high outflows in the previous year mainly related to the acquisition of the US biopharmaceutical company Vividion Therapeutics, Inc. The net cash outflow for current financial assets came to €1,828 million (2021: net inflow of €4,265 million), and primarily pertained to investments in money market funds due to surplus liquidity resulting from the aforementioned sale of the Environmental Science Professional business.

Net cash used in financing activities

There was a net cash outflow of €4,220 million for financing activities (2021: €5,645 million). This included net loan repayments of €974 million (2021: €2,452 million). Net interest payments increased to €1,251 million (2021: €1,200 million). The Bayer Group paid out €1,985 million in dividends (2021: €1,993 million).

Free cash flow

Free cash flow (total), which is the total operating cash flow less capital expenditures plus interest and dividends received less interest paid, was €3,111 million in 2022 (2021: €1,415 million).

Capital expenditures

A 2.2.4/3

Cash Flow-Relevant Capital Expenditure for Property, Plant and Equipment and for Intangible Assets

€ million	2021	2022
Crop Science	1,019	1,486
Pharmaceuticals	1,178	1,045
Consumer Health	196	173
Reconciliation	218	245
Group[1]	**2,611**	**2,949**

[1] Group total including continuing and discontinued operations

Crop Science continuously invests in a variety of projects within its global production network for crop protection products and seeds as well as in research, development and digital transformation. The largest capital expenditure projects in 2022 included investments in the sourcing of an important raw material used in the production of glyphosate in the United States (€117 million). We also invested in the expansion of fungicide production in Germany (€19 million). Alongside these projects, the development of digital solutions for our customers was a key investment in 2022 and will remain so in the coming years.

At **Pharmaceuticals**, the largest expenditures for property, plant, and equipment in 2022 were for cell and gene therapy research and production facilities in the United States, Spain, Germany, the United Kingdom and Canada (€201 million); modernization programs for the production network of our product supply organization at the sites in Turku, Finland; Leverkusen, Germany; and Garbagnate, Italy (€116 million); the construction of a new production facility for solid launch products in Leverkusen, Germany (€78 million); and the development of a new production site for medicinal products in Costa Rica (€47 million).

At approximately €16 million, **Consumer Health**'s largest investment in 2022 was again the GMP[14] upgrade program across its global production sites.

[14] Good manufacturing practice

A 2.2.4/4

Material Capital Expenditures for Property, Plant and Equipment

		2021	2022
Crop Science	Expansion of fungicide production capacities in Dormagen, Germany	Ongoing	Ongoing
	Expansion of research and development facilities in Monheim, Germany	Ongoing	Ongoing
	Expansion of research and development facilities in Petrolina, Brazil	Ongoing	Ongoing
	IT solutions to support digital transformation	Ongoing	Ongoing
	Sourcing of a raw material used in the production of glyphosate in Soda Springs, United States	Ongoing	Ongoing
	Implementation of sustainability measures in Soda Springs, United States	Ongoing	Ongoing
	Expansion of corn seed production capacities in Pochuyki, Ukraine		Initiated
	Optimization of herbicide production at the site in Luling, United States	Initiated	Ongoing
	Relocation of a production site in Hangzhou, China		Initiated
Pharmaceuticals	Modernization of production facilities at sites across the production network (Leverkusen, Germany; Garbagnate, Italy; Turku, Finland)	Ongoing	Ongoing
	Construction of a new research building (preclinical pharmacology) in Wuppertal (Aprath), Germany	Ongoing	Ongoing
	Modernization of research facilities in Berlin, Germany	Ongoing	Ongoing
	Construction of modular production center for biologicals in Berkeley, United States	Ongoing	Completed
	Construction of a sterile filling plant for launch products in Berlin, Germany	Ongoing	Ongoing
	Expansion of active ingredient production for acarbose in Wuppertal, Germany	Ongoing	Completed
	Expansion of packaging capacities in Beijing, China	Ongoing	Ongoing
	Construction of a new production facility for solid launch products in Leverkusen, Germany	Ongoing	Ongoing
	Construction of research and production facilities for cell and gene therapies in various countries including the United States, Spain, Germany, Canada and the United Kingdom	Ongoing	Ongoing
	Construction of a new production site in Costa Rica	Ongoing	Ongoing
	Construction of a new multi-purpose facility for active ingredient production in Wuppertal, Germany	Initiated	Ongoing
	Integration of investigational drug production into the new production facility for launch products in Leverkusen, Germany	Initiated	Ongoing
	Modernization of production facilities in Berlin, Germany, with a focus on the radiology portfolio and other parenteral products	Initiated	Ongoing
Consumer Health	Upgrade of global production site facilities to new GMP standards	Ongoing	Ongoing

Liquid assets and net financial debt

A 2.2.4/5

Net Financial Debt[1]

€ million	Dec. 31, 2021	Dec. 31, 2022	Change (%)
Bonds and notes	37,593	36,602	−2.6
of which hybrid bonds[2]	4,537	4,528	−0.2
Liabilities to banks[3]	773	3,484	.
Lease liabilities	1,165	1,234	+5.9
Liabilities from derivatives[4]	69	190	+175.4
Other financial liabilities	1,272	142	−88.8
Receivables from derivatives[4]	(114)	(61)	−46.5
Financial debt	**40,758**	**41,591**	**+2.0**
Cash and cash equivalents	(4,564)	(5,171)	+13.3
Current financial assets[5]	(3,057)	(4,611)	+50.8
Net financial debt[1]	**33,137**	**31,809**	**−4.0**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Classified as debt according to IFRS
[3] Including both financial and nonfinancial liabilities
[4] Including the market values of interest-rate and currency hedges of recorded transactions
[5] Including short-term receivables with maturities between 3 and 12 months outstanding from banks and other companies as well as financial investments in debt and equity instruments that were recorded as current on first-time recognition

The Bayer Group's net financial debt declined by €1.3 billion to €31.8 billion in 2022. Cash inflows from operating activities and the sale of the Environmental Science Professional business were partially offset by cash outflows for dividends and negative currency effects.

Financial debt included five subordinated hybrid bonds with a total volume of €4.5 billion, 50% of which is treated as equity by three contracted rating agencies. As such, the hybrid bonds have a positive impact on the Group's rating-specific debt indicators.

In 2022, Bayer AG repurchased the €1.3 billion hybrid bond maturing in 2075 (callable on October 2, 2022) before the first call date. To finance the repurchase, new hybrid bonds with a total volume of €1.3 billion were placed in March 2022. The issuance comprised two tranches, each with a final maturity of 60 years. The first tranche in the amount of €500 million with a noncall period of 5.5 years pays a coupon of 4.5%. The second tranche in the amount of €800 million with a noncall period of 8.5 years pays a coupon of 5.375%.

In addition, two bonds with a total volume of US$250 million (€229 million) were redeemed before maturity, while two bonds with a total volume of €1,750 million and one with a nominal volume of JPY10 billion (€73 million) were redeemed at maturity in 2022.

In May 2022, Bayer AG agreed and drew on a credit line of €3 billion that is intended to help the company manage risks should the current geopolitical situation deteriorate.

Other financial liabilities decreased, primarily due to the repayment of commercial paper.

The increase in current financial assets mainly related to investments in money market funds.

Asset and Capital Structure of the Bayer Group

A 2.2.4/6

Bayer Group Summary Statements of Financial Position

€ million	Dec. 31, 2021	Dec. 31, 2022	Change (%)
Noncurrent assets	**87,663**	**87,117**	**–0.6**
Assets held for sale	76	3	–96.1
Other current assets	32,502	37,757	+16.2
Current assets	**32,578**	**37,760**	**+15.9**
Total assets	**120,241**	**124,877**	**+3.9**
Equity	**33,168**	**38,926**	**+17.4**
Noncurrent liabilities	57,670	50,867	–11.8
Current liabilities	29,403	35,084	+19.3
Liabilities	**87,073**	**85,951**	**–1.3**
Total equity and liabilities	**120,241**	**124,877**	**+3.9**

Between December 31, 2021, and December 31, 2022, total assets increased by €4.6 billion to €124.9 billion.

// Noncurrent assets fell by €0.5 billion to €87.1 billion in 2022. The decline mainly resulted from the impairment losses and impairment loss reversals recorded during the year (net effect of –€2.6 billion) and the retirement of assets in connection with the sale of the Environmental Science Professional business (–€1.5 billion). By contrast, foreign currency effects had an opposing effect across all items (+€3.6 billion).

// Total current assets rose by €5.2 billion to €37.8 billion. This was mainly driven by the build-up of inventories (+€2.3 billion) due to the general increase in prices and higher volumes. Of the around €2.3 billion that Cinven paid to acquire the Environmental Science Professional business on October 4, 2022, an amount of €2.1 billion was invested in money market funds.
// Equity rose by €5.8 billion during the year to €38.9 billion. This was primarily attributable to the positive income after income taxes (+€4.2 billion), changes – recognized outside profit or loss – arising from the remeasurement of the net defined benefit liability (+€1.7 billion), and currency translation of equity items (+€1.8 billion). By contrast, the dividend payment had a negative effect (–€2.0 billion). The equity ratio rose to 31.2% (2021: 27.6%).
// Liabilities declined by €1.1 billion to €86.0 billion. The primary factors that decreased liabilities included the reduction in provisions for pensions due to an increase in the discount rate and the development of plan assets (–€2.8 billion), as well as the repayment of bonds (–€2.1 billion) and commercial paper (–€1.1 billion). Opposing effects resulted from the drawing of an additional credit facility (+€3.0 billion), the build-up of trade accounts payable (+€0.8 billion) and an increase in refund liabilities (+€0.7 billion).
// Supply chain financing programs (also known as reverse factoring) are used in the Bayer Group that enable suppliers to choose to have individual invoices paid prior to their due date. As part of such programs, the supplier concludes a financing agreement with a bank or platform operator without Bayer's involvement and, upon request, is paid the invoice amount by the bank in advance less an interest component. Bayer generally pays the invoice amount to the bank when due; the payment deadlines lie within the scope normal for the industry. Bayer has assessed these programs based on various criteria and concluded that the associated liabilities retain the character of trade accounts payable. The related payments to the bank are therefore classified as a cash outflow from operating activities.

2.3 Alternative Performance Measures Used by the Bayer Group

The Combined Management Report and the Consolidated Financial Statements of the Bayer Group are prepared according to the applicable financial reporting standards. In addition to the disclosures and metrics these require, Bayer publishes alternative performance measures (APMs) that are not defined or specified in these standards and for which there are no generally accepted reporting formats. Bayer calculates APMs to enable a comparison of performance indicators over time and against those of other companies in its industry sectors. These APMs are calculated by making certain adjustments to items in the statement of financial position or the income statement prepared according to the applicable financial reporting standards. Such adjustments may result from differences in calculation or measurement methods, nonuniform business activities or special factors affecting the information value of these items. The APMs determined in this way apply to all periods and are used both internally for business management purposes and externally by analysts, investors and rating agencies to assess the company's performance. Bayer determines the following APMs:

// Change in sales (reported, currency-adjusted, currency- and portfolio-adjusted)
// EBITDA
// EBITDA before special items
// EBITDA margin before special items
// EBIT
// EBIT before special items
// Core earnings per share
// Net financial debt
// Return on capital employed (ROCE)
// Net operating profit after tax (NOPAT)
// Capital employed

// Weighted average cost of capital (WACC)
// Free cash flow
// Forecast key financial data

The **(reported) change in sales** is a relative indicator. It shows the percentage by which sales varied from the previous year.

The **currency-adjusted or currency- and portfolio-adjusted change in sales** shows the percentage change in sales excluding the impact of exchange rate effects and, in the latter case, disregarding material acquisitions and divestments as well. Exchange rate effects are generally calculated on the basis of the functional currency valid in the respective country. An exception existed in Argentina, primarily in our crop protection business, where the currency effect was calculated on the basis of the US dollar instead of the functional currency.

EBITDA (earnings before interest, taxes, depreciation and amortization) encompasses earnings before the financial result, taxes, depreciation and impairment losses / loss reversals on property, plant and equipment, impairment losses on goodwill, and amortization and impairment losses/ loss reversals on other intangible assets. This performance indicator neutralizes the effects of the financial result along with distortions of operational performance that result from divergent depreciation and amortization methods and the exercise of measurement discretion. EBITDA is EBIT plus the amortization of intangible assets and the depreciation of property, plant and equipment, plus impairment losses and minus impairment loss reversals, recognized in profit or loss during the reporting period.

EBIT (earnings before interest and taxes) serves to present a company's performance while eliminating the effects of differences between local taxation systems and different financing activities.

EBITDA before special items and **EBIT before special items** show the development of the operational business irrespective of the effects of special items, i.e., special effects for the Bayer Group with regard to their nature and magnitude. These may include acquisition costs, divestments, litigations, restructuring, integration costs, impairment losses and impairment loss reversals. In the calculation of EBIT before special items and EBITDA before special items, special charges are added and special gains subtracted.

The **EBITDA margin before special items** is a relative indicator used by Bayer for internal and external comparisons of operational earnings performance. It is the ratio of EBITDA before special items to net sales.

The APM **core earnings per share (core EPS)** from continuing operations is based on the concept of earnings per share (EPS) as defined in IAS 33. Core EPS forms the basis of the Bayer Group's dividend policy.

Core EPS is calculated using the following method: Based on EBIT (as per the income statements), the special items, impairment losses on goodwill, amortization / impairment losses/ loss reversals on other intangible assets, impairment losses / loss reversals on property, plant and equipment and the accelerated depreciation included in special items are neutralized to determine **core EBIT**. This enables a comparison of performance over time. Core EBIT is reconciled to **core net income from continuing operations**. This is calculated by adding the core financial result to core EBIT. Special items in the financial result include nonrecurring financial expenses or income that are not part of our normal financing activities. These primarily pertain to changes in the fair value of equity instruments that are not held for medium- or long-term strategic purposes, as well as to nonrecurring financial expenses or income arising from acquisitions, divestments and litigations. Income taxes – net of special items – are then deducted from this figure to give core net income. Special items relating to income taxes include material effects from tax reforms, among other things.

Core EPS is then calculated by dividing core net income by the weighted average number of shares.

As core EPS is calculated for each interim reporting period, core EPS for the fiscal year or for each interim reporting period up to the respective closing date may deviate from the cumulated core EPS for the individual interim reporting periods.

Net financial debt is an important financial management indicator for the Bayer Group and is used both internally and externally in assessing its liquidity, capital structure and financial flexibility.

The **return on capital employed (ROCE)** measures the capital return over a specified period and is employed as a strategic indicator to evaluate value creation. It is the ratio of **net operating profit after taxes (NOPAT)** to the average **capital employed** in a fiscal year. NOPAT is calculated by subtracting income taxes from EBIT. Income taxes are calculated by multiplying EBIT by a uniform tax rate that is based on a historical average of tax rates.

The **capital employed** by Bayer is the total carrying amount of operational noncurrent and current assets, minus liabilities that are largely non-interest-bearing in character and / or would distort the capital base. An average value, calculated from the values at the end of the prior year and of the reporting year, is used to depict the change in capital employed during the reporting year.

The ROCE is compared to the **weighted average cost of capital (WACC),** which is the return expected by the providers of equity and debt. If the ROCE exceeds the WACC, return expectations have been exceeded, indicating that value has been created.

The WACC is based on an after-tax approach and calculated at the start of the year as the weighted average of the equity and debt cost factors. The cost of equity is determined using the capital asset pricing model (CAPM), while the debt-capital cost factor is calculated based on the average returns of ten-year Eurobonds issued by industrial companies. Further information on the segment-specific capital cost factors used in impairment testing is provided in Note [4] to B Consolidated Financial Statements.

Free cash flow (FCF) is an alternative performance measure that is based on the cash flow from operating activities under IAS 7. FCF illustrates the cash flows available for paying dividends and reducing debt as well as for investing in innovation and acquisitions. It is calculated by subtracting cash outflows for additions to property, plant and equipment and intangible assets from the cash flow from operating activities from continuing and discontinued operations, adding interest and dividends received along with interest received from interest-rate swaps, and deducting interest paid including interest-rate swaps.

The forward-looking key performance indicators published in the **forecast for key financial data** are based on data that is determined in the course of our planning process. The key financial data in the forecast is determined in accordance with the applied accounting policies and with the calculation models for alternative performance measures described in this chapter.

3. Report on Future Perspectives and on Opportunities and Risks

3.1 Future Perspectives

3.1.1 Economic Outlook

A 3.1.1/1

Economic Outlook

	Growth[1] 2022	Growth forecast[1] 2023
World	+3.0%	+1.9%
European Union	+3.5%	+0.2%
of which Germany	+1.9%	+0.3%
United States	+2.0%	+0.5%
Emerging Markets[2]	+3.5%	+3.5%

[1] Real GDP growth, source: IHS Markit
[2] Including about 50 countries defined by IHS Markit as Emerging Markets in line with the World Bank
As of January 2023

World economic growth dampened by inflation

We expect global economic growth to decline in 2023. Persisting high inflation is likely to further weaken consumption. Central banks are also expected to increase base rates further in a bid to counter inflation, continuing the policy they adopted last year. That in turn will likely discourage investment activity. A minor recession is anticipated in the first half of the year, particularly in the United States and Europe. The risk of Europe facing a deeper recession amid a worsening energy crisis due to the war in Ukraine has recently abated. Growth in the Emerging Markets will likely remain at the prior-year level, while the Chinese economy is expected to pick up again after the country eased its strict COVID-19 measures at the end of 2022.

A 3.1.1/2

Economic Outlook for the Divisions

	Growth 2022	Growth forecast 2023
Seeds and crop protection market[1]	+12%	+3%
Pharmaceuticals market[2]	+7%	+6%
Consumer health market[3]	+8%	+4%

2022 data provisional
[1] Bayer's estimate (as of January 2023), plus various local sources; currency-adjusted
[2] Source: IQVIA Market Prognosis (as of September 2022); all rights reserved; currency-adjusted
[3] Bayer's estimate (as of November 2022), taking into account external sources; currency-adjusted

We foresee continued growth for the global **seed and crop protection market** in 2023 (+3%), albeit at a slower pace than in the previous year (2022: +12%). We expect a major growth contribution from prices as seed prices will continue to reflect the elevated crop commodity environment. Agrochemical prices are expected to rise, reflecting continued inflationary cost pressures. With respect to nonselective herbicides, however, glyphosate prices are projected to normalize. In addition, the ongoing war in Ukraine will result in sustained high energy costs and supply chain constraints. Regional growth in seeds and traits is expected in North America, Europe/Middle East/Africa and Latin America. The major growth drivers in Crop Protection will

likely come from Europe/Middle East/Africa and Asia/Pacific, especially at Fungicides and Insecticides.

We expect the **pharmaceuticals market** to expand by 6% in 2023 (2022: +7%). Innovative products will continue to drive growth and more than offset losses due to the expiration of patents. However, uncertainty remains over how heavily the pharmaceutical market will be impacted by external factors such as the war in Ukraine, the COVID-19 pandemic, inflationary pressure and health system reforms.

At around 4%, we anticipate that growth of the **consumer health market** in 2023 will be well below the 2022 level (+8%), as economic conditions put pressure on overall market growth, but we expect to see an increase in growth in the Upper Respiratory segment as new COVID-19 variants continue to emerge.

3.1.2 Corporate Outlook

The following forecast is based on the current business development and our internal planning. To enhance the comparability of operational performance, we are presenting this guidance on a currency-adjusted basis, applying the average monthly exchange rates from 2022.

For fiscal 2023, we expect to generate currency-adjusted sales of €51 billion to €52 billion, which corresponds to an increase of 2% to 3% on a currency- and portfolio-adjusted basis. We anticipate EBITDA before special items of €12.5 billion to €13.0 billion on a currency-adjusted basis. We expect to post core earnings per share of €7.20 to €7.40 on a currency-adjusted basis.

Compared with the currency-adjusted forecast above, our guidance based on the closing rates as of December 31, 2022, only projects a significant impact from currency effects with respect to sales. Based on these exchange rates, we expect to generate sales of €50 billion to €51 billion in 2023, which corresponds to an increase of 2% to 3% on a currency- and portfolio-adjusted basis. Overall, it should be noted that a 1% appreciation (depreciation) of the euro against all other currencies would decrease (increase) sales by some €425 million on an annual basis.

A 3.1.2/1

Forecast for 2023

	2022 figures		2023 currency-adjusted forecast		2023 forecast at closing rates on Dec. 31, 2022	
	€ billion	**Fx & p adj. change (%)**	**€ billion**	**Fx & p adj. change (%)**	**€ billion**	**Fx & p adj. change (%)**
Sales	**50.7**	**+8.7**	**51 to 52**	**+2 to 3**	**50 to 51**	**+2 to 3**
Crop Science	25.2	+15.6	–	~ +3		~ +3
Pharmaceuticals	19.3	+1.1	–	~ +1		~ +1
Consumer Health	6.1	+8.4	–	~ +5		~ +5
		Margin (%)		**Margin (%)**		**Margin (%)**
EBITDA before special items[1]	**13.5**	**26.6**	**12.5 to 13.0**		**12.5 to 13.0**	
Crop Science	6.9	27.3	–	25 to 26		25 to 26
Pharmaceuticals	5.9	30.5	–	slightly above 29		~ 30
Consumer Health	1.4	22.5	–	~ 23		~ 23
Financial result (core)[2]	**–1.9**		**~ –1.9**		**~ –1.9**	
Tax rate (core)[3]	**21.7%**		**~ 23%**		**~ 23%**	
Free cash flow[1]	**3.1**		**~ 3.0**		**~ 3.0**	
Net financial debt[1]	**31.8**		**32 to 33**		**32 to 33**	
Special items in EBIT	–2.2		~ –1.0		~ –1.0	
	€		€		€	
Core EPS[1]	**7.94**		**7.20 to 7.40**		**7.20 to 7.40**	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Financial result before special items

[3] (Income taxes + special items in income taxes + tax effects on adjustments) / (core EBIT + financial result + special items in financial result)

We plan to take total special charges of about €1.0 billion (currency-adjusted) in EBITDA in 2023 in connection with restructuring measures.

Potential estimation risks regarding special charges in connection with litigations are referenced in A 3.2 Opportunity and Risk Report.

3.2 Opportunity and Risk Report

3.2.1 Group-wide Opportunity and Risk Management System

As a global life science enterprise, we are exposed to a wide range of internal and external developments and events that could significantly impact the achievement of our financial and nonfinancial objectives. Opportunity and risk management is therefore an integral part of corporate management at Bayer. We regard opportunities as positive deviations, and risks as negative deviations, from projected or target values for potential future developments. We augment our risk definition process by also taking into account any potential adverse effects that our business operations could have on matters relating to, for example, environmental and social matters.

Opportunity management system

We identify opportunities as part of the annual strategic planning cycle, during which we analyze internal and external factors that may affect our business. These may be factors of a social, economic or environmental nature, for example. The core phase of our strategic planning process takes place in the first half of the year and starts with a comprehensive analysis of the markets.

We build on this by analyzing the respective market environments to identify opportunities. These analyses are based on different time periods since trends or developments may impact our business over the short, medium or long term. In addition, we identify and leverage opportunities as part of our regular business operations and through our daily observation of internal processes and markets. Depending on developments, factors affecting our business, such as market risks, may result in either risks or opportunities.

Risk management system

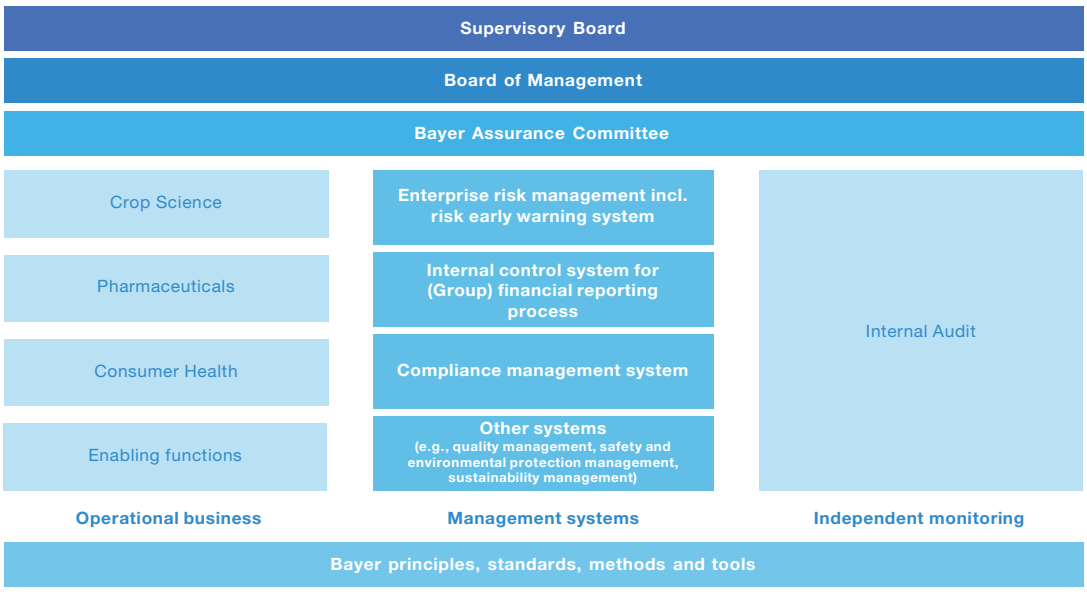
We have implemented a holistic and integrated risk management system designed to ensure the continued existence and future target attainment of the Group through the early identification, assessment and treatment of risks.

Our risk management system is aligned to internationally recognized standards and principles such as the ISO 31000 risk management standard of the International Organization for Standardization, and is defined and implemented with the help of binding corporate policies.

Structure of Bayer's risk management system

A 3.2.1/1

Structure of the Risk Management System



The **Board of Management** of Bayer AG holds overall responsibility for an effective risk management system. The Audit Committee of the Supervisory Board examines the appropriateness and effectiveness of the risk management system at least once a year and provides a corresponding report to the full Supervisory Board.

The **Bayer Assurance Committee** is a committee of the Board of Management. It is chaired by the Chief Financial Officer, with a second Board of Management member participating on a rotating basis. Besides ensuring that appropriate action is taken to control any substantial risks, the Bayer Assurance Committee regularly discusses and reviews the risk portfolio and the status of the risk control measures.

Responsibility for the identification, assessment, treatment and reporting of risks lies with the **operational business units** in the divisions and enabling functions.

Enterprise risk management (ERM), including risk early warning system

Our enterprise risk management (ERM) system meets the requirement set out in Section 91, Paragraph 2 of the German Stock Corporation Act that a risk early warning system be

implemented and used to identify, at an early stage, developments that are material and/or could endanger the company's continued existence. It establishes a consistent framework and uniform standards for the risk early warning system throughout the Bayer Group.

The Enterprise Risk Management department steers and coordinates said risk management system. It provides overarching standards, methods and tools, is responsible for the risk early warning system, steers the annual enterprise risk management process and works on ensuring continuous monitoring and improvement. For further details, see 3.2.1 "Basic elements of the Bayer risk management system," and specifically "ERM: risk management process" and "ERM: monitoring and improvement." ERM also ensures reporting to the Bayer Assurance Committee, the Board of Management, the Supervisory Board and the Audit Committee of the Supervisory Board.

Internal control system for (Group) accounting and financial reporting

(Report pursuant to Section 289, Paragraph 4 and Section 315, Paragraph 4 of the German Commercial Code)

As part of the comprehensive risk management system, we have an internal control system over financial reporting (ICSOFR) in place for the (Group) accounting and financial reporting process. This system comprises suitable structures and workflows that are defined and implemented throughout the organization. The purpose of our ICSOFR is to ensure proper and effective accounting and (Group) financial reporting in accordance with the relevant reporting principles. The ICSOFR is designed to guarantee timely, uniform and accurate accounting for all business transactions based on applicable statutory regulations, accounting and financial reporting standards and the internal Group policies that are binding on all consolidated companies. Risks are identified and assessed, and appropriate countermeasures are taken to mitigate them. Mandatory Group-wide standards such as system-based and manual reconciliation processes and functional separation have been derived from these frameworks and promulgated throughout the Bayer Group. These standards are implemented by the Bayer Group companies. Compliance with these standards is the responsibility of the respective management teams. The Board of Management of Bayer AG has confirmed the effective functioning of the ICSOFR and the relevant criteria for the 2022 fiscal year. However, it should be noted that an internal control system, irrespective of its design, cannot provide absolute assurance that material misstatements in the financial reporting will be avoided or identified.

Compliance management system

Our compliance management system is aligned to the company's risk status and aims to ensure lawful and responsible conduct by our employees. It is designed to identify potential violations in advance and systematically prevent their occurrence. The compliance management system thus contributes significantly to the integration of compliance into our operating units and their processes. Detailed information on compliance management can be found in Chapter A 4.2 "Compliance," which describes in particular the process of identifying risks and taking measures to mitigate them.

Independent internal and external monitoring

The Internal Audit department conducts independent, risk-based and objective audit activities, employing a targeted and systematic approach in order to assess and help improve the effectiveness of corporate governance, risk management and monitoring processes. The tasks, powers and responsibilities of Internal Audit, as well as its position within the Bayer Group, are defined and established in the rules of procedure. The department's management adheres to the mandatory elements of the International Standards for the Professional Practice of Internal Auditing of the Institute of Internal Auditors (IIA). The Chief Audit Executive (CAE) regularly reports to the Board of Management and the Audit Committee on Internal Audit's compliance with the code of ethics and the standards. The CAE also regularly reports to the Board of Management and Audit Committee on the results of the audit assignments, as well as, for example, on Internal Audit's quality assurance and improvement program. This includes aspects such as relevant

results of internal and external assessments carried out at least once every five years by a qualified independent assessor. The most recent assessment was concluded in the fourth quarter of 2022, yielding the best results possible. In addition, the fundamental suitability of the early warning system is assessed by the external auditor as an independent external body as part of its audit of the annual financial statements.

Basic elements of the Bayer risk management system

Risk culture and objectives of the risk management system

All levels of the company are included in risk management in order to heighten the awareness and understanding of risks. This lays the foundation for a risk culture with independent, proactive and systematic risk management involving clearly defined roles and responsibilities, principles, standards, methods, tools and training measures. The aims of the risk management system are to achieve risk transparency, which also encompasses the early detection of risks, to support risk-based (treatment) decisions and to ensure compliance with legal requirements.

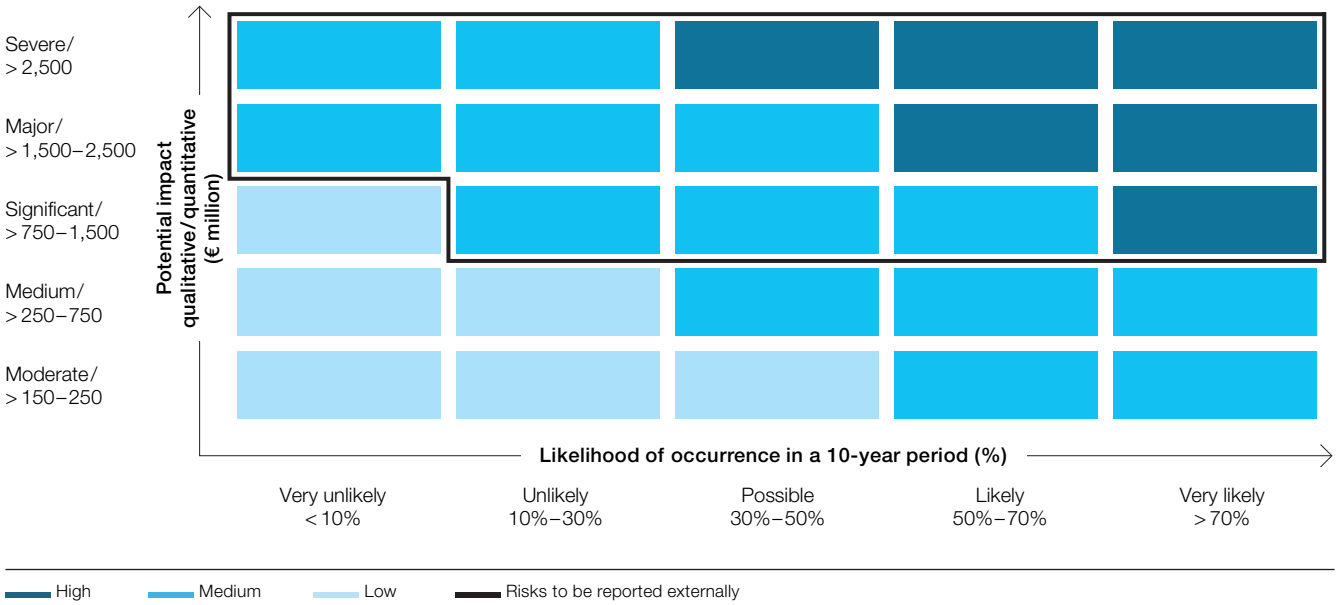
ERM: risk management process

Identification: Risks are identified by risk owners in the divisions and enabling functions. To help ensure we identify risks as comprehensively as possible, we maintain a risk universe that reflects the company's potential risk categories. The Bayer Risk Universe, which is regularly updated, also expressly accounts for risks of a nonfinancial nature that are linked to our business activity or to our business relationships, products and services. Risks pursuant to the Corporate Social Responsibility (CSR) Directive Implementation Act that relate to environmental, employee and social issues, human rights, corruption and bribery (compliance) are included as well. Further information on the nonfinancial statement can be found in the "About this Report" section.

Assessment: Where possible, the identified risks are evaluated with regard to their potential impact and likelihood of occurrence using the following matrix. Risks are assessed on a net basis, taking into account the risk control measures in place to mitigate the potential impact and/or likelihood of occurrence.

A 3.2.1/2

Risk Assessment Matrix



Risks are classified as high, medium or low when assessing their materiality within the overall risk portfolio. The extent of the impact is rated in quantitative and/or qualitative terms. The quantitative assessment reflects a potentially negative effect on cash flows. A qualitative assessment of the impact is based on criteria such as the effect on our strategy or reputation, the potential loss of stakeholder confidence, and potential incomplete compliance with sustainability principles (e.g., in the area of safety, environmental protection or human rights). The higher rating – qualitatively or quantitatively – determines the overall assessment. The likelihood of occurrence is calculated based on a maximum period of 10 years. A further aspect we consider is the speed at which the impact will occur if a risk materializes.

We aggregate risks to ensure the early detection of risks that could combine or correlate to potentially endanger our company's continued existence. Using methods such as Monte Carlo simulations, we estimate the potential aggregated impact that our main risks could have on our cash flow. We compare the resulting aggregated risk situation with the risk-bearing capacity approved by the Board of Management. The outcome of this comparison is factored into the Board of Management's overall assessment of the company's risk status.

Treatment: The risk owners decide on a targeted risk level based on a cost-benefit analysis and define a risk management strategy as well as risk management measures. These include risk avoidance, risk reduction, risk transfer and risk acceptance.

Reporting: The results are reported to the Bayer Assurance Committee by the Enterprise Risk Management department within the Internal Audit & Risk Management enabling function. In addition, new risks above a defined threshold are reported to Enterprise Risk Management on an ad-hoc basis and, if relevant, to the Bayer Assurance Committee. A report on the risk portfolio is submitted to the Board of Management and the Audit Committee of the Supervisory Board at least once a year.

ERM: monitoring and improvement

The Enterprise Risk Management department within the Internal Audit & Risk Management enabling function continuously evaluates whether the principles, standards, methods and tools are appropriate and up to date.

Assessment of the risk management and internal control systems pursuant to Section 91, Paragraph 3 of the German Stock Corporation Act

The overarching requirements for all management systems in place at Bayer are defined by the integrated management system (IMS). Controls and monitoring are generally performed as part of the respective management systems, focusing on the risks that need to be mitigated.

The Board of Management has defined and implemented a procedure to ensure compliance with requirements pursuant to Section 91, Paragraph 3 of the German Stock Corporation Act with regard to the risk management system and the internal control system. This procedure is regularly reviewed and further developed as required.

Accordingly, the Board of Management is focused particularly on the four management systems of enterprise risk management, internal control system for (Group) accounting and financial reporting processes, compliance, and internal audit. These four management systems form the core of our risk management and internal control systems.

For further information on the core management systems, see Chapter 3.2.1 and particularly "Enterprise risk management (ERM) including risk early warning system," "ERM: risk management process" and "ERM: monitoring and improvement," "Internal control system for (Group) accounting and financial reporting processes," "Compliance management system," as well as Chapter 4.2 "Compliance" and Chapter 3.2.1, particularly "Independent internal and external monitoring."

These core management systems are regularly monitored and reviewed by means of audits within the respective management system and audits by Internal Audit and/or external auditors. The results of these reviews are regularly reported to the Board of Management.

The review by the Board of Management did not identify any relevant indications that, in their entirety, would call into question the appropriateness and effectiveness of these systems for 2022.

However, it is important to bear in mind that, irrespective of their design or evaluation, risk management and internal control systems cannot ensure with absolute certainty that all risks are identified before they materialize and that the envisaged controls uncover all weaknesses.

3.2.2 Opportunity and Risk Status

In this section, we report on material, reportable risks pursuant to German Accounting Standard No. 20. These include all financial and nonfinancial risks that have been classified as high or medium and are at least significant in terms of potential impact after taking into account the risk control measures in place (net risk). They encompass risks falling within the black outline in the rating matrix A 3.2.1/2. In addition, we report relevant risks that (from a financial point of view) may not be sufficiently or meaningfully quantifiable, if at all. We also report on the principal opportunities identified in the course of our opportunity management. Furthermore, we assess the probability that the effects of individual risks could change significantly during the forecast period. Our most recent evaluation did not find this to be case, with the following exception: Legal proceedings generally involve estimation risks, which may be substantial in some cases. Against the background of the proceedings in the glyphosate matter and PCB matters, in particular, outcomes of mediation and/or the ongoing litigations may lead to adjustments of the provisions established in connection with these series of litigations. Such adjustments may materially impact the forecast issued with respect to the financial position and cash flows. See also Note [30] in B Consolidated Financial Statements.

Comparable risks existing in different divisions of the company are grouped together where applicable.

According to our understanding, risks relating to the aspects outlined in the CSR Directive Implementation Act that would have to be reported separately would have to have at least a “severe” potential impact under the qualitative criterion “potential incomplete compliance with sustainability principles,” and additionally their likelihood of occurrence would have to be classified as “very likely.” We did not identify any such risks in 2022.

The section below details the individual risk categories that fall within the “Risks to be reported externally” area outlined in the risk matrix, as well as how they have been classified[15] and the divisions concerned. The order in which the risks are listed does not imply any order of importance. We also describe opportunities and risks of a division-specific nature where relevant. The divisions mentioned are those that have identified material risks. Other divisions may also be affected to a lesser extent. Material risks reported by enabling functions are categorized under “Group,” although they may also affect the divisions.

[15] The classification pertains to the risks.

Social and macroeconomic trends (High: Group; Medium: Crop Science, Pharmaceuticals)

The geopolitical risks we currently see relate primarily to Russia's war in Ukraine. Our business may be negatively impacted not only directly by the war but also as a result of related sanctions. The war-related energy crisis in particular, together with all its implications, presents us with challenges that may adversely affect our sales, earnings and cash flows. We see risks both directly for our production and customers, as well as indirectly through the impact on our suppliers and supply chains. See also the "Supply of products" section. Generally, the implications of the war are unpredictable and have the potential to continue to significantly impact financial markets and economies, leading, for example, to high volatility of foreign exchange rates, inflation and an economic slowdown or even recession. Shifts in these underlying conditions may negatively impact our margins. Furthermore, our market environment and, consequently, our business performance may be adversely impacted. The environment in which we operate is becoming increasingly harsh overall, which may continue to lead to increased attacks on critical infrastructure. We are preparing for these challenges with global and local operational crisis management, energy-related task forces and other interdisciplinary teams. Examples of mitigation measures include diversifying energy sources and building up additional liquidity buffers.

Besides the war, we see a heightened risk of geopolitical shifts that may impact our business. We are observing growing international rivalries that could lead to decoupling in various areas (e.g. capital markets, technological standards). Many states are becoming increasingly focused on securing access to critical commodities and strategically important technologies. This could lead to a greater number of restrictive commercial measures being introduced in critical areas, which may impact us directly or indirectly.

The growing world population, coupled with rising food demand, gives rise to opportunities for our Crop Science Division. In addition, changing consumption patterns and increasing public awareness of the importance of healthy eating and sustainability, paired with new digital technologies, are giving rise to new pools of value in the agriculture market. Therefore, while high-quality seeds and crop protection will remain at our core, we will see opportunities arise to capture additional value by tapping new customer segments, sales platforms and digital capabilities.

Furthermore, the increase in quality of life and life expectancy is leading to a heightened focus on the medical care needs of elderly patients. To take advantage of the opportunities arising from the growing demand for innovative healthcare products to treat age-related diseases, our Pharmaceuticals Division is concentrating its research and development activities on relevant therapeutic areas, among other measures.

Moreover, a negative public perception of Bayer represents a risk. For example, modern agricultural methods, such as the application of certain classes of crop protection products and the use of biotechnology, are often the subject of intense public debate, which may adversely affect our reputation. The risk of an increasingly negative public debate that is not primarily based on science may, for example, lead to legislative and regulatory decisions that are unfavorable to our company, significantly limiting the use of our products or even resulting in voluntary or mandated product withdrawals. We are engaged in constant dialogue with interest groups and regulators to promote scientifically founded, rational and responsible discussions and decision-making processes.

Furthermore, negative developments of a macroeconomic nature, such as crises in important sales markets for our company, could weigh on our business and reduce our earnings. Our seed and crop protection business in particular is cyclical and shaped by economic developments and factors, including fluctuating weather conditions and pest pressure that may adversely impact our Crop Science business. Forecasts concerning climate change indicate that these risks may possibly increase in the long term. We address these influences through our globally diversified business, flexible supply chain, comprehensive monitoring and assessment of market

developments, and our ability to adjust production volumes to the level of demand forecast in sales and distribution planning.

Market developments (Medium: Crop Science)

In the Crop Science Division, we could face increased competition in the seed and crop protection industry. New competitors entering the market and aggressive marketing and pricing strategies – not only for generic products – could negatively impact our profitability. In addition, increasing digitalization in the agriculture sector could lead to the rise of new players and alter the market. To take account of these developments, we are realigning our business models, engaging in scientific and commercial partnerships, and utilizing our own R&D capabilities.

New developments such as cell and gene therapies and digitalization are enabling patient needs to be addressed in a more targeted and sustainable way. This provides an opportunity for our Pharmaceuticals Division. Cell and gene therapies can be used to treat or potentially even completely cure numerous as yet untreatable diseases. At the same time, digitalization is leading to improved diagnostic methods, enabling diseases to be diagnosed and treated in a more targeted way.

Regulatory changes (High: Group; Medium: Crop Science, Pharmaceuticals)

Our business activity is subject to extensive regulations that are changing – and may become more stringent, including for reasons of a political nature. For example, further restrictions could be imposed on the sale and use of various crop protection products. In addition, approvals that have already been granted are being challenged and will probably continue to be challenged in court, especially by NGOs, potentially resulting in temporary or permanent revocation of product registrations or approvals and financial loss from reduced sales of crop protection products as well as associated seed offerings. The issue of conserving biodiversity plays a role in this connection, as does the manufacture and use of certain chemical substances. In addition, the pricing of pharmaceutical products could become more strictly regulated – not only for products already exposed to generic competition, but also for innovative, patent-protected products. Residues of agrochemical products, pharmaceutical compounds or microplastics in the environment could also become subject to more stringent regulation. In addition, regulatory changes could affect agricultural imports from other parts of the world and therefore our business in those regions. Regulatory changes could also cause uncertainty over our products' patent protection, potentially resulting in financial losses that may even include the repayment of license fees. Regulatory changes may also lead to higher product development costs and longer development times, or even necessitate adjustments to our product portfolio, which in turn may negatively impact our reputation.

We counter such risks by monitoring changes in regulatory requirements in order to adequately address them within the company. We pursue a global strategy that bundles our strong product portfolio and sustainability commitments, and leverages our global business presence. We also deploy in-house research and development capacities, make acquisitions and enter into collaborations, while aligning our product portfolio to reflect anticipated changes. We also address these risks by engaging in dialogue with the authorities with the goal of promoting science-based decision-making, and by appropriately participating to defend against challenges to product approvals.

Business strategy (Medium: Pharmaceuticals, Group)

Our business strategy is geared toward innovation, which is inherently associated with risks. In our Pharmaceuticals Division, we see challenges in setting up new therapy platforms, such as for cell and gene therapy, and in further developing established therapeutic areas through innovative solutions. Throughout our company, we need to ensure that the digital transformation we are targeting is accompanied by the corresponding IT support. In addition, we might encounter challenges in our endeavors to implement our voluntary sustainability commitments in a timely manner, which may also be due to external factors.

We counter these risks by aligning our organization and our processes to existing challenges. In the Crop Science Division, for example, our digital farming activities are supplemented by strategic partnerships with leading IT companies where necessary. In the Pharmaceuticals Division, meanwhile, we have established a cell and gene therapy unit, for example.

Research and development (High: Pharmaceuticals)

Across our businesses, we see opportunities both in the continued development of our brands and in the expansion of our research pipeline as a result of our innovation capabilities. In the Pharmaceuticals Division, opportunities result from digitalization and associated new research and development methods that save time and increase development effectiveness. In addition, new, unique screening technologies facilitate the identification of new lead structures to unlock previously undruggable targets, with the potential to develop new and innovative products. We also rely on networking, both within the company and with external partners, to boost our innovation capabilities. This stimulates the development of new products.

Technological advances in pharmaceutical product development may at the same time also represent a risk for our company should we not be in a position to play a role in shaping such advances. Securing access to new technologies and identifying a sufficient number of research candidates while also ensuring their appropriate development represents a challenge. Targeting in-licensing and acquisitions as additional ways to strengthen our company involves the risk that we may be unable to identify a sufficient number of suitable candidates on financially acceptable terms. Furthermore, we cannot ensure that all the products we are currently developing or will develop in the future will obtain their planned approval/registration or achieve commercial success. These goals may not be reached if, for example, we are unable to satisfy technical or capacity requirements or meet time constraints in product development, fail to achieve study objectives or do not allocate financial resources optimally. Delays or cost overruns may occur during product registration or launch. We counter this risk through holistic portfolio management, by estimating the probability of success and prioritizing development projects.

Thanks to our innovation capacities and budgets within the Crop Science Division, we anticipate that we will be able to effectively tackle the challenges faced in developing and introducing product solutions in agriculture, including longer and more costly development cycles or stricter regulatory requirements. We plan to further leverage the strengths of our R&D platform to deliver pioneering technologies faster. In addition, we will leverage our existing expertise and strategically invest in new capabilities to unlock and capture new market segments.

Supply of products (procurement, production, logistics) (High: Group; Medium: Crop Science, Pharmaceuticals)

Despite all precautions, operations at our sites may be disrupted by fires, power outages, process changeovers – including those due to restrictions on the use of certain chemical substances – or plant breakdowns, for example. In addition, some of our production facilities are located in areas that may be affected by natural disasters such as flooding or earthquakes. These risks can lead to production disruptions or stoppages, result in personal injury and damage to our reputation, lead to declines in sales and/or margins, and necessitate the reconstruction of damaged infrastructure. If we are unable to meet product demand, sales may undergo a structural decline because patients then receive alternative treatments and may not switch back to our products. We address this risk for certain products by building up safety stocks and by spreading production across multiple sites, for example. Furthermore, an emergency response system based on a corresponding corporate policy has been implemented at all our production sites.

Disruptions in our upstream supply chain may also negatively impact our own supply capability. The substances we procure, and the companies that manufacture them, must meet all necessary regulatory requirements. These substances must also be suitable for fulfilling regulatory requirements further down the value chain. Certain materials, particularly in our Pharmaceuticals Division, are offered by only a small number of suppliers. We counter these risks by establishing relationships with alternative suppliers, concluding long-term agreements, expanding inventories or producing raw materials ourselves. Supplier risks are regularly reviewed and evaluated.

The assessment of this risk category has risen compared with the previous year. Geopolitical risks, which at the present time mainly concern the war in Ukraine and the international disruption it is causing, are compounding risks relating to, for example, the availability of necessary production materials and supply-chain stability. See also the “Social and macroeconomic trends” section.

Marketing, sales and distribution (Medium: Pharmaceuticals)

New product launches present particular challenges for our marketing and distribution organization, since assumptions about aspects such as the market and market circumstances may not materialize as anticipated. As a result, product launch concepts – including those related to clinical trials – and the planning or implementation of the distribution strategy could turn out to be inefficient or inadequate in terms of scheduling. In addition, if competitors’ marketing activities – including price competition from generics – or advertised product characteristics surpass our own efforts in this regard, this may represent a risk for sales of our products. We address these risks by conducting a forward-looking analysis of possible scenarios and devising suitable strategies for projects such as planned product launches.

Human resources (Medium: Group)

Skilled and dedicated employees are essential for our company’s success. Difficulties in recruiting, hiring and retaining urgently needed specialized employees (on a regional level) – also in view of competition between employers – and in employee development could have significant adverse consequences for our company’s future development. Developments such as the growing relevance of disruptive technologies, the pandemic situation and new ways of working will require our employees to possess new, innovative skillsets. It is also possible that organizational changes may reduce employee engagement or increase staff turnover if they are not implemented transparently or do not deliver the anticipated benefits. Based on our analysis of future requirements, we counter these risks by designing appropriate employee recruitment and development measures. In addition, we align our corporate culture toward diversity and employee needs based on data, analyses and insights, enabling us to tap the full potential of the employment market. Furthermore, deliberate and transparent change management forms an integral part of our human resources management and supports our efforts to constantly motivate our employees.

Information technology (High: Group)

Our business and production processes and our internal and external communications are dependent on global IT systems. Ensuring the optimal alignment of our IT architecture, which also encompasses the use of cloud-based services and management of any service providers commissioned, therefore represents a challenge. This means that system reliability and the confidentiality of internal and external data are of fundamental importance to us. If our governance fails to address this challenging environment in an optimal manner, our operational stability could impact our business and our information security requirements may not be met adequately. If the risk of a breach of data confidentiality, integrity or authenticity, for example due to (cyber) attacks, were to materialize, it could lead to the manipulation and/or uncontrolled outflow of data and knowledge, and to reputational damage. Such attacks may also be carried out by in-house personnel. Our business and/or production processes could also be temporarily disrupted by (cyber) attacks. To counter these risks, we evaluate and utilize new technologies. Projects and measures have also been implemented to keep technical security precautions up to date and proactively identify and examine new threats. In addition, security measures implemented by the Corporate Cyber Defense Center protect our IT infrastructure against unauthorized access.

Finance and tax (Medium: Group)

Liquidity risk

Liquidity risks are defined as the possible inability of the Bayer Group to meet current or future payment obligations. They are determined and managed by the Group Finance enabling function as part of our same-day and medium-term liquidity planning. We hold sufficient liquidity to ensure the fulfillment of all planned payment obligations throughout the Bayer Group at maturity. Furthermore, a reserve is maintained for unbudgeted shortfalls in cash receipts or unexpected disbursements, and its balance is regularly reviewed and adjusted. Credit facilities also exist with banks, including, in particular, an undrawn €4.5 billion syndicated revolving credit facility with a current maturity of 2025.

Credit risks

Credit risks arise from the possibility that the value of receivables or other financial assets of the Bayer Group may be impaired because counterparties cannot meet their payment or other performance obligations. The maximum default risk is reduced by existing collateral, especially our global credit insurance programs. To manage credit risks from trade receivables, the invoicing companies appoint credit managers who regularly analyze customers' creditworthiness. We generally agree reservation of title with our customers. Credit limits are set for all customers. In addition, all credit limits for debtors where total exposure is €10 million or more are evaluated both locally and centrally. Credit risks from financial transactions are managed centrally in the Group Finance enabling function. To minimize risks, financial transactions are only conducted within predefined exposure limits and with banks and other partners that preferably have investment-grade ratings.

Opportunities and risks resulting from market price changes

Opportunities and risks resulting from fluctuations in currency exchange rates, interest rates and commodity prices are managed by the Group Finance enabling function. Risks are avoided or mitigated through the use of derivative financial instruments. The type and level of currency, interest-rate and commodity price risks are determined using sensitivity analyses as per IFRS 7 that are based on hypothetical changes in risk variables (such as interest curves) to gauge the potential effects of market price fluctuations on equity and earnings. Although they fall below the external reporting threshold under our ERM system, we report on interest-rate and commodity price risks in this section in accordance with the provisions of IFRS 7.

Foreign currency opportunities and risks for our company arise from changes in exchange rates and the related changes in the value of financial instruments (including receivables and payables) and of anticipated payment receipts and disbursements not in the functional currency. Receivables and payables in liquid currencies from operating activities and financial items are generally fully exchange-hedged through cross-currency interest-rate swaps and forward exchange contracts. Anticipated exposure from planned payment receipts and disbursements in the future is hedged through forward exchange contracts and currency options according to management guidelines. Sensitivities were determined on the basis of a hypothetical scenario in which the euro appreciates or depreciates by 10% against all other currencies compared with the year-end exchange rates. In this scenario, the estimated hypothetical increase or decrease in cash flows from derivative and nonderivative financial instruments would have improved or diminished earnings as of December 31, 2022, by €64 million (December 31, 2021: €26 million). Derivatives used to hedge anticipated currency exposure that are designated for hedge accounting would have improved or diminished equity (other comprehensive income) by €471 million (December 31, 2021: €443 million). Currency effects on anticipated exposure are not taken into account. Of the amount impacting equity, €129 million is related to the Chinese renminbi (CNY), €147 million to the Brazilian real (BRL), €52 million to the Japanese yen (JPY) and €41 million to the Canadian dollar (CAD).

Interest-rate opportunities and risks for our company arise from changes in capital market interest rates, which in turn could lead to changes in the fair value of fixed-rate financial instruments and changes in interest payments in the case of floating-rate instruments. Interest-rate swaps are concluded to achieve the target structure for Bayer Group debt. A sensitivity analysis conducted on the basis of our net floating-rate receivables and payables position at the end of 2022 gave the following result: A hypothetical increase of one percentage point in these interest rates (assuming constant currency exchange rates) as of January 1, 2022, would have raised our interest expense for the year ended December 31, 2022, by €15 million (December 31, 2021: €14 million).

Commodity price opportunities and risks arise from the volatility of raw material prices, which can lead to an increase in the prices we pay for seeds and energy. We reduce commodity price risks by using commodity price derivatives such as futures, which are mainly designated as hedge accounting. A sensitivity analysis with a hypothetical 10% change in commodity prices for derivatives used for hedging purposes indicated an effect of €38 million on equity (December 31, 2021: €37 million).

Financial risks associated with pension obligations

The Bayer Group has obligations to current and former employees relating to pensions and other post-employment benefits. Changes in relevant measurement parameters such as interest rates, mortality and salary increase rates may raise the present value of our pension obligations. This may lead to increased costs for pension plans or diminish equity due to actuarial losses being recognized in other comprehensive income in the statement of comprehensive income. A large proportion of our pension and other post-employment benefit obligations is covered by plan assets, including fixed-income securities, shares, real estate and other investments. Declining or even negative returns on these investments may adversely affect the future fair value of plan assets. Both of these effects may negatively impact the development of equity and/or earnings and/or may necessitate additional payments by our company. We address the risk of market-related fluctuations in the fair value of our plan assets through balanced strategic investment, and we constantly monitor investment risks in regard to our global pension obligations.

Tax risks

Bayer AG and its subsidiaries operate worldwide and are thus subject to many different national tax laws and regulations. The companies are regularly audited by the tax authorities in various countries where they are tax residents. Amendments to tax laws and regulations, legal judgments and their interpretation by the tax authorities, and the findings of tax audits in these countries may result in higher tax expense and payments, thus also influencing the level of tax receivables, tax liabilities and deferred tax assets and liabilities. Significant acquisitions, divestments, restructuring programs and other reorganizational measures that we undertake could also have an impact on such items. We counter the resulting risks by continuously identifying and evaluating the tax framework. We establish provisions for taxes, based on estimates, for liabilities to the tax authorities of the respective countries that are uncertain as to their amount and the probability of their occurrence.

External partner compliance (Medium: Group)

From the perspective of the Bayer Group as a whole, there is a risk that our partners, such as suppliers, do not pay due attention to our corporate values and requirements concerning ethics, compliance – including the observance of human rights – and sustainability. Clear sustainability criteria and standards are in place for our supply chain on both a global and regional level. With the goal of improving sustainable practices in our supply chain, we operate a Group-wide four-step management process that comprises the following elements: raising awareness, supplier selection, supplier evaluation and supplier development. Seed producers are subject to a separate human rights evaluation process, for which a new approach is being devised as we refine our human rights strategy.

Health, safety and environment (Medium: Group)

We attach great importance not only to product safety but also to protecting our employees and the environment, as well as to respecting human rights both within our own business operations and also in our business relationships along the value chain. Misconduct or noncompliance with legal requirements or Bayer Group standards may result in personal injury, damage to property, reputation or the environment, loss of production, business interruptions and/or liability for compensation payments. This also includes risks relating to the release of hazardous substances due to an incident in production and the obligation to remediate contamination, along with risks concerning the observance of human rights and potential failure to address them adequately. Our principles, standards and measures ensure that our requirements are adequately communicated and optimally implemented.

Intellectual property (Medium: Crop Science, Pharmaceuticals)

Our portfolio largely consists of patent-protected products. Generic manufacturers in particular attempt to contest patents prior to their expiration. We are currently involved in legal proceedings to enforce patent protection for our products. On the other hand, legal action by third parties for alleged infringement of patent or other property rights by Bayer may impede or even halt the development or manufacturing of certain products. We may also be required to pay monetary damages or royalties to third parties. Our patents department regularly reviews the patent situation in collaboration with the respective operating units and monitors for potential patent infringements so that legal action can be taken if necessary.

Legal/compliance (Group)

We are exposed to risks from legal disputes or proceedings to which we are currently a party or which could arise in the future. See Note [30] to the Consolidated Financial Statements of the Bayer Group under "Legal risks." The legal proceedings outlined there are those currently considered to involve material risks and do not represent an exhaustive list. The general risks to which we are potentially exposed include those in the areas of product liability, competition and antitrust law, anti-corruption law, patent law, tax law, data privacy and environmental protection, for example. Investigations of possible legal or regulatory violations may result in the imposition of civil or criminal penalties – including substantial monetary fines – and/or other adverse financial consequences. Payments may also need to be made under out-of-court settlements. These risks may harm our reputation and hamper our commercial success. We have established a global compliance management system to ensure the observance of laws and regulations.

Glyphosate matter

A large number of lawsuits from plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto have been served upon Monsanto in the United States. Glyphosate is the active ingredient contained in a number of Monsanto's herbicides, including Roundup™-branded products. Plaintiffs allege personal injuries resulting from exposure to those products, including non-Hodgkin lymphoma (NHL) and multiple myeloma, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that the glyphosate-based herbicide products are defective and that Monsanto knew, or should have known, of the risks allegedly associated with such products and failed to adequately warn its users. Additional lawsuits are anticipated. The majority of plaintiffs have brought actions in state courts in Missouri and California. Cases pending in US federal courts have been consolidated in a multidistrict litigation (MDL) in the Northern District of California for common pre-trial management.

In 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation. As of February 1, 2023, Monsanto had reached settlements and/or was close to settling in a substantial number of claims. As we now have greater visibility regarding the number and quality of claims made, we consider that, of the approximately 154,000 claims in total, approximately 109,000 have been settled or are not eligible for various reasons.

The three adverse verdicts – Johnson, Hardeman and Pilliod – were not covered by the settlement. In both the Hardeman and Pilliod cases, following unsuccessful appeal procedures, the Company petitioned the Supreme Court for review. In June 2022, the Supreme Court denied review of both Hardeman and Pilliod. There may be future cases in the Roundup™ litigation (or other unrelated actions) that present the Supreme Court with preemption questions, and the Company will continue to review its legal options regarding further proceedings. Currently, in the Carson case, the 11th Circuit Federal Court of Appeals' en banc full panel is considering plaintiff's appeal of a Georgia federal district court's grant of preemption in Monsanto's favor. Oral argument on the appeal is scheduled for June 2023. In the Schaffner case, the 3rd Circuit Federal Court of Appeals is considering Monsanto's appeal of the MDL court's denial of preemption. Briefing in the appeal is ongoing.

In November 2022, the jury in the Ferro (St. Louis County, Missouri) case issued a verdict in Monsanto's favor, determining that Roundup™ did not cause the plaintiff's cancer. This is the sixth consecutive trial win for the Company.

For costs to resolve potential future claims, Bayer has implemented corresponding accounting measures. As of December 31, 2022, Bayer had a provision of US$6.4 billion for the aforementioned settlements to resolve existing and future glyphosate claims. Bayer continues to believe there is no reason for safety concerns in connection with these products.

As of February 1, 2023, a total of 31 Canadian lawsuits relating to Roundup™ had been served upon Bayer, including 11 seeking class action certification.

Bayer believes it has meritorious defenses and intends to defend the safety of glyphosate and our glyphosate-based formulations vigorously.

We may incur considerable financial disadvantages from the pending lawsuits and/or potential future cases if, for example, we are ordered to pay compensatory and possibly punitive damages or if we assume payment obligations under out-of-court settlements. We could be compelled to cover any such increased financial requirements by issuing additional external debt, increasing our equity capital or divesting assets – possibly on unfavorable terms – or through combinations of these measures. The terms on which we obtain external financing could become less favorable as a result of any increased financial requirements. These risks may also adversely affect our reputation.

Product safety and stewardship (Medium: Crop Science, Pharmaceuticals)
Despite extensive studies prior to approval or registration, products may be partially or completely withdrawn from the market due, for example, to the occurrence of unexpected side-effects or negative effects of our products. Such a withdrawal may be voluntary or result from legal or regulatory measures. In the agriculture business in particular, there is an additional risk that our customers could use our products incorrectly. Furthermore, the presence of traces of unwanted genetically modified organisms in agricultural products and/or foodstuffs may have wide-ranging negative repercussions.

We counter these risks, which could give rise to liability claims and also harm our reputation, by taking comprehensive measures in the areas of pharmaceutical and crop protection product safety and testing, including, in particular, a comprehensive stewardship program for genetic product integrity and quality with regard to seeds. These measures are based on globally defined principles and include analysis and monitoring measures, an alert system and training programs.

Quality and regulatory requirements (Medium: Crop Science, Pharmaceuticals, Group)
In almost every country in which we operate, our business activity is subject to extensive regulations, standards, requirements and inspections that also apply to our local contract manufacturers. In the area of health, this pertains to clinical studies and production processes, for example. At our Crop Science Division, extensive requirements apply along the value chain, such as in our production activities, and also with respect to the external partners involved. Acquisitions may at times also be subject to requirements, compliance with which must be ensured both during and after the integration process. Potential infringements of regulatory requirements may result in the imposition of civil or criminal penalties, including substantial monetary fines, restrictions on our freedom to operate, and/or other adverse financial consequences. They could also harm our reputation and lead to declining sales and/or margins. We counter these risks through binding principles, standards and the control mechanisms in place. Quality requirements are defined and implemented in global quality management systems.

Security (Medium: Group)
Potential criminal activities targeting our employees, property or business activities represent a risk for our company. These include intellectual property theft, vandalism, physical attacks and sabotage. In addition, counterfeit or adulterated versions of our products could be put into circulation. There is also the risk of crises such as a pandemic or a prolonged power outage that could lead to a breakdown of our critical (IT) infrastructure and our production. We counter these risks – which in addition to financial effects could negatively affect our reputation in some cases – through our (local) crisis organizations, which produce response plans and take further measures. We have implemented early warning systems, while also ensuring continuous reporting and carrying out regular crisis simulation exercises. We also have a security organization in place that operates globally. The Business Continuity Management department within the Internal Audit & Risk Management enabling function assesses business continuity risks and defines appropriate measures together with the responsible specialist units.

3.2.3 Overall Assessment of Opportunities and Risks by the Board of Management

In the opinion of the Board of Management, based on the current evaluations, none of the risks described above endanger the company's continued existence. Nor could we identify any potential threat to our continued existence, including when comparing our risk-bearing capacity with our aggregated risk situation. We see a higher risk status compared with our assessment in the Annual Report for 2021 due to growing geopolitical risks and, at this present time, Russia's war in Ukraine and the resultant increasing volatility and difficulty in predicting the future situation. We remain convinced that we can take advantage of the opportunities resulting from our entrepreneurial activity and successfully master the challenges resulting from the risks stated above.

4. Corporate Governance Report

Bayer conforms with all recommendations of the German Corporate Governance Code

The Corporate Governance Report of the Bayer Group conforms with the recommendations of the German Corporate Governance Code and includes a Declaration by Corporate Management pursuant to Sections 289f and 315d of the German Commercial Code as well as all the information and explanations required by Section 289a through e and Section 315a through d of the German Commercial Code. The contents of the Corporate Governance Report are also included in the management report. In accordance with Section 317, Paragraph 2, Sentence 6 of the German Commercial Code, the information contained in the Declaration by Corporate Management is not taken into account in the audit of the financial statements.

4.1 Declaration by Corporate Management Pursuant to Sections 289f and 315d of the German Commercial Code

With the Declaration by Corporate Management pursuant to Sections 289f and 315d of the German Commercial Code for Bayer AG and the Bayer Group, the company provides information on the main elements of the Bayer Group's corporate governance structures, relevant corporate governance practices, the composition and procedures of the Board of Management, the Supervisory Board and their committees, and the objectives and concepts that must be established when composing the Board of Management and the Supervisory Board.

Declaration concerning the German Corporate Governance Code pursuant to Section 161 of the German Stock Corporation Act

In December 2022, the Board of Management and Supervisory Board of Bayer AG issued the annual declaration concerning the German Corporate Governance Code, stating that, since the previous declaration, Bayer AG has fully complied with the recommendations of the German Corporate Governance Code in effect at that time, and that it intends to fully comply with the recommendations contained in the April 28, 2022, version thereof in the future.

Availability of compensation report and information on compensation system and compensation resolution

The Compensation Report for 2022, Independent Auditor's Report, information on our compensation system and the most recent resolution on compensation are publicly accessible at www.bayer.com/cpr.

Information on corporate governance practices

Bayer AG is subject to German stock corporation law and therefore has a dual governance system consisting of the Board of Management and the Supervisory Board, which manage the company based on a transparent strategy that is geared toward its long-term success and complies with applicable law and ethical standards.

Corporate governance practices that go beyond the legal requirements are derived from our vision and our common values, which form the basis of the respectful working relationship between our employees and with our external partners. Compliance with responsible practices at every stage of the value chain is crucial in corporate governance. The main guidelines are summarized primarily in our corporate policies on compliance, human rights, and fairness and respect at work, as well as in our Supplier Code of Conduct and the Bayer Societal Engagement (BASE) principles. The organization and oversight obligations of the Board of Management and the Supervisory Board are mainly ensured by compliance management and risk management systems.

Board of Management

Composition, objectives (diversity concept) and succession planning

In 2022, the Board of Management of Bayer AG comprised six members. The Board of Management runs the company on its own responsibility with the goal of achieving defined corporate objectives and sustainably increasing the company's enterprise value.

With regard to the composition of the Board of Management, the Supervisory Board takes into account specialist expertise and personal aptitude, as well as aspects such as age, gender, education and professional background. Pursuant to Section 76, Paragraph 3a of the German Stock Corporation Act (AktG), the Supervisory Board must ensure that the Board of Management includes at least one woman and at least one man if it consists of three or more members.

An additional aspect relating to the composition of the Board of Management that the Supervisory Board has resolved to pursue is diversity. Without basing selection decisions on this aspect in individual cases, the Supervisory Board aims to ensure that different age groups are adequately represented on the Board of Management, while also taking into account the experience required for a position on the Board of Management. Irrespective of this, members of the Board of Management should generally step down from that office when they turn 62. The composition of the Board of Management should adequately reflect the company's international operations. The Supervisory Board therefore endeavors to include on the Board of Management several members of different nationalities or with an international background (e.g., several years of career experience outside Germany or the oversight of foreign business activities). The Supervisory Board also strives to ensure diversity with regard to the educational and professional backgrounds of the members of the Board of Management. In addition to the specific professional expertise, management and leadership experience required for the given task, members of the Board of Management should cover the broadest possible spectrum of knowledge, experience, and educational and professional backgrounds.

These objectives are taken into account in the selection of candidates to fill open positions on the Board of Management. With this concept for the composition of the Board of Management, the Supervisory Board pursues the goal of ensuring not just the greatest possible individual suitability of its various members, but also that as many different perspectives as possible are represented in the leadership of the company through a balanced and diverse Board of Management structure, and that the candidate selection pool is as large as possible.

In accordance with the statutory requirements of the Second Leadership Positions Act (FüPoG II), there are also targets pertaining to the proportion of women at the first and second management levels below the Board of Management. The Board of Management has set targets of 35%[16, 17] women at the first management level of Bayer AG and 35%[17, 18] women at the second management level. These targets are to be attained by June 30, 2027.

As part of the succession planning process, the Board of Management informs the Supervisory Board about candidates who have been identified as having the potential to become a member of the Board of Management. Among other things, the Supervisory Board places emphasis on intensive human resources development at the management level below the Board of Management while taking into account the diversity criteria outlined above. The Supervisory Board endeavors to ensure that the candidates in question are introduced to the Supervisory Board or its committees. For each member of the Board of Management, at least one candidate has been identified as a replacement who could assume the role at short notice if required. Whenever it becomes clear that there will be an empty seat on the Board of Management, efforts are undertaken to identify external candidates and evaluate internal candidates, usually with the aid of an HR consulting firm.

Rodrigo Santos was appointed to the Board of Management effective January 1, 2022, and assumed the role of head of the Crop Science Division. His predecessor, Liam Condon, stepped down from the Board of Management on December 31, 2021.

The Supervisory Board of Bayer AG has appointed Bill Anderson to become CEO of Bayer, effective June 1, 2023. He will join Bayer as a member of the Board of Management on April 1, 2023. Current CEO Werner Baumann will retire at the end of May 2023.

Implementation status of the objectives

In line with the objectives, different age groups are represented on the Board of Management, while also taking into account the experience required for Board of Management positions. The ages of the members of the Board of Management ranged from 49 to 60 years as of December 31, 2022. Three of the six members of the Board of Management serving as of December 31, 2022, are citizens of a country other than Germany. All members of the Board of Management have amassed many years of career experience outside Germany. The members of the Board of Management also have diverse professional backgrounds. The legal requirement that the Board of Management must include at least one woman and at least one man has been fulfilled.

As of June 30, 2022, the share of women at the first management level of Bayer AG below the Board of Management was 26.6% (target: 20%), and 23.7% (target: 25%) at the second management level. While the target set for the latter group was not attained, the share of women at that level did increase by approximately 13% compared with the previous reporting cycle. Failure to meet that target as of June 30, 2022, was partly due to the fact that when establishing the target, the percentage of women promoted from the second to the first management level was much higher (approximately 35%) than the percentage promoted to the second management level (approximately 27%). This also led to the significant overachievement of the target for the proportion of women at the first management level below the Board of Management.

[16] Formal target pursuant to FüPoG II: 36 16/19%
[17] Based on the target size, the formal target pursuant to FüPoG II indicates the percentage to be specified that results in a whole headcount based on the current size of the group.
[18] Formal target pursuant to FüPoG II: 35 35/199%

Procedure and committees

The Board of Management performs its tasks according to the law, the Articles of Incorporation and the Board of Management's rules of procedure, which for example govern the provision of information to the Supervisory Board, and works with the company's other governance bodies in a spirit of trust.

Supervisory Board

Composition and objectives (diversity concept and expertise profile)

Under the German Codetermination Act, half of the Supervisory Board's 20 members are elected by the stockholders and the other half by the company's employees.

The Supervisory Board endeavors to ensure that its members collectively possess the necessary expertise, skills and professional experience to properly perform their duties. This includes the following areas: management and leadership of international companies, a business understanding with regard to the company's main areas of activity, research and development, finance, controlling/risk management, human resources, governance/compliance, digitalization and sustainability issues of significance to the company, such as in the area of climate protection.

The Supervisory Board has also resolved to pursue diversity in its composition, for instance with regard to age, gender, education and professional background. With respect to the international business alignment of Bayer AG, the Supervisory Board strives to ensure at all times that several of its members have international business experience or an international background in other respects. Further objectives concerning the composition of the Supervisory Board are that different age groups be suitably represented on the Supervisory Board and that, absent special circumstances, a member should not hold office beyond the end of the next Annual Stockholders' Meeting following their 72nd birthday. With a view to avoiding potential conflicts of interest and taking into account the ownership structure of the company and the number of independent Supervisory Board members, the Supervisory Board has set itself the goal that more than half of the stockholder representatives be independent. The Supervisory Board assesses the independence of its members according to the recommendation contained in Section C.7 of the German Corporate Governance Code. The Supervisory Board endeavors to ensure that the terms of service of its members are evenly spread, whereby no more than 20% of stockholder representatives shall serve on the Supervisory Board for longer than 12 years.

The Nominations Committee and the full Supervisory Board take these objectives into consideration when nominating candidates to fill open positions on the Supervisory Board. The stated objectives refer to the Supervisory Board as a whole, unless otherwise determined. However, since the Supervisory Board can only nominate candidates for election as stockholder representatives, it can only take the objectives into account in these nominations. One objective for Supervisory Board elections is that neither women nor men account for less than 30% of the membership, in line with the legal requirements.

The Supervisory Board aims to achieve a balanced and diverse composition, to the extent that it can influence this. The aim is to ensure that oversight of the company's management is based on as many different perspectives as possible and that the candidate selection pool is as large as possible.

Implementation status of the objectives

The Supervisory Board has several members with international business experience or an international background. The ages of the members of the Supervisory Board were relatively evenly spread across a range of 41 to 68 years as of December 31, 2022. One member of the Supervisory Board, Dr. Paul Achleitner, has been a member of the Supervisory Board for more than 12 years. As such, the Supervisory Board does not consider him to be independent as defined in Section C.7 of the German Corporate Governance Code. However, the Supervisory Board does not harbor any concerns about Dr. Achleitner's impartiality or any potential conflicts of interest.

The Supervisory Board considers the stockholder representatives Dr. Simone Bagel-Trah, Horst Baier, Dr. Norbert Bischofberger, Ertharin Cousin, Colleen A. Goggins, Kimberly Mathisen, Alberto Weisser, Prof. Dr. Otmar Wiestler and Prof. Dr. Norbert Winkeljohann to be independent. The proportion of women on the Supervisory Board is currently 45% for the full Supervisory Board, 50% for the employee representatives and 40% for the stockholder representatives. Seven of the 20 members of the Supervisory Board are citizens of a country other than Germany. Numerous other members have many years of international business experience. The members of the Supervisory Board have also completed a whole range of vocational training and study courses.

For the purposes of the qualification matrices below, the Supervisory Board primarily considers its members to possess expertise and experience in the corresponding areas if they have completed professional training in that field or have amassed many years of professional experience (including several years as a member of the Supervisory Board or one of its respective committees).

In the opinion of the Supervisory Board, the stockholder representatives have the following special expertise and experience, as well as the following independence status:

A 4.1/1

Expertise and Experience of Shareholder Representatives on the Supervisory Board

	International business experience	R&D	Agriculture/ food	Healthcare	Finance	Controlling/ risk management	HR	Governance/ compliance	Digital	Sustainability/ climate protection	Independence
Dr. Paul Achleitner	X				X	X	X	X			
Dr. Simone Bagel-Trah	X					X	X	X		X	X
Horst Baier	X				X	X	X	X		X	X
Dr. Norbert W. Bischofberger	X	X		X							X
Ertharin Cousin	X		X				X	X		X	X
Colleen A. Goggins	X			X			X				X
Kimberly Mathisen	X	X	X	X			X		X	X	X
Alberto Weisser	X		X		X	X	X	X		X	X
Prof. Dr. Otmar D. Wiestler	X	X		X							X
Prof. Dr. Norbert Winkeljohann (Chairman)	X				X	X	X	X	X	X	X

Horst Baier, Chairman of the Audit Committee, also has special expertise regarding the application of accounting standards and internal control and risk management systems. This expertise is based on knowledge and experience gained in part through his previous work as head of finance and accounting and as the CFO of a publicly listed company. Norbert Winkeljohann, Chairman of the Supervisory Board and a member of the Audit Committee, has special expertise in the field of auditing. This expertise is based on his training as an auditor, academic work in this field and longstanding experience as an external auditor for publicly listed companies and as a

partner and chairman of the management board of an international auditing company. In addition, Horst Baier and Norbert Winkeljohann each possess special expertise in the area of sustainability reporting and auditing.

In the opinion of the Supervisory Board, the employee representatives have the following special expertise and experience:

A 4.1/2

Expertise and Experience of Employee Representatives on the Supervisory Board

	International business experience	R&D	Agriculture/ food	Healthcare	Finance	Controlling/ risk management	HR	Governance/ compliance	Digital	Sustainability/ climate protection
André van Broich	X	X	X				X	X		
Yasmin Fahimi		X				X	X	X		X
Dr. Barbara Gansewendt	X	X		X	X	X	X	X		
Francesco Grioli	X				X	X	X	X	X	
Heike Hausfeld	X						X	X	X	
Frank Löllgen	X	X			X	X	X	X		
Andrea Sacher		X		X			X			
Claudia Schade							X			
Heinz Georg Webers	X			X		X	X	X		
Michael Westmeier				X	X	X	X			

Procedure and committees

The role of the Supervisory Board is to oversee and advise the Board of Management. The Supervisory Board is directly involved in decisions on matters of fundamental importance to the company, regularly conferring with the Board of Management on the company's strategic alignment and the implementation status of the business strategy. The Report of the Supervisory Board in this Annual Report provides details about the work of the Supervisory Board and its committees. The Supervisory Board formed an ESG Committee effective January 1, 2022, and thus performs an oversight and advisory function with regard to sustainability issues. At its December meeting, the Supervisory Board expanded the Human Resources Committee from four to six members and renamed it the "Human Resources and Compensation Committee", thereby meeting the increased requirements with respect to succession planning and compensation-related tasks. The Audit Committee discusses the audit risk assessment, the audit strategy and audit planning, as well as the audit results with the auditor. As part of this process, the Chairman of the Audit Committee regularly discusses the progress of the audit with the independent auditor and reports to the Committee. The Audit Committee consults with the independent auditor on a regular basis without the Board of Management.

The Supervisory Board has set itself rules of procedure that are published online.

When new members join the Supervisory Board, a series of introductory meetings are arranged with the members of the Board of Management and with representatives from internal functions to introduce them to their work on the Supervisory Board, while informational material is also provided in written form.

Cologne Local Court (Amtsgericht Köln) appointed Kimberly Mathisen to the Supervisory Board of Bayer AG. Mathisen, who holds dual US and Norwegian citizenship, succeeded Professor Fei-Fei Li, who stepped down from the Board at the end of August due to personal medical reasons.

Further information

Securities transactions by members of governance bodies

Members of the Board of Management or Supervisory Board and persons with whom they have close relationships are legally obligated to report own-account transactions in shares or debt securities of Bayer AG, associated derivatives or other associated financial instruments to Bayer AG and the German Federal Financial Supervisory Authority (BaFin) as soon as the total volume of transactions made by a member of the Board of Management or Supervisory Board, or a person with whom they have a close relationship, has reached the €20,000 threshold within a calendar year. The transactions reported to Bayer AG in 2022 were duly published and can be viewed on the company's website.

4.2 Compliance

We define compliance as legally impeccable conduct by all employees in their daily work, because the way they carry out their duties affects our company's reputation. We do not tolerate any violation of applicable laws, codes of conduct or internal regulations. Compliance is essential for our long-term economic success.

The following compliance principles apply throughout the Bayer Group:

// We compete fairly in every market.
// We act with integrity in all our business dealings.
// We balance economic growth with ecological and social responsibility.
// We observe trade controls that regulate our global business.
// We safeguard equal opportunity in securities trading.
// We keep accurate books and records.
// We treat each other with fairness and respect.
// We protect and respect intellectual property rights.
// We act in Bayer's best interest.
// We protect and secure personal data.

All employees are required to observe the compliance principles and to immediately report any violation of the Corporate Compliance Policy. Infringements are sanctioned. This applies in particular to managerial employees, who, for example, may lose their entitlement to variable compensation components and be subject to further disciplinary measures if violations have occurred in their sphere of responsibility that they could have prevented. Compliant and lawful conduct also factors into the performance evaluations of all managerial employees.

The global compliance management system is steered by a central compliance organization within the Bayer Group that reports to the Chief Financial Officer (CFO) and to the Audit Committee of the Supervisory Board. The CFO is responsible for the compliance organization, while the Audit Committee of the Supervisory Board oversees the effectiveness and further development of compliance within the Group.

Potential compliance risks (such as corruption) are identified together with the operational units to ensure the systematic and preventive detection and assessment of risks. Potential risks are then entered into global databases that we use to develop suitable measures for specific processes, business activities or countries, for example. In addition, we assess our business partners according to risk criteria as we look to identify potential compliance risks. Adherence to the corporate compliance principles is among the subjects covered in audits conducted by Bayer's Internal Audit and in the analyses and investigations by the legal and compliance organization. The heads of these organizations provide regular reports on the findings of the audits and analyses to the Audit Committee of the Supervisory Board, while summary reports are presented at least once a year.

Handling of suspected and actual compliance violations

Suspected compliance violations can be reported – anonymously if desired and if permitted by respective national law – to a globally accessible compliance hotline that is operated by an independent service provider. Reports can be submitted either online or by telephone, with calls answered by trained, independent specialists. Those submitting reports can do so in their preferred language. The hotline is also accessible to the general public.

In 2022, the compliance organization received a total of 372 compliance reports in this way.

In addition, there is a so-called “speak-up inbox” at Bayer for the submission of suspected compliance violations. Alternatively, suspected violations may also be reported to the local compliance function, Internal Audit, Human Resources or directly to the supervisor. Suspected compliance violations may also be reported by logging a so-called incident request on a platform. Moreover, the compliance function records and processes compliance violations discovered as part of monitoring activities.

Compliance violations include all possible types of infringements of internal and external requirements and are systematically sanctioned. The action taken depends on factors including the gravity of the compliance violation and applicable law.

Compliance training and communications activities

We support all employees in acting with integrity and proactively avoiding potential violations by implementing Bayer-wide training measures that are tailored to target groups and based on identified needs and are flanked by communication campaigns. Supervisors and/or compliance managers can be consulted if there are any questions about lawful behavior.

In 2022, some 96.5% of Bayer’s managerial employees worldwide completed at least one compliance training program. Overall, around 85.1% of employees took part in the global web-based training program on conflicts of interest.

Training measures on anti-corruption, the importance of openly expressing concerns (“speak up”), antitrust law, conflicts of interest, fairness and respect in the workplace, foreign trade law compliance, product-related communication and data protection are fundamental elements of our compliance management system.

Marketing compliance and applicability of accepted standards

We are committed to responsible marketing practices. Our efforts in this regard are guided by our Corporate Compliance Policy, Anti-Corruption Policy and rules of conduct for responsible marketing, for example.

We have also put in place directives and corporate policies that are designed to prevent price fixing and ensure data protection. Various industry codes such as those of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) and the European Federation of Pharmaceutical Industries and Associations (EFPIA) also apply in marketing and distribution. As regards the advertising of human pharmaceutical products, we comply with the IFPMA Code of Practice as the minimum global standard, along with the regulations set out in the applicable regional and national codes. Pharmaceuticals observes the applicable transparency rules (e.g., the Physician Payments Sunshine Act in the United States) and participates in voluntary programs such as the EFPIA Disclosure Code.

Crop Science’s Product Stewardship Commitment applies to all products, services and technologies and is in alignment with the International Code of Conduct on Pesticide Management issued by the Food and Agriculture Organization (FAO) of the United Nations and the Code of Conduct on Plant Biotechnology issued by CropLife International, for example.

Lobbying

Forming part of our commitment to ensuring transparent lobbying, our corporate policy entitled "Code of Conduct for Responsible Lobbying" sets out binding rules for our involvement in political matters and creates transparency in our interactions with the representatives of political institutions.

As set out in this code of conduct, our company did not make any donations to political parties, politicians or candidates for political office in 2022. Effective January 1, 2022, we abolished our applicable exemption for the United States meaning that we no longer donate directly as a company. However, one special aspect continues to apply: employees can make private donations in support of political nominees at the federal level through so-called "political action committees." These voluntary donations are made only by employees, not the company. Decisions on how the donations made through Bayer's political action committee, BAYERPAC, are allocated are made by an independent committee made up of employees. The allocation criteria it applies reflect societal challenges, among other factors. These donations are subject to narrow conditions and mandatory transparency measures.

We also apply the Bayer Societal Engagement (BASE) principles, which are afforded the status of a corporate policy and serve to codify our standards and values to an even greater degree.

4.3 Disclosures Pursuant to Sections 289b Through e and 315b and c of the German Commercial Code

The Bayer Group meets the requirements for the nonfinancial statement pursuant to Sections 289 b through e and 315 b and c of the German Commercial Code (HGB). The relevant disclosures pertaining to the nonfinancial statement in accordance with the Corporate Social Responsibility Directive Implementation Act (CSR-RUG) are integrated into the management report, with the GRI standards (Section 289d HGB) serving as a framework.

The Supervisory Board fulfilled its auditing duty for the nonfinancial statement pursuant to Section 170, Paragraph 1 and Section 171, Paragraph 1 of the German Stock Corporation Act (AktG).

A 4.3/1

Index to Nonfinancial Statement

Topics	Chapter
Business model	A 1.1 Corporate Profile and Structure
Aspects	
Environmental aspects	A 1.2.1 Strategy and Targets A 1.5 Procurement and Supplier Management A 1.6 Product Stewardship A 1.7 Environmental Protection and Safety
Employee-related aspects	A 1.2.2 Sustainability Management A 1.4 Commitment to Employees A 1.5 Procurement and Supplier Management A 1.7 Environmental Protection and Safety
Social aspects	A 1.2.2 Sustainability Management A 1.6 Product Stewardship A 1.7 Environmental Protection and Safety
Bribery and corruption	A 1.2.2 Sustainability Management A 1.5 Procurement and Supplier Management A 4.2 Compliance
Respect for human rights	A 1.2.2 Sustainability Management A 1.4 Commitment to Employees A 1.5 Procurement and Supplier Management
Material risks	A 3.2 Opportunity and Risk Report
Diversity concept	A 1.4 Commitment to Employees A 4.1 Declaration by Corporate Management

4.4 Takeover-Relevant Information

Explanatory report pursuant to Section 289a, Paragraph 1 and Section 315a, Paragraph 1 of the German Commercial Code (HGB)

The capital stock of Bayer AG amounted to €2,515,005,649.92 as of December 31, 2022, divided into 982,424,082 no-par registered shares. The capital stock and the number of shares were thus unchanged from the end of the previous year. Each share confers one voting right. A small number of shares may be subject to temporary trading restrictions, such as retention periods, in connection with employee stock participation programs. We received no notifications in 2022 of direct or indirect holdings of shares in Bayer AG that exceed 10% of the capital stock. The company thus is not in possession of any notifications of holdings that exceed 10% of the capital stock.

The appointment and dismissal of members of the Board of Management are subject to the provisions of Sections 84 and 85 of the German Stock Corporation Act, Section 31 of the German Codetermination Act and Section 6 of the company's Articles of Incorporation. Pursuant to Section 84, Paragraph 1 of the German Stock Corporation Act, the members of the Board of Management are appointed and dismissed by the Supervisory Board. The Supervisory Board may appoint one member of the Board of Management to be the Chairman of the Board of Management pursuant to Section 84, Paragraph 2 of the German Stock Corporation Act and Section 6, Paragraph 1 of the Articles of Incorporation. Pursuant to Section 84, Paragraph 3 of the German Stock Corporation Act, the Supervisory Board must grant a Board of Management member's request to revoke their appointment to the Board of Management in certain cases, and must also guarantee that member's reappointment after certain periods. Since Bayer AG falls within the scope of the German Codetermination Act, Section 31 of that act governs the voting majority required for the appointment or dismissal of members of the Board of Management as well as the voting procedure within the Supervisory Board. Under Section 6, Paragraph 1 of the Articles of Incorporation of Bayer AG, the number of members of the Board of Management is determined by the Supervisory Board but must be at least two. As a publicly listed company that is subject to the German Codetermination Act, Bayer AG must ensure under Section 76, Paragraph 3a of the German Stock Corporation Act that its Board of Management includes at least one man and one woman if the number of members is greater than three.

Any amendments to the Articles of Incorporation are made pursuant to Section 179 of the German Stock Corporation Act and Sections 10 and 17 of the Articles of Incorporation. Under Section 179, Paragraph 1 of the German Stock Corporation Act, amendments to the Articles of Incorporation require a resolution of the Stockholders' Meeting. Pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act, this resolution must be passed by a majority of three-quarters of the voting capital represented at the meeting, unless the Articles of Incorporation provide for a different majority. However, where an amendment relates to a change in the object of the company, the Articles of Incorporation may only specify a larger majority. Section 17, Paragraph 2 of the Articles of Incorporation of Bayer AG utilizes the scope for deviation pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act and provides that resolutions may be passed by a simple majority of the votes cast or, where a capital majority is required, by a simple majority of the capital represented. Pursuant to Section 10, Paragraph 9 of the Articles of Incorporation, the Supervisory Board may resolve on amendments to the Articles of Incorporation that relate solely to their wording.

The Annual Stockholders' Meeting held on April 26, 2019, resolved that the Board of Management be authorized to purchase and dispose of own shares representing up to 10% of the capital stock existing at the time the resolution was adopted. This authorization expires on April 25, 2024. The authorization to purchase own shares also includes the purchase of own shares using put or call options (derivatives) up to a volume of 5% of the capital stock existing at the time the resolution was adopted or at the time the authorization is exercised. Stockholders' subscription rights may be excluded, depending on the purpose for which the purchased own shares are to be used.

A material agreement that is subject to the condition precedent of a change of control pertains to the undrawn €4.5 billion syndicated credit facility arranged by Bayer AG and its US subsidiary Bayer Corporation. This facility is available until December 2025. The participating banks are entitled to terminate the credit facility in the event of a change of control at Bayer and demand repayment of any loans that may have been granted under this facility up to that time. A similar clause is contained in the terms of a syndicated credit facility amounting to €3 billion that was fully drawn by Bayer AG in May 2022.

In 2018, Bayer Capital Corporation B. V. issued a bond with a nominal volume of €5 billion and Bayer US Finance II LLC issued a US$15 billion bond in 144A/RegS format, both of which were guaranteed by Bayer AG. Holders of these bonds have the right to demand the redemption of bonds by Bayer AG in the event of a change of control if Bayer AG's credit rating were to deteriorate within 120 days after such change of control becomes effective, although the period for a potential deterioration of Bayer AG's credit rating is only 60 days in the case of the US$15 billion bond. As of December 31, 2022, the original US$15 billion bond had an outstanding amount of US$12.5 billion, and the original €5 billion bond had an outstanding amount of €3.3 billion.

The terms of the €0.5 billion in outstanding notes (as of December 31, 2022) issued by Bayer in the years 2014 to 2017 under its Debt Issuance Programme also contain a corresponding change-of-control clause associated with a deterioration of the credit rating within 120 days. Clauses to this effect were also included in the terms of the US$7 billion bond in 144A/Reg S format issued in 2014, which had an outstanding amount of US$1.8 billion as of December 31, 2022; the nominal €6 billion in bonds issued by Bayer AG in 2020, the full amount of which was outstanding as of December 31, 2022; and the nominal €4 billion in bonds issued by Bayer AG in January 2021, the full amount of which was also outstanding as of December 31, 2022.

In the event of a change of control, members of the Board of Management are – if certain narrow conditions are met – entitled to a severance payment of 250% of annual base compensation, or 200% of annual cash compensation if they were appointed in or prior to 2010. The payment is limited in either case to the compensation for the remaining term of the respective contract, capped at twice the annual compensation.

5. Information on Bayer AG

Business lease agreements exist between Bayer AG on the one hand, and Bayer CropScience AG and Bayer Pharma AG – the former parent companies of the divisions Crop Science and Pharmaceuticals – on the other. Bayer AG as lessee manages these two companies' operational businesses on the basis of these agreements. In addition to its holding company function, Bayer AG thus also performs the parent company functions with respect to the two divisions.

Bayer AG is a generator and supplier of utilities at multiple locations and thus an energy utility as defined in Section 3, No. 18 of the German Energy Industry Act (EnWG). Since utility supply networks are operated by a subsidiary, Bayer AG also constitutes a vertically integrated energy utility under Section 3, No. 38 of the EnWG. However, regarding its own activities, it is only subject to the separate accounting obligation and not the obligation to prepare activity reports.

The financial statements of Bayer AG are prepared in accordance with the German Commercial Code (HGB) and the German Stock Corporation Act (AktG). Because the company is an integrated energy utility, the provisions of Section 6b of the EnWG are also observed.

5.1 Earnings Performance of Bayer AG

A 5.1/1

Bayer AG Summary Income Statements According to the German Commercial Code

€ million	2021	2022
Net sales	15,497	16,470
Increase or decrease in inventories of finished goods and work in process	109	5
Other own work capitalized	7	7
Other operating income	3,207	4,294
Cost of materials	(10,224)	(11,597)
Personnel expenses	(3,003)	(3,431)
Write-downs on intangible assets and property, plant and equipment	(108)	(185)
Other operating expenses	(6,923)	(8,637)
Operating income	**(1,438)**	**(3,074)**
Income from investments in affiliated companies - net	5,660	9,257
Interest income/expense – net	88	(1,199)
Other financial income/expense – net	81	(27)
Nonoperating income	**5,829**	**8,031**
Income taxes and other taxes	(281)	(193)
Income after taxes/net income	**4,110**	**4,764**
Allocation to other retained earnings	(2,055)	(2,382)
Distributable profit	**2,055**	**2,382**

Development of earnings

Sales in 2022 came in slightly above the €16 billion forecast, with the two divisions and Enabling Functions all contributing to this performance. Pharmaceuticals significantly outperformed expectations with a number of primary sales drivers such as Adempas™ and Adalat™, more than offsetting the slight decline for its best-selling product Xarelto™. At Crop Science, internal sales in particular exceeded expectations. Furthermore, sales from the internal charging-on of costs for services in the Enabling Functions were slightly higher than forecast. Operating earnings were held back by significantly higher pension trend assumptions, currency effects and inflation, which negatively impacted the overall cost structure. There was an operating loss of approximately €3 billion, which was €2 billion wider than planned.

Sales of Bayer AG increased by about 6% to €16,470 million in 2022 (2021: €15,497 million).

Sales of the Crop Science Division came in at €4,817 million, exceeding the prior-year level (2021: €4,636 million). This positive business performance was attributable to favorable currency effects and higher prices for crop protection products. Intra-Group sales rose slightly to €4,434 million (2021: €4,366 million). External sales also improved, coming in at €383 million (2021: €270 million) mainly due to the expansion of business at Fungicides. Sales rose to €1,897 million at Fungicides (2021: €1,848 million), €1,341 million at Herbicides (2021: €1,255 million), and €843 million at Insecticides (2021: €813 million). The increase at Herbicides mainly resulted from higher sales of cereal and grass weed herbicides. On a regional level, sales climbed to €2,021 million in Europe/Middle East/Africa (2021: €1,703 million), €1,114 million in North America (2021: €1,110 million), and €1,117 million (2021: €1,068 million) in Asia/Pacific. The sales decline in Latin America to €565 million (2021: €755 million) was attributable to the intra-Group transfer of the Brazilian business to Bayer CropScience Deutschland GmbH in mid-2021.

Pharmaceuticals posted an increase in sales to €10,383 million (2021: €9,866 million). Intra-Group sales rose to €9,475 million (2021: €8,992 million) and external sales to €908 million (2021: €874 million). The increase in sales of Adempas™ to €648 million (2021: €551 million) was the result of higher demand in the United States. The decline in Xarelto™ sales to €3,753 million (2021: €3,799 million) was chiefly due to the expiration of our patent in Brazil and tender procedures in China. Sales of Adalat™ climbed to €674 million (2021: €554 million) as a result of higher demand in China. On a regional level, Pharmaceuticals sales in Europe/Middle East/Africa advanced to €4,937 million (2021: €4,500 million), mainly due to increased intra-Group reimbursements for research and development expenses in the fields of women and men's health. The increase in sales in North America to €2,301 million (2021: €2,123 million) was primarily driven by higher demand for Adempas™ and Mirena™. Sales in Asia/Pacific rose to €2,711 million (2021: €2,688 million), mainly as a result of stronger demand for Adalat™ in China. The decrease in sales in Latin America to €434 million (2021: €555 million) was primarily due to the expiration of the Xarelto™ patent.

Sales at Enabling Functions climbed to €1,270 million (2021: €995 million).

Other operating income rose to €4,294 million (2021: €3,207 million). This rise was largely driven by the increase in exchange gains to €3,852 million (2021: €2,535 million), which was partially offset by a decline in income from the reversal of unutilized provisions to €139 million (2021: €530 million). The sale of the Environmental Science Professional business to international private equity firm Cinven for around €2,299 million resulted in income of €127 million within Bayer AG as part of the purchase price allocation.

The cost of materials increased by 13% year on year to €11,597 million (2021: €10,224 million), mainly due to higher prices for the purchase of raw materials, supplies and energy, as well as increased licensing expenses and business lease fees. Personnel expenses climbed to €3,431 million (2021: €3,003 million), primarily due to higher expenses for company pension plans as a result of increased pension trend assumptions.

Other operating expenses increased to €8,637 million (2021: €6,923 million). The year-on-year change resulted from a €1,697 million increase in expenses from foreign currency translation (2021: €2,571 million), a €156 million rise in marketing and selling expenses (2021: €421 million), and a €111 million increase in expenses for logistics and information (2021: €583 million). A decline of €234 million in expenses for severance payments (2021: €291 million) had an opposing effect.

Research and development expenses, consisting of related personnel and nonpersonnel costs within the respective expense item, amounted to €2,520 million (2021: €2,431 million). Of the total expenses, €747 million (2021: €491 million) was attributable to Crop Science, where the increase was mainly due to a new service agreement at Digital Farming Solutions. At Pharmaceuticals, expenses declined to €1,773 million (2021: €1,940 million) due to lower expenditures for restructuring measures. As of December 31, 2022, there were 4,679 employees (FTEs) working in research and development. Research and development expenses corresponded to a 15% (2021: 16%) share of sales.

The company recorded an operating loss of €3,074 million for 2022 (2021: €1,438 million).

The balance of income and expenses from investments in affiliated companies was €9,257 million (2021: €5,660 million), and thus up €3,597 million year on year. Dividends and similar income from subsidiaries rose to €291 million (2021: €204 million), largely due to a €77 million increase in dividend payments by Bayer (China) Ltd. to €201 million (2021: €124 million). The balance of income and expenses from profit and loss transfer agreements with subsidiaries declined by €2,605 million to minus €601 million (2021: €2,004 million). This decrease was mainly attributable to Bayer Pharma AG (€1,817 million), with the prior year having included one-time write-backs due to a remeasurement of the Bayer Group's North American business; to Neunte Bayer VV GmbH (€785 million), as a result of write-downs of an investment in an affiliated company after its value decreased due to the development of interest rates in 2022; and to Bayer CropScience AG (€113 million), due to an existing control agreement. The balance of other income and expenses from investments in affiliated companies increased to €9,567 million (2021: €3,452 million). These items included gains from the sale of investments in affiliated companies together with write-downs and write-ups thereof. There were gains of €9,592 million in 2022 resulting from intra-Group changes in the shareholding structure (2021: €3,509 million), write-downs of €53 million (2021: €89 million) for Bayer Türk Kimya Sanayii Limited Sirketi, Turkey, and a write-up of €28 million for Bayer Capital Corporation B. V., Netherlands (2021: write-down of €16 million).

Net interest expense in 2022 amounted to €1,199 million (2021: net interest income of €88 million). This €1,287 million change was primarily due to a significant increase in interest expense from the unwinding of the discount on provisions for pensions and noncurrent personnel-related commitments, to €1,210 million (2021: €198 million). This increase reflected the balance of interest income and expense from plan assets of Bayer Pension Trust e. V. (BPT) (2022: interest expense of €970 million; 2021: interest income of €381 million), which was due to the unfavorable development of the fair value of the assets held by BPT, and interest expense from the unwinding of the discount on pension provisions (2022: €240 million, 2021: €579 million).

The balance of other financial expenses and other financial income was negative, at minus €27 million (2021: €81 million). The decline was mostly attributable to an increase in expenses for personnel-related provisions recognized in nonoperating income, which rose to €171 million (2021: €70 million).

In 2022, the company generated income of €4,957 million before income taxes (2021: €4,391 million). After deduction of €193 million (2021: €281 million) in taxes, net income for the year was €4,764 million (2021: €4,110 million). After allocating €2,382 million of this net income to other retained earnings, the distributable profit amounted to €2,382 million. The Board of Management will propose to the Annual Stockholders' Meeting on April 28, 2023, that, of the distributable profit of €2,382,306,539.65 reported in the annual financial statements for the fiscal year 2022, an amount of €2,357,817,796.80 be used to pay a dividend of €2.40 per share carrying dividend rights and the remaining amount of €24,488,742.85 be allocated to other retained earnings.

5.2 Asset and Financial Position of Bayer AG

A 5.2/1

Bayer AG Summary Statements of Financial Position According to the German Commercial Code

€ million	Dec. 31, 2021	Dec. 31, 2022
ASSETS		
Noncurrent assets		
Intangible assets, property, plant and equipment	436	361
Financial assets	72,038	82,438
	72,474	82,799
Current assets and miscellaneous assets		
Inventories	2,579	2,824
Trade accounts receivable	2,057	2,084
Accounts receivable from subsidiaries	2,001	5,388
Other assets and deferred charges	1,210	738
Cash and cash equivalents, marketable securities	3,774	7,273
	11,621	18,307
Total assets	**84,095**	**101,106**
EQUITY AND LIABILITIES		
Equity	**30,450**	**33,250**
Provisions	**5,051**	**6,947**
Other liabilities and deferrals and accruals		
Bonds and notes, liabilities to banks	14,883	17,559
Trade accounts payable	2,025	2,164
Payables to subsidiaries	29,900	40,579
Remaining liabilities and deferred income	1,786	607
	48,594	60,909
Total equity and liabilities	**84,095**	**101,106**

Development of items in the statement of financial position

As in previous years, Bayer AG's financial position reflected the management function it performs for the Group, particularly with respect to the company's shareholdings and Group financing. The statement of financial position is characterized by these shareholdings and the receivables and payables vis-à-vis Group companies. Total assets increased to €101,106 million in 2022 (2021: €84,095 million).

While noncurrent assets increased to €82,799 million (2021: €72,474 million) overall, intangible assets and property, plant and equipment fell to €361 million (2021: €436 million), mainly due to the discontinuation of development collaborations. Financial assets increased to €82,438 million (2021: €72,038 million). The change in the shareholding structure, as part of an intra-Group contribution in kind through a share swap, generated a book profit of €9,592 million and a corresponding increase in financial assets, with additions through new Bayer Pharma AG shares (€11,680 million) partially offset by the retirement of a shareholding in Bayer Gesellschaft für Beteiligungen mbH (€2,088 million). The increase in other loans was mainly attributable to Bayer-Pensionskasse VVaG and Rheinische Pensionskasse VVaG partially drawing on their effective initial funds (€626 million and €57 million, respectively).

Current and miscellaneous assets rose to €18,307 million (2021: €11,621 million). Inventories rose to €2,824 million (2021: €2,579 million). Accounts receivable from subsidiaries, which mainly comprised loan receivables, increased to €5,388 million (2021: €2,001 million). The decline in other assets to €426 million (2021: €795 million) largely resulted from a decrease in short-term deposits. Holdings of marketable securities increased to €3,652 million (2021: €1,219 million), due particularly to new euro and US dollar investments with indefinite maturities.

Equity rose by €2,800 million to €33,250 million (2021: €30,450 million).

Provisions increased to €6,947 million (2021: €5,051 million). The provisions recognized for the excess of pension liabilities over plan assets increased by €1,763 million to €3,676 million (2021: €1,913 million), particularly due to higher pension trend assumptions and the unfavorable change in the fair value of the collateral assets of Bayer Pension Trust e. V. Provisions for taxes rose to €630 million (2021: €571 million), primarily due to the change in provisions for income taxes not yet finally assessed. Miscellaneous provisions increased to €2,641 million (2021: €2,567 million), of which personnel-related provisions saw a decrease to €1,513 million (2021: €1,777 million). This decline was mainly attributable to lower provisions for variable compensation components of €410 million (2021: €528 million), and to a decrease in provisions for personnel-related restructuring measures to €750 million (2021: €948 million). Other miscellaneous provisions increased to €1,128 million (2021: €790 million), mainly due to a rise in provisions for other restructuring measures to €477 million (2021: €292 million) and provisions for impending losses to €589 million (2021: €415 million).

Liabilities including deferred income – net of deductible receivables – rose to €60,909 million (2021: €48,594 million). Two new hybrid bonds with a total volume of €1,300 million were issued in 2022. Due to the repurchase of an existing bond issued in 2015 that also had a volume of €1,300 million, the total volume of outstanding bonds remained unchanged at €14,550 million. Liabilities to banks increased by €2,676 million to €3,009 million (2021: €333 million). Payables to subsidiaries rose to €40,579 million (2021: €29,900 million). Miscellaneous liabilities decreased to €521 million (2021: €1,596 million), mainly due to the repurchase of commercial paper.

Financial obligations rose to €57,894 million (2021: €48,512 million). Intra-Group financial obligations increased by €7,833 million to €40,239 million. Of this increase, loan liabilities accounted for €203 million, short-term loans for €7,166 million and liabilities from call deposits for €464 million. Liabilities to third parties rose by €1,549 million to €17,655 million (2021: €16,106 million), with the €2,676 million increase in liabilities to banks to €3,009 million partially offset by a €1,131 million decline in commercial paper to €80 million in particular. Net debt increased to €50,621 million (2021: €44,738 million) after deduction of €7,273 million (2021: €3,774 million) in cash and cash equivalents and marketable securities.

All of the own shares acquired in 2022 were subsequently resold, so the transactions were not reflected in equity at the closing date. Details are provided in the stock-based compensation section of the “Equity” chapter in the Notes to the Financial Statements of Bayer AG.

5.3 Forecast, Opportunities and Risks for Bayer AG

Bayer AG is largely exposed to the same opportunities and risks as the Bayer Group. In addition to the following statements, please also refer to the “Report on Future Perspectives and on Opportunities and Risks” section on the Bayer Group.

To improve the Ukrainian population’s situation, a disaster relief fund was established and products such as antibiotics and seed for the cultivation of crops were donated. Together, Russia and Ukraine accounted for about 3% of sales in 2022. Energy provision and global supply chains may also continue to be disrupted as a result of the war. At Bayer AG, energy costs only accounted for about 3% of the total cost of goods sold in 2022. To mitigate the impact of any potential gas shortages and reduce its reliance on natural gas, the company realigned certain processes by partially switching to alternative energy sources and launching programs to save energy. These effects did not have any material financial impact in full-year 2022.

Bayer AG is expected to generate sales of approximately €16 billion and an operating loss of around €2.5 billion in 2023. These figures include Bayer AG’s own operational business and the businesses leased from Bayer CropScience AG and Bayer Pharma AG.

Based on current planning assumptions, the business of Bayer AG will develop positively in 2023. A slight sales decline at Pharmaceuticals for Adalat™ and Xarelto™ will be offset by lower costs. Sales from the intra-Group charging-on of services will increase slightly compared with the 2022 level.

In addition, the earnings of most German subsidiaries are transferred directly to Bayer AG under profit and loss transfer and control agreements. Furthermore, specific intra-Group dividend measures and additional intra-Group restructuring measures ensure the availability of sufficient distributable income. On account of the interdependencies between Bayer AG and its subsidiaries, the outlook for the Bayer Group thus largely also reflects the expectations for Bayer AG. In the coming year, Bayer AG is again expected to report a distributable profit that will enable stockholders to adequately participate in the Bayer Group’s earnings.

5.4 Nonfinancial and Other Disclosures by Bayer AG

Due to the importance of Bayer AG within the Bayer Group, further disclosures are required. This pertains especially to the reporting of significant nonfinancial information, which also became mandatory for the parent company Bayer AG as a result of the CSR Directive Implementation Act, which came into effect in 2017.

The integrated presentation was selected in the management report for the nonfinancial statement to be issued in 2022 pursuant to Section 289b through e of the German Commercial Code (HGB). All disclosures, provisions, described processes and key data contained in the preceding statements in the management report apply to the Bayer Group including Bayer AG. No additional aspects were identified pursuant to the CSR Directive Implementation Act that apply exclusively to Bayer AG.

The following table contains significant nonfinancial and other key data of Bayer AG.

A 5.4/1

Significant Nonfinancial and Other Key Data of Bayer AG

	2021	2022
R&D expenses (€ million)	2,431	2,520
Employees[1]	18,701	18,276
Employees by function[1]		
Production	11,334	11,247
Marketing and distribution	1,043	938
R&D	4,810	4,679
Administration	1,514	1,412
Employees by gender[1]		
Women	6,654	6,512
Men	12,047	11,764
Personnel expenses (€ million)	3,004	3,431
Pension obligations (€ million)	6,840	7,833
Short-term incentive program (€ million)	479	359
Procurement spend (€ billion)	5.0	5.7
Safety		
Recordable Incident Rate (RIR)	0.41	0.37
Lost Time Recordable Incident Rate (LTRIR)	0.31	0.26
Process Safety Incident Rate (PSI-R)	0.24	0.28
Environmental protection		
Total energy consumption (terajoules)	6,188	6,011
Total greenhouse gas emissions (million metric tons of CO_2 equivalents)	0.39	0.39
Water use (million cubic meters)	4.78	6.66
Total waste generated (thousand metric tons)	243	178

[1] Full-time equivalents (FTEs) as of December 31, 2022

B Consolidated Financial Statements

Bayer Group Consolidated Income Statements

B 1

€ million	Note	2021	2022
Net sales	**[6]**	**44,081**	**50,739**
Cost of goods sold		(16,816)	(19,871)
Gross profit		**27,265**	**30,868**
Selling expenses		(12,363)	(14,084)
Research and development expenses		(5,412)	(6,572)
General administration expenses		(2,962)	(2,838)
Other operating income	[7]	1,500	3,039
Other operating expenses	[8]	(4,675)	(3,401)
EBIT[1]		**3,353**	**7,012**
Equity-method income (loss)	[10.1]	49	(150)
Financial income		526	450
Financial expenses		(1,882)	(2,642)
Financial result	**[10]**	**(1,307)**	**(2,342)**
Income before income taxes		**2,046**	**4,670**
Income taxes	[11]	(1,024)	(504)
Income after income taxes		**1,022**	**4,166**
of which attributable to noncontrolling interest	[12]	22	16
of which attributable to Bayer AG stockholders (net income)		**1,000**	**4,150**
€			
Earnings per share	**[13]**		
Basic		1.02	4.22
Diluted		1.02	4.22

[1] For definition, see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Bayer Group Consolidated Statements of Comprehensive Income

B 2

€ million	Note	2021	2022
Income after income taxes		**1,022**	**4,166**
of which attributable to noncontrolling interest	[12]	22	16
of which attributable to Bayer AG stockholders		1,000	4,150
Remeasurements of the net defined benefit liability for post-employment benefit plans	[22]	1,593	2,557
Income taxes	[11]	(391)	(848)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**1,202**	**1,709**
Changes in fair values of equity instruments measured at fair value		111	(120)
Income taxes	[11]	(10)	26
Other comprehensive income from equity instruments measured at fair value		**101**	**(94)**
Other comprehensive income relating to associates accounted for using the equity method		**39**	**9**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**1,342**	**1,624**
Changes in fair values of derivatives designated as cash flow hedges	[27.3]	(143)	(181)
Reclassified to profit or loss		26	463
Income taxes	[11]	54	(43)
Other comprehensive income from cash flow hedges		**(63)**	**239**
Changes in time value of options used as hedging instrument	[17]	(1)	7
Income taxes	[11]	–	(1)
Other comprehensive income from time value of options		**(1)**	**6**
Changes in exchange differences recognized on translation of operations outside the eurozone	[21]	2,415	1,869
Reclassified to profit or loss	[21]	(126)	(38)
Other comprehensive income from exchange differences	**[21]**	**2,289**	**1,831**
Other comprehensive income relating to associates accounted for using the equity method		**(6)**	**3**
Other comprehensive income that may be reclassified subsequently to profit or loss		**2,219**	**2,079**
Total other comprehensive income[1]		**3,561**	**3,703**
of which attributable to noncontrolling interest		13	(9)
of which attributable to Bayer AG stockholders		3,548	3,712
Total comprehensive income		**4,583**	**7,869**
of which attributable to noncontrolling interest		35	7
of which attributable to Bayer AG stockholders		4,548	7,862

[1] Other comprehensive income is recognized outside profit or loss in equity.

Bayer Group Consolidated Statements of Financial Position

B 3

€ million	Note	Dec. 31, 2021	Dec. 31, 2022
Noncurrent assets			
Goodwill	[14]	40,106	39,648
Other intangible assets	[14]	26,258	24,183
Property, plant and equipment	[15]	12,688	13,674
Investments accounted for using the equity method	[16]	629	893
Other financial assets	[17]	2,026	2,049
Other receivables	[20]	1,376	1,065
Deferred taxes	[11]	4,580	5,605
		87,663	**87,117**
Current assets			
Inventories	[18]	11,314	13,636
Trade accounts receivable	[19]	10,047	10,312
Other financial assets	[17]	3,342	5,208
Other receivables	[20]	1,709	1,923
Claims for income tax refunds		1,526	1,507
Cash and cash equivalents		4,564	5,171
Assets held for sale	[5.3]	76	3
		32,578	**37,760**
Total assets		**120,241**	**124,877**
Equity	**[21]**		
Capital stock		2,515	2,515
Capital reserves		18,261	18,261
Other reserves		12,244	17,997
Equity attributable to Bayer AG stockholders		**33,020**	**38,773**
Equity attributable to noncontrolling interest		148	153
		33,168	**38,926**
Noncurrent liabilities			
Provisions for pensions and other post-employment benefits	[22]	7,175	4,388
Other provisions	[23]	8,776	8,591
Refund liabilities	[6]	283	10
Contract liabilities	[6]	770	561
Financial liabilities	[24]	36,481	33,791
Income tax liabilities		1,601	1,672
Other liabilities	[26]	1,653	1,127
Deferred taxes	[11]	931	727
		57,670	**50,867**
Current liabilities			
Other provisions	[23]	6,823	5,092
Refund liabilities	[6]	4,564	5,583
Contract liabilities	[6]	4,052	4,163
Financial liabilities	[24]	4,391	7,861
Trade accounts payable	[25]	6,792	7,545
Income tax liabilities		686	1,056
Other liabilities	[26]	2,095	3,784
		29,403	**35,084**
Total equity and liabilities		**120,241**	**124,877**

Bayer Group Consolidated Statements of Changes in Equity

B 4

€ million	Capital stock	Capital reserves	Retained earnings incl. net income	Exchange differences	Fair-value measurement of equity instruments
Jan. 1, 2021	**2,515**	**18,261**	**13,057**	**(3,581)**	**117**
Total comprehensive income					
Income after income taxes			1,000		
Other comprehensive income			1,203	2,270	140
Miscellaneous other changes			136	(1)	(45)
Equity transactions with owners					
Dividend payments			(1,965)		
Other changes			(86)		
Dec. 31, 2021	**2,515**	**18,261**	**13,345**	**(1,312)**	**212**
Total comprehensive income					
Income after income taxes			4,150		
Other comprehensive income			1,709	1,843	(85)
Miscellaneous other changes			138		(15)
Equity transactions with owners					
Dividend payments			(1,965)		
Other changes			(144)		
Dec. 31, 2022	**2,515**	**18,261**	**17,233**	**531**	**112**

B 4 (continued)

€ million	Cash flow hedges	Other reserves[1]	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
Jan. 1, 2021	**152**	**2**	**30,523**	**152**	**30,675**
Total comprehensive income					
Income after income taxes			1,000	22	1,022
Other comprehensive income	(63)	(2)	3,548	13	3,561
Miscellaneous other changes	(90)				
Equity transactions with owners					
Dividend payments			(1,965)	(30)	(1,995)
Other changes			(86)	(9)	(95)
Dec. 31, 2021	**(1)**	**–**	**33,020**	**148**	**33,168**
Total comprehensive income					
Income after income taxes			4,150	16	4,166
Other comprehensive income	245		3,712	(9)	3,703
Miscellaneous other changes	(123)				
Equity transactions with owners					
Dividend payments			(1,965)	(20)	(1,985)
Other changes			(144)	18	(126)
Dec. 31, 2022	**121**	**–**	**38,773**	**153**	**38,926**

[1] Other reserves include the revaluation reserve of €0 million (2021: €0 million).

Bayer Group Consolidated Statements of Cash Flows

B 5

€ million	Note	2021	2022
Income after income taxes		1,022	4,166
Income taxes		1,024	504
Financial result		1,307	2,342
Income taxes paid		(2,159)	(2,034)
Depreciation, amortization and impairment losses (loss reversals)		3,056	6,503
Change in pension provisions		(295)	(129)
(Gains) losses on retirements of noncurrent assets		(217)	(1,692)
Decrease (increase) in inventories		(173)	(2,170)
Decrease (increase) in trade accounts receivable		(61)	269
(Decrease) increase in trade accounts payable		854	612
Changes in other working capital, other noncash items		731	(1,278)
Net cash provided by (used in) operating activities		**5,089**	**7,093**
Cash outflows for additions to property, plant, equipment and intangible assets		(2,611)	(2,949)
Cash inflows from sales of property, plant, equipment and other assets		373	1,130
Cash inflows from (outflows for) divestments less divested cash		(6)	2,287
Cash inflows from noncurrent financial assets		437	32
Cash outflows for noncurrent financial assets		(400)	(1,182)
Cash outflows for acquisitions less acquired cash		(1,340)	(89)
Interest and dividends received		137	218
Cash inflows from (outflows for) current financial assets		4,265	(1,828)
Net cash provided by (used in) investing activities		**855**	**(2,381)**
Capital contributions (redemptions)		–	(10)
Dividend payments		(1,993)	(1,985)
Issuances of debt		6,592	6,631
Retirements of debt		(9,044)	(7,605)
Interest paid including interest-rate swaps		(1,227)	(1,296)
Interest received from interest-rate swaps		27	45
Net cash provided by (used in) financing activities		**(5,645)**	**(4,220)**
Change in cash and cash equivalents due to business activities	[31]	**299**	**492**
Cash and cash equivalents at beginning of year		**4,191**	**4,564**
Change in cash and cash equivalents due to changes in scope of consolidation		39	3
Change in cash and cash equivalents due to exchange rate movements		35	112
Cash and cash equivalents at end of year		**4,564**	**5,171**

Notes to the Consolidated Financial Statements of the Bayer Group

1. General information

Bayer Aktiengesellschaft (Bayer AG), which is entered in the commercial register of the Local Court of Cologne, Germany, HRB 48248, is a global enterprise based in Germany. Its registered office is at Kaiser-Wilhelm-Allee 1, 51368 Leverkusen. The material business activities of the Bayer Group take place in the life science fields of healthcare and nutrition and are reported on via the Crop Science, Pharmaceuticals and Consumer Health segments. The activities of each segment are outlined in Note [4].

The declarations required under Section 161 of the German Stock Corporation Act concerning the German Corporate Governance Code have been issued and made available to stockholders via the Bayer website (https://www.bayer.com/en/investors/corporate-governance).

The Board of Management of Bayer AG prepared the consolidated financial statements of the Bayer Group as of December 31, 2022, at its meeting on February 17, 2023, submitted the prepared statements to the Audit Committee and the Supervisory Board for examination and approval, and released them for publication.

2. Effects of new financial reporting standards

Financial reporting standards applied for the first time in 2022

The following amendments to financial reporting standards were applied for the first time as of January 1, 2022. The amendments had no material impact on the Group's financial position or results of operations.

B 2/1

Financial Reporting Standards Amendments With No Material Impact

Amendments to standards		Mandatory application
IFRS 3	Amendments to IFRS 3 Business Combinations: Reference to the Conceptual Framework	Jan. 1, 2022
IAS 16	Amendments to IAS 16 Property, Plant and Equipment: Proceeds before Intended Use	Jan. 1, 2022
IAS 37	Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts — Cost of Fulfilling a Contract	Jan. 1, 2022
	Annual Improvements to IFRS Standards 2018–2020 Cycle	Jan. 1, 2022

Published financial reporting standards that have not yet been applied

The IASB has issued the following amendments to standards and a new standard. Their application was not yet mandatory for the 2022 fiscal year. In some cases the European Union had not yet completed the endorsement process.

Therefore the following standards have not yet been applied by Bayer:

B 2/2

Published Financial Reporting Standards That Have Not Yet Been Applied

Amendments to standards/new standards		Mandatory application	Anticipated effects
IFRS 16	Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback	Jan. 1, 2024	Effects currently being evaluated
IFRS 17	Insurance Contracts, including amendments to IFRS 17 and amendments to IFRS 17 Insurance Contracts: Initial Application of IFRS 17 and IFRS 9 – Comparative Information	Jan. 1, 2023	No material effects expected
IAS 1	Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-current, including Deferral of Effective Date, as well as Noncurrent Liabilities with Covenants	Jan. 1, 2024	Effects currently being evaluated
IAS 1	Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting Policies	Jan. 1, 2023	No material effects expected
IAS 8	Amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates	Jan. 1, 2023	No material effects expected
IAS 12	Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction	Jan. 1, 2023	No material effects expected

3. Reporting policies, methods and critical accounting estimates

The consolidated financial statements as of December 31, 2022, of Bayer AG and its subsidiaries (Bayer Group) were prepared according to the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), London, United Kingdom, and the interpretations of the IFRS Interpretations Committee (IFRS IC) as endorsed and adopted by the European Union as at December 31, 2022. The applicable further requirements of Section 315e of the German Commercial Code were also taken into account.

The consolidated financial statements were drawn up in euros. Except where otherwise indicated, amounts are stated in millions of euros (€ million) and rounded to the nearest million. Adding the individual figures may therefore not always result in the exact total given.

In the income statement and statement of comprehensive income, statement of financial position, statement of cash flows and statement of changes in equity, certain items are combined for the sake of clarity. These are explained in the Notes. The income statement was prepared using the cost-of-sales method. Assets and liabilities are classified by maturity. They are regarded as current if they mature within one year or within the normal business cycle, which usually does not exceed one year, or are held for sale. The normal business cycle is defined for this purpose as beginning with the procurement of the resources necessary for the production process and ending with the receipt of cash or cash equivalents as consideration for the sale of the goods or services produced in that process. Inventories and trade accounts receivable and payable are always presented as current items. Deferred tax assets and liabilities, and pension provisions are always presented as noncurrent items.

The financial statements of the individual companies consolidated are prepared according to uniform recognition and measurement methods. The consolidated financial statements are based on the principle of the historical cost of acquisition, construction or production, with the exception of the items reflected at fair value, such as equity instruments held, debt instruments held that do not solely comprise principal and interest payments, and derivatives and liabilities designated at fair value through profit or loss.

In preparing the consolidated financial statements, management has to make certain assumptions and estimates that may substantially impact the presentation of the Group's financial position and/or results of operations. Such estimates, assumptions or the exercise of discretion mainly relate to the useful life of noncurrent assets, the discounted cash flows used for impairment testing and purchase price allocations, and the recognition of provisions, including those for litigation-related expenses, pensions and other benefits, taxes, environmental compliance and remediation costs, product liability and guarantees, as well as the recognition of refund liabilities.

Essential estimates and assumptions that may affect reporting in the various item categories of the financial statements are described in the following sections of this Note. Estimates are based on historical experience and other assumptions that are considered reasonable under given circumstances. They are continually reviewed but may vary from the actual values.

New or revised financial reporting standards often contain options regarding the first-time application of new recognition and measurement methods. The income statement for the previous year and the opening statement of financial position for that year may be adjusted depending on the option Bayer exercises. For further information on the standards applied for the first time as of January 1, 2022, see Note [2].

Consolidation

The consolidated financial statements include subsidiaries, joint operations, joint ventures and associates. The financial statements of the individual companies consolidated are prepared as of the closing date of the Group financial statements. If financial statements of joint ventures and associates have a different closing date, adjustments are made for material transactions or events between that date and the closing date of the consolidated financial statements of the Bayer Group.

Subsidiaries are companies over which Bayer AG is currently able to exercise power by virtue of existing rights. Power means the ability to direct the relevant activities that significantly affect a company's profitability. Control is therefore only deemed to exist if Bayer AG is exposed, or has rights, to variable returns from its involvement with a company and has the ability to use its power over that company to affect the amount of that company's returns. The ability to control another company generally derives from Bayer AG's direct or indirect ownership of a majority of the voting rights. In the case of structured entities, however, control is based on contractual agreements. Inclusion of an entity's accounts in the consolidated financial statements begins when the Bayer Group is able to exercise control over the entity and ceases when it is no longer able to do so.

A joint operation or a joint venture exists where the Bayer Group controls an entity's activities jointly with a third party on the basis of a contractual agreement and decisions about the relevant activities require the unanimous consent of the parties sharing control. The parties to a joint operation have rights to the assets, and obligations for the liabilities, relating to the arrangement. The Bayer Group recognizes its share of the assets, liabilities, revenues and expenses in the consolidated financial statements in accordance with its rights and obligations. The parties jointly controlling a joint venture have rights to the net assets of the arrangement. Joint ventures are accounted for using the equity method.

Associates are companies over which Bayer Group companies hold a voting interest of between 20% and 50% or for which there are relevant indicators of significant influence. They also are accounted for using the equity method. The carrying amount of a company accounted for using the equity method is adjusted monthly by the change in its equity corresponding to Bayer's percentage interest in the company. Differences arising upon first-time inclusion using the equity method are accounted for according to full-consolidation principles. Bayer's share of changes – recognized in profit or loss – in these companies' equity, including impairment losses recognized on goodwill, are reflected in equity-method income/loss. Gains and losses arising from the remeasurement of investments accounted for using the equity method due to Bayer obtaining control or losing significant influence are also reflected in equity-method income/loss. Gains and losses from the sale of investments accounted for using the equity method are recognized in equity-method income/loss.

Interests in subsidiaries, joint ventures and associates that do not have a material impact on the Group's financial position or results of operations, either individually or in aggregate, are not consolidated but recognized as financial investments in equity instruments.

Foreign currency translation

The assets and liabilities of the subsidiaries that do not use the euro as their functional currency are translated into euros at closing rates. All changes occurring during the year and all income and expense items and cash flows are translated into euros at average monthly rates except in hyperinflationary economies, where they are always translated at the respective closing rates. Equity components are translated at the historical exchange rates prevailing at the respective dates of their first-time recognition in Group equity. The exchange differences arising between the resulting amounts and those obtained by translating at closing rates are recognized outside profit or loss as "Exchange differences on translation of operations outside the eurozone" (in other comprehensive income) or presented as "Exchange differences" in the tables in the Notes. When a company is deconsolidated, such exchange differences are reclassified from equity to profit or loss and recognized in other operating income/expenses. When a net investment in a foreign operation is reduced but control is retained, exchange differences are reclassified from other comprehensive income to profit or loss and recognized on a prorated basis under exchange gains or losses in other financial income and expenses within the financial result.

The exchange rates for major currencies against the euro varied as follows:

B 3/1

Exchange Rates for Major Currencies

		BRL	CAD	CNY	GBP	JPY	RUB	USD
		Brazil	**Canada**	**China**	**UK**	**Japan**	**Russia**	**USA**
Closing rate	2021	6.31	1.44	7.20	0.84	130.41	85.35	1.13
	2022	**5.64**	**1.44**	**7.37**	**0.89**	**140.72**	**77.92**	**1.07**
Average rate	2021	6.37	1.48	7.63	0.86	129.82	87.11	1.18
	2022	**5.42**	**1.37**	**7.08**	**0.85**	**137.76**	**70.22**	**1.05**

The following companies have a hyperinflationary functional currency:

B 3/2

Application of IAS 29 (Financial Reporting in Hyperinflation Economies)

Company name	Place of business	Applied since
Bayer S. A.	Buenos Aires, Argentina	July 1, 2018
Bayer Türk Kimya Sanayii Limited Sirketi	Istanbul, Turkey	April 1, 2022
Monsanto Gida Ve Tarim Ticaret Ltd Sirketi	Istanbul, Turkey	April 1, 2022

Hyperinflationary accounting is applied for these companies pursuant to IAS 29. On the date of first-time application, the adjustment of the carrying amounts of nonmonetary assets and liabilities was recognized in equity based on the general price index. The effects in initial accounting are immaterial for the Group. Gains and losses incurred from the current hyperinflation of nonmonetary assets and liabilities and of equity are recognized in the income statement as other operating income and expenses.

Foreign currency measurement

Monetary items, such as receivables and liabilities, that are denominated in currencies other than a Group company's functional currency are measured at closing rates. Related exchange differences are recognized as exchange gains or losses under other financial income or expenses.

Sales, refund liabilities, right-of-return assets and contract liabilities

All revenues derived from the selling of products, rendering of services or from licensing agreements are recognized as sales. Revenues are based on customer contracts and the performance obligations contained therein, which are individually identified and may be presented separately for the purpose of revenue recognition. Revenues are recognized in profit or loss when or as soon as the entity transfers control of goods or services to a customer either over time or at a point in time. Control lies with the customer if the customer can independently determine the use of, and consume the benefit derived from, a product or service. Revenues from product deliveries are recognized at a point in time based on an overall assessment of the existence of a right to payment, the allocation of ownership rights, the transfer of physical possession, the transfer of risks and rewards, and acceptance by the customer. In the case of product deliveries undertaken by the Bayer Group, the transfer of risks and rewards and the right to determine the product shipment destination are particularly important. Depending on the transfer of control, revenues from services are recognized either at a point in time or over the period of time when services are rendered and in accordance with a reasonable measure of progress.

Net sales are limited to the amount the Bayer Group expects to receive for the fulfillment of performance obligations. Payment components to be withheld for third parties are deducted. Sales are therefore reduced by sales taxes and by actual and expected sales deductions resulting from rebates, discounts and bonuses. Furthermore, sales are reduced by the amount of the refund liability for expected returns of defective goods or of saleable products that may be returned under contractual arrangements, with this reduction taking place at the date of revenue recognition or when a reliable estimate can be made. Refund liabilities are recognized for expected sales deductions and product returns. Sales deductions and refund liabilities are estimated primarily on the basis of historical experience, specific contractual terms, price information and thus future expectations of sales development. The underlying assumptions applied for refund liabilities are reviewed at each closing date and revised where necessary.

Assets from expected product returns are recognized in inventories as right-of-return assets at the previous carrying amounts less any recovery and processing costs and potential impairments. For unilaterally fulfilled customer contracts where more than one year passes between performance and payment, significant financing components are accounted for separately based on their present values and the subsequent unwinding of the discount. The underlying discount rate takes into account the individual credit risk of the contracting party that receives the financing. Revenues from contracts involving noncash consideration, such as exchange transactions, are measured at the fair value of the assets received or the right to receive them.

Some of the Bayer Group's revenues are generated on the basis of licensing agreements under which third parties have been granted the right to use or access products and technologies. A right-to-use license is characterized by the underlying technology remaining essentially unchanged over the period for which the rights are granted. With a right-to-access license, by contrast, the customer's interest is directed toward the consistent further development of that intellectual property. Revenues from right-to-use licenses are recognized at a specific point in time, while those from right-to-access licenses are recognized over time according to the underlying measure of progress. Milestone payments related to right-to-access licenses are allocated to satisfied and unsatisfied portions of the underlying performance obligation, as applicable. Consideration relating to already satisfied obligations is recognized as catch-up adjustments to revenue. Payment elements still to be earned are deferred as contract liabilities. Sales- or usage-based royalties

agreed in connection with outlicensing arrangements are only recognized if the sale or the usage is sufficiently verified and the underlying performance obligation has been fulfilled.

In the Crop Science segment, Bayer conducts barter transactions in certain geographies to grant its customers longer payment terms while at the same time reducing the credit risk. For example, payment may be made in the form of a subsequent delivery of soybeans or corn, or crops may be pledged as collateral. Any commodity price risk that Bayer is exposed to as a result is hedged using derivatives. Changes in the fair value of these derivatives are recognized in other operating income and expenses. If Bayer assumes control of goods (such as soybeans) instead of receiving a cash payment, their resale is accounted for in other operating income, and their derecognition in other operating expenses, since transactions of this nature do not form part of normal business operations.

Research and development expenses

Research expenses are recognized through profit or loss. Development expenses are only capitalized as internally generated intangible assets if the recognition criteria of IAS 38 (Intangible Assets) are met. These include sufficient certainty that the development activity will give rise to future financial cash flows that also cover the respective development expenses. Since our own development projects are often subject to regulatory approval procedures and other uncertainties, the conditions for the capitalization of costs incurred before receipt of approvals generally are not satisfied. Development costs for internal software projects can be capitalized. Costs in connection with the implementation of cloud applications are usually recognized through profit or loss. If the definitions and recognition criteria of IAS 38 are met, which can be the case with interfaces, for example, the costs are capitalized as an intangible asset. Capitalized development expenses are recognized at the cost of generation and amortized over their expected useful lives. Impairment testing is also performed on an annual or event-driven basis.

Income taxes

Income taxes comprise the taxes levied on taxable income in the individual countries along with changes in deferred tax assets and liabilities that are recognized in profit or loss. The income taxes recognized are reflected at the amounts likely to be payable under the statutory regulations in force, or already enacted in relation to future periods, at the end of the reporting period. Complex tax regulations may give rise to uncertainties with respect to their interpretation and the amounts and timing of future taxable income. Given the wide range of international business relationships and the long-term nature and complexity of existing contractual agreements, differences arising between the actual results and the assumptions made, or future changes to such assumptions, could necessitate adjustments to tax income and expense in future periods. Liabilities to tax authorities that are uncertain as to their amount and the probability of their occurrence are recognized as tax liabilities based on reasonable estimates. The amounts recognized are based on various factors, such as experience with previous tax audits and differing legal interpretations by the taxable entity and the responsible tax authority.

In compliance with IAS 12 (Income Taxes), deferred taxes are recognized for temporary differences between the carrying amounts of assets and liabilities in the statement of financial position prepared according to IFRS and their tax bases. Deferred taxes are also recognized for loss carryforwards, interest carryforwards and tax credits that are likely to be usable. Deferred tax assets relating to deductible temporary differences, tax credits, loss carryforwards and interest carryforwards are recognized where it is probable that taxable income or sufficiently taxable temporary differences will be available in the future to enable them to be used. Deferred tax liabilities are recognized on temporary differences taxable in the future. Deferred taxes are calculated at the rates which – on the basis of the statutory regulations in force, or already enacted in relation to future periods, as of the closing date – are expected to apply in the individual countries at the time of realization. Deferred tax assets and deferred tax liabilities are offset if Bayer has a legally enforceable right to set off current tax assets against current tax liabilities and these are levied by the same taxation authority. Material effects of changes in tax rates or tax law on deferred tax assets and liabilities are generally accounted for in the period in which the changes are enacted. Such effects are recognized in profit or loss except where they relate to deferred taxes that were recognized outside profit or loss, in which case they are recognized in other comprehensive income or directly in equity.

Deferred and current taxes are recognized in profit or loss unless they relate to items recognized outside profit or loss in other comprehensive income, in which case they, too, are recognized in other comprehensive income or directly in equity. The probability that deferred tax assets resulting from temporary differences, loss carryforwards or interest carryforwards can be used in the future is the subject of forecasts by the individual consolidated companies regarding their future earnings situation and other parameters. Deferred tax liabilities are recognized on planned dividend payments by subsidiaries. Where no dividend payment is planned for the foreseeable future, no deferred tax liability is recognized on the difference between the proportionate net assets according to IFRS and the tax base of the investment in the subsidiary.

Goodwill

In a business combination, goodwill is capitalized at the acquisition date (see “Acquisition accounting”). Goodwill is not amortized but is tested for impairment at least annually or when there is an indication of possible impairment.

Other intangible assets

Other intangible assets are capitalized at the acquisition date at their cost of acquisition or generation. Those with a definite useful life are amortized on a straight-line basis over the following periods, except where their actual depletion demands a different amortization pattern.

B 3/3

Useful Lives of Other Intangible Assets	
Patents and technologies	8 to 30 years
Trademarks	10 to 35 years
Marketing and distribution rights, customer relationships	5 to 30 years
Production rights	14 to 19 years
Other rights	2 to 12 years

The expected useful lives of such assets and the amortization patterns are determined based on estimates of the period for which they will generate cash flows. In addition, a review is conducted as of each closing date to ascertain whether there are any indications of impairment, and impairment testing may then potentially be performed.

Should inlicensing result in consideration for the acquisition of intellectual property, this is capitalized as an intangible asset. If the transaction also includes research and development activities, the share of consideration attributable to these activities is deferred and recognized through profit and loss according to the utilization thereof.

Property, plant and equipment

Property, plant and equipment is initially recognized at the cost of acquisition or construction plus the estimated amounts of any redevelopment or decommissioning costs. Thereafter it is depreciated by the straight-line method over its expected useful life, except where use-related depreciation is more appropriate.

B 3/4

Useful Life of Property, Plant and Equipment	
Buildings	5 to 50 years
Plant installations and machinery	4 to 40 years
Furniture, fixtures and other equipment	2 to 15 years

A review is conducted as of each closing date to ascertain whether there are any indications of impairment. When assets are sold, closed down or scrapped, the difference between the net proceeds and the net carrying amount of the assets is recognized as a gain or loss in other operating income or expenses, respectively.

Grants and subsidies from third parties that serve to promote investment are reflected in the statement of financial position under other liabilities and amortized to income over the useful lives of the respective investments in property, plant or equipment, or in line with the terms of the grant or subsidy.

Investment property comprises land and buildings not being used for operational or administrative purposes. It is measured using the cost model. The fair value of this property reported in the Notes is primarily determined on the basis of internal valuations using the income approach, while that of undeveloped sites is mainly calculated using the market comparison approach.

Impairment testing

An impairment test is performed if there is an indication of possible impairment for an intangible asset, an item of property, plant and equipment, or a cash-generating unit or unit group to which goodwill has been allocated. Other intangible assets with an indefinite useful life (such as the Bayer Cross trademark), intangible assets that are not yet available for use (such as R&D projects) and cash-generating units or unit groups to which goodwill has been allocated are additionally tested annually for impairment.

A cash-generating unit is the smallest identifiable group of assets generating cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bayer Group primarily regards product families as well as seeds and the corresponding traits as cash-generating units and subjects them to impairment testing. Goodwill is tested for impairment at the reporting segment level.

Impairment testing involves comparing the carrying amount of each cash-generating unit or unit group, intangible asset or item of property, plant and equipment to the recoverable amount, which is the higher of its fair value less costs of disposal or value in use. If the carrying amount exceeds the recoverable amount, an impairment loss must be recognized for the difference. In this case an impairment loss is first recognized on any goodwill allocated to the cash-generating unit or unit group. Any remaining impairment loss is allocated among the other noncurrent nonfinancial assets in proportion to their carrying amounts, unless this is prohibited under any other rule. The resulting expense is reflected in the operating expense item in which the depreciation or amortization of the respective asset is recognized. The same applies to income from impairment loss reversals. Impairment losses recognized on goodwill are included in other operating expenses.

The recoverable amount is generally determined on the basis of the fair value less costs of disposal, taking into account the present value of the future net cash flows as market prices for the individual units are not normally available. These are forecasted on the basis of the Bayer Group's current planning, which encompasses a planning horizon of up to three years and includes exchange rate assumptions at the time of planning. Forecasting involves making assumptions, especially regarding future selling prices, sales volumes, costs, market growth rates and economic cycles. These assumptions are based on internal estimates along with external market studies. Where the recoverable amount is the fair value less costs of disposal, measurement is undertaken from the viewpoint of an independent market participant. Where the recoverable amount is the value in use, the object of valuation is measured as currently used. In either case, net cash flows beyond the planning period are determined on the basis of long-term business expectations using individually calculated growth rates. The fair value less costs of disposal is determined on the basis of unobservable inputs (Level 3).

The net cash inflows are discounted at a rate equivalent to the weighted average cost of equity and debt capital. To allow for the different risk and return profiles of the Bayer Group's principal businesses, the after-tax cost of capital is calculated separately for each reporting segment and certain cash-generating units and unit groups while taking into account regional focus areas, and a segment-specific capital structure is defined by benchmarking against comparable companies in the same industry sector. The cost of equity corresponds to the return expected by stockholders, while the cost of debt is based on the

conditions on which comparable companies can obtain long-term financing. Both components are derived from capital market information.

Although the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and industry developments, and estimates of the discounted future cash flows are believed to be appropriate, changes in assumptions or circumstances could require changes in the carrying amounts. This could lead to the recognition of additional impairment losses in the future or – except in the case of goodwill – to reversals of previously recognized impairment losses.

Leases

A lease is established by a contract that conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

As lessee, Bayer generally recognizes the present value of the future lease payments as a financial liability. The lease payments are split into principal and interest portions according to the effective-interest method. In line with this and taking into account any further cost components, the right-of-use asset (the asset that reflects the right to use the underlying asset) is capitalized under property, plant and equipment at the inception of the lease. The right-of-use asset is recognized at amortized cost and depreciated by the straight-line method.

Use is made of the recognition exemptions for certain leases in which the underlying assets are of low value and also for short-term leases. The lease payments under these contracts are recognized as other operating expenses on a straight-line basis over the lease term.

Bayer exercises the accounting policy option under IFRS 16 (Leases) available for lessees not to apply this standard to leases of intangible assets.

For certain contracts with both lease and nonlease components, Bayer as lessee applies the practical expedient not to separate these components but to recognize them collectively as a single lease component.

Payments under intra-Group leases are generally presented as expenses or income in segment reporting in line with the internal reporting system.

Lease contracts in which Bayer acts as the lessor and substantially all the risks and rewards of utilizing the underlying asset are transferred to the lessee are classified as finance leases. The net investment in the lease is recognized as a receivable. In the case of operating leases where Bayer is the lessor, the leased assets continue to be capitalized, and the lease payments are recognized in income on a straight-line basis over the lease term.

Financial assets

Financial assets comprise receivables, acquired equity and debt instruments, cash and cash equivalents, and derivatives with positive fair values. A financial asset is initially recognized on the settlement date at fair value, plus transaction costs in most cases.

The classification and measurement of financial assets is based in each case on the business model and the characteristics of the cash flows. Trade accounts receivable and other debt instruments are measured at amortized cost using the effective-interest method or at fair value through profit or loss (such as money market funds and effective initial funds). Equity instruments are generally held for medium- to long-term strategic purposes and are therefore measured at fair value through other comprehensive income. Otherwise they are measured at fair value through profit or loss, like for example the shares in Century Therapeutics, Inc., United States, and Pyxis Oncology, Inc., United States.

Under the simplified impairment model, a default on receivables measured at amortized cost using the effective-interest method that is expected over the respective term (stage 2 of the impairment model) is determined for trade accounts receivable based on portfolio-specific default rates. These expected default rates are mainly based on the average defaults on receivables in recent years. These default rates are adjusted during the year for the respective customer portfolio if a significant change in the default rate is expected in the future. In determining the expected default rates, we take into account the business model, the respective customer and the economic environment of the geographic region. This is achieved by applying specific default rates for the individual Group companies and, in the case of smaller companies, making a standard calculation for countries with a comparable credit risk. Further differentiation is achieved by taking into account the segments' various customer groups. Throughout the Bayer Group, customers are also assigned to risk classes with different expected default rates depending on their individual credit risk assessments.

Where action such as insolvency or comparable proceedings has been initiated against a defaulter or other objective indications exist that receivables are impaired (such as a considerable worsening of creditworthiness or a financial restructuring), the receivables are individually tested for impairment (stage 3 of the impairment model). In addition, all receivables more than 90 days past due are individually tested for impairment during the year.

For other financial assets measured at amortized cost, the expected credit losses that would result from potential default events within the next 12 months – as determined using the Monte Carlo simulation method – are recognized through profit or loss on first-time recognition and on subsequent measurement (stage 1 of the impairment model). In the event of a significant increase in the default risk, which is defined as a more than 0.25% increase in the probability of default with respect to the default risk on first-time recognition, assets are reclassified to stage 2 of the impairment model, taking into account the expected credit losses over the respective asset maturities. An impairment loss is recognized if there are objective indications of an impairment.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets were transferred together with all material risks and benefits. Receivables are also derecognized if they have been finally assessed as irrecoverable and we have ceased efforts to collect them following the completion of insolvency proceedings, for example. Receivables are not derecognized while they remain subject to enforcement.

Inventories

Inventories are recognized at their cost of acquisition or production (production-related full costs) – calculated by the weighted-average method – or at their net realizable value, whichever is lower.

Cash and cash equivalents

Cash includes cash in hand, checks received and balances with banks and companies. Cash equivalents are financial investments with maximum maturities of three months from the acquisition date that are subject to no more than insignificant fluctuations in value and will give rise to predefined cash inflows. Cash and cash equivalents are measured at amortized cost.

Provisions for pensions and other post-employment benefits

Within the Bayer Group, post-employment benefits are provided under defined contribution and/or defined benefit plans. In the case of defined contribution plans, the company pays contributions to publicly or privately administered pension plans on a mandatory, contractual or voluntary basis. Once the contributions have been paid, the company has no further payment obligations. The regular contributions constitute operating expenses and as such are included in the respective income statement items.

All remaining commitments under pension and other post-employment benefit plans are measured in terms of the defined benefit obligation (DBO) using the projected unit credit method, with entitlements already earned being measured at the present value of the DBO. This is based on factors such as expected future salary and pension increases, changes in healthcare costs, mortality rates and beneficiary structure. The uniform discount rates are based on the yields of high-quality bond portfolios (AA-rated corporate bonds) in specific currencies, extrapolated where necessary to cover the future period for which sufficiently accurate bond yields are not available. Where there is insufficient empirical data on corporate bond yields with longer-term residual maturities, the yield structure is derived from government bond yields plus spread to reflect the higher risk of default. The bond portfolios consist of bonds with weighted residual maturities approximately equal to the duration of the expected disbursements from the pension plans. The pension service cost and the net interest on the net liability are determined on the basis of the assumptions as of the previous closing date.

For funded obligations, the net liability is determined by deducting the fair value of plan assets. The obligations and plan assets are measured at regular intervals. Where no quoted prices for plan assets exist in active markets, their fair values are determined by applying the usual measurement methods and on the basis of freely accessible data such as interest rate curves and credit spreads. The net defined benefit asset is recognized in other receivables.

Current and past service cost and effects of plan settlements are recognized in operating income. The net interest on the net liability is reflected in the financial result under other financial income and expenses. The effects of remeasurements of the net defined benefit liability are reflected in the statement of comprehensive income as other comprehensive income. They consist of actuarial gains and losses, the return on plan assets and changes in the effects of the asset ceiling, less the amounts included in net interest and related deferred taxes.

Other provisions

Other provisions are recognized for present legal and constructive obligations arising from past events that will probably give rise to a future outflow of resources, provided that a reliable estimate can be made of the amount of the obligations. They are established at the present value of the expected future cash outflows and recognized in the respective operating expense items. The interest cost is reflected in the financial result under other financial income and expenses. If the projected obligation declines as a result of a change in the estimate, the provision is reversed by the corresponding amount and the resulting income recognized in the operating expense item(s) in which the original charge was recognized.

Costs arising from obligations to decommission or dismantle property, plant and equipment are included as a component of the acquisition or construction costs for property, plant or equipment if they can be reliably estimated, and are covered by provisions. If changes in the estimates require the provisions to be adjusted, the carrying amounts of the respective assets are reduced or increased accordingly.

Estimating the future costs for environmental protection and similar measures involves, in particular, uncertainties with regard to the applicable laws and regulations and the actual local conditions. Significant factors in estimating the costs include previous experiences in similar cases, expert opinions, current costs and new developments affecting costs, management's interpretation of current environmental regulations, the financial position of third parties that may become obligated to participate in any remediation costs on the basis of joint liability, and the remediation methods likely to be deployed. Changes in these assumptions could impact future reported results of the Group. Taking into consideration the experience gained to date and the knowledge and circumstances as of the closing date, provisions are believed to be adequate. However, material additional costs could be incurred beyond the amounts accrued that result in additional expenses in subsequent periods.

Provisions for employee termination benefits are established where the amounts of severance payments, additional pension plan modules to be granted or other benefits can be reliably estimated. However, material additional costs could be incurred beyond the amounts accrued that result in additional expenses in subsequent periods.

Obligations arising from stock-based programs that involve cash settlement pursuant to IFRS 2 (Share-based Payment) are covered by provisions in the amount of the fair value of the obligations existing as of the closing date. All resulting valuation adjustments are recognized in profit or loss.

Provisions for litigations are established under certain conditions in the case of legal risks. Litigations and other judicial proceedings often raise complex issues and are subject to many uncertainties and complexities including, but not limited to, the facts and circumstances of each particular case, the jurisdiction in which each suit is brought and differences in applicable law. The outcome of any current or future proceedings cannot normally be predicted. It is particularly difficult to assess the likely outcomes of class actions for damages or mass compensation claims in the United States, which may give rise to significant financial risks for the Bayer Group. As a result of a final judgment in court proceedings, regulatory decisions or the conclusion of a settlement, the Bayer Group may incur charges for which no accounting measures have yet been taken for lack of reasonable estimability or which exceed presently established provisions and the insurance coverage.

The Bayer Group considers the need for accounting measures in respect of pending or future litigations, and the extent of any such measures, on the basis of the information available to its legal department and in close consultation with legal counsel acting for the Bayer Group. Where it is more likely than not that such a litigation will result in an outflow of resources that is already reasonably estimable, a provision for litigation is recorded in the amount of the present value of the expected cash outflows. Such provisions cover the estimated payments to the plaintiffs, court and procedural costs, attorney costs and the cost of potential settlements.

It is sometimes impossible to reliably determine the existence of a present obligation or reasonably estimate the probability that a potential outflow of resources will result from a pending or future litigation. The status of the material "legal risks" is described in Note [30]. Due to the special nature of these litigations, provisions generally are not established until initial settlements allow an estimate of potential amounts or judgments have been issued. Provisions for legal defense costs are established if it is probable that material costs will have to be incurred for external legal counsel to defend the company's legal position.

Internal and external legal counsel evaluate the current status of the Bayer Group's material legal risks at the end of each reporting period. The need to establish or adjust a provision and the amount of the provision or adjustment are determined on this basis. Adjusting events are reflected up to the date of preparation of the consolidated financial statements. The measurement of provisions in the case of class actions or mass compensation claims is mainly based on any settlements reached during the past year and on pending or anticipated future claims. With respect to the proceedings outlined in Note [30] "Legal Risks", further information on litigations, estimated financial effects, uncertainties and contingent liabilities, as well as the recognition and amounts of individual provisions, can be withheld under IAS 37.92 if disclosing it could significantly prejudice the company's position.

Financial liabilities

Financial liabilities are generally measured at amortized cost using the effective-interest method. Derivatives with negative fair values, liabilities for contingent consideration in business combinations and liabilities designated at fair value through profit or loss are measured at fair value.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

Supply chain financing programs (also known as reverse factoring) are used in the Bayer Group that enable suppliers to choose to have individual invoices paid prior to their due date. As part of such programs, the supplier concludes a financing agreement with a bank or platform operator without Bayer's involvement and, upon request, is paid the invoice amount by the bank in advance less an interest component. Bayer generally pays the invoice amount to the bank when due; the payment deadlines lie within the usual scope for the industry. Bayer has assessed these programs based on various criteria and concluded that the associated liabilities retain the character of trade accounts payable. The related payments to the bank are therefore classified as a cash outflow from operating activities.

Derivatives

The Bayer Group uses derivatives to mitigate the risk of changes in exchange rates, interest rates or commodity prices (such as for soybeans and corn) and to hedge the stock-based compensation programs issued until 2020. The instruments used include forward exchange contracts, interest-rate swaps, forward commodity contracts and forward stock transactions. Derivatives are recognized at the trade date and are remeasured to fair value on each closing date. Positive fair values are reflected in financial assets, negative fair values in financial liabilities.

Contracts for the purchase and sale of nonfinancial items (such as raw material supply contracts) that are concluded for the company's own purposes are treated as pending transactions (own-use exemption) and not accounted for as derivatives. Other contracts for the purchase and sale of nonfinancial items are accounted for as derivatives at fair value through profit or loss under certain conditions (such as nonfulfillment of own-use exemption).

Where embedded derivatives are identified in contracts, they are assessed for any close economic relationship with the host contract. If no such relationship is found, they are accounted for separately as derivatives. Financial receivables with embedded derivatives are not assessed separately, but rather the entire instrument is assessed for measurement at amortized cost or fair value. Usually, such receivables are measured at fair value through profit or loss.

Derivatives are recognized at fair value through profit or loss unless they qualify for hedge accounting. This mainly applies to the exchange hedging of accounting risks, the effects of which are reflected in other financial income and expenses as exchange gains or losses.

The effective portion of derivatives designated as cash flow hedges is initially recognized outside profit or loss in other comprehensive income. Any ineffective portions are recognized directly in profit or loss. Only when the hedged item is recognized through profit or loss is the effective portion of the hedging instrument also recognized in the income statement. In the case of commodity futures and options that hedge purchase prices, reclassification is to the cost of goods sold. For commodity futures that hedge selling prices, reclassification is to sales.

The effects of interest-rate hedges are reflected in interest income or expense. The effects of the hedging of forecasted sales transactions in foreign currencies are recognized in other operating income or expenses at the time of revenue recognition. The hedging of stock-based employee compensation is recognized in the respective operating expense items of "Enabling Functions and Consolidation" over the duration of the Aspire programs.

Changes in the fair values of derivatives designated as fair value hedges are recognized in income along with the adjustments in the carrying amounts of the hedged items. The effects of interest-rate hedges are reflected in interest income or expense.

Acquisition accounting

An acquisition is a transaction or other event that involves the purchase of an integrated set of activities and assets that include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. Acquired businesses are accounted for using the acquisition method, which in principle requires that the assets acquired and liabilities assumed be recorded at their respective fair values on the date Bayer obtains control. The difference between the consideration transferred (plus the fair value of the pre-existing equity interest in the acquiree in the case of step acquisitions) and the fair values of the acquired assets and assumed liabilities is recognized as goodwill. The results of foreign currency cash flow hedges are factored into the translation of foreign currency purchase price payments. For significant acquisitions, the purchase price allocation is carried out with assistance from independent third-party valuation specialists. The related valuations are based on the information available at the acquisition date. Ancillary acquisition costs are recognized as expenses in the periods in which they occur.

The transferred consideration can include contingent consideration that is payable to the previous owners of the acquired company following the acquisition date upon reaching certain milestones, such as progress in the trial or regulatory approval process or surpassing certain sales thresholds. This is recognized at fair value as part of the consideration transferred for the acquired company and is generally recognized as a financial (purchase price) liability. All changes in fair value after the acquisition date are recognized under EBIT in the consolidated financial statements. However, changes in the fair value of the contingent consideration that are based on circumstances already existing on the date of acquisition are adjusted outside profit or loss within the measurement period of 12 months.

The application of the acquisition method requires certain estimates and assumptions to be made, especially concerning the fair values of the acquired intangible assets, property, plant and equipment and the liabilities assumed at the acquisition date, and the useful lives of the acquired intangible assets, property, plant and equipment. Measurement is based to a large extent on anticipated cash flows. If actual cash flows vary from those used in calculating fair values, this may materially affect the Group's future results of operations. In particular, the estimation of discounted cash flows from intangible assets under development, patented and nonpatented technologies, customer relationships and brands is based on assumptions concerning, for example:

// The outcomes of R&D activities regarding the efficacy of a crop protection product, trait, seed or drug development candidate, and results of clinical trials
// The probability of obtaining regulatory approvals in individual countries
// Long-term sales projections
// Possible selling price erosion due to offerings of unpatented products following patent expirations
// The behavior of competitors (launch of competing products, marketing initiatives, etc.)

If the assets acquired do not constitute a business, the individually identifiable assets acquired and liabilities assumed are recognized. The acquisition costs are allocated to the individual assets and liabilities at the acquisition date based on their fair values. Such a transaction or event does not result in goodwill. This also applies if the optional concentration test finds that the transaction in question does not constitute the acquisition of a business.

Divestment accounting

Divestments of shares in subsidiaries that result in a loss of control are generally accounted for in profit or loss. When shares in a subsidiary are gradually divested in several tranches, a reduction in the majority shareholding without the loss of control is reflected outside profit or loss and results in an increase in the equity attributable to noncontrolling interest. After the loss of control, the interest remaining at the time of the loss of control is recognized at fair value.

Impact of COVID-19 and Russia's invasion of Ukraine

We do not currently see any material negative impact of COVID-19 on our business operations and thus the Group's financial position or results of operations.

Together, Russia and Ukraine accounted for about 3% of our sales in 2022. Group sales and earnings as well as its financial position and results of operations were only marginally impacted by the war and its direct consequences in 2022. We did not register any major increase in past-due receivables in Russia or Ukraine. Based on a risk analysis conducted at the level of individual customers, we wrote down the value of receivables by €7 million.

Energy provision and global supply chains may also continue to be disrupted as a result of COVID-19 and the war. Energy costs rose by around 36% (€162 million) year over year in 2022. They accounted for only 3% of the total cost of goods sold in fiscal 2022. To mitigate the impact of any potential gas shortages and to reduce our reliance on natural gas, we have realigned our processes by switching to renewable energy sources and advancing the implementation of programs to save energy. At the same time, we are also expanding our network of suppliers and building up additional inventories wherever possible.

The higher inflation caused by the developments mentioned above and the associated rise in interest rates had an impact on, among other things, the impairment test of our intangible assets and property, plant and equipment (see Note [14]) and the measurement of pension provisions (see Note [22]) and other long-term obligations.

Beyond this, we did not see any material financial impact for full-year 2022.

The stability of international payment transactions involving Russia is subject to considerable uncertainties, and we are evaluating suitable risk mitigation measures. There are currently no significant restrictions.

We are continually analyzing the future direct and indirect effects of economic developments and sanctions on the valuation of assets and liabilities.

In May, we agreed and drew on a credit line of €3 billion. It will be used to help manage risks should the current geopolitical situation deteriorate.

Impact of climate risks

In 2022, we looked at the impact of transitional and physical climate-related risks from various perspectives in order to be able to evaluate them better in relation to our company and the Group's financial position or results of operations. Climate-related risks are already accounted for in our Group-wide enterprise risk management (ERM) system.

Weather and climate effects are of particular significance for the Crop Science Division and are accounted for in both strategic planning and the seasonal business risk. These effects are intensifying as a result of climate change, and both short-term (extreme) weather events and long-term climate changes will further increase.

All climate models anticipate an increasing intensity in extreme weather conditions (such as drought, heavy rains and storms) and a shift in climatic zones that present an elevated risk of crop losses and thus risks for the agricultural value chain as a whole. Despite all precautions, operations at our sites or those of our customers may be disrupted and crop failures may occur in connection with extreme weather events such as natural disasters.

We continue to develop innovative and sustainable methods to minimize risks and therefore do not see any fundamentally changed expectations with regard to the Group's financial position or results of operations.

4. Segment reporting

At Bayer, the Board of Management – as the chief operating decision maker – allocates resources to the operating segments and assesses their performance. The reportable segments and regions are identified, and the disclosures selected, in line with the internal financial reporting system (management approach) and based on the Group accounting policies outlined in Note [3].

As of December 31, 2022, the Bayer Group comprised the three reportable segments Crop Science, Pharmaceuticals and Consumer Health. Their activities are as follows:

B 4/1

Activities of the Segments

Segment	Activities
Crop Science	Development, production and marketing of a broad portfolio of products in seeds and plant traits, crop protection, digital solutions and customer services to promote sustainable agriculture
Pharmaceuticals	Development, production and marketing of prescription products, especially for cardiology and women's health; specialty therapeutics in the areas of oncology, hematology, ophthalmology and – in the medium term – cell and gene therapy; diagnostic imaging equipment and the necessary contrast agents
Consumer Health	Development, production and marketing of mainly nonprescription (OTC = over-the-counter) products in the dermatology, nutritional supplements, digestive health, allergy, cough and cold, and pain and cardiovascular risk prevention categories

Information on other business activities and segments that are not reportable is provided under "All Other Segments." These include Bayer 04 Leverkusen Fussball GmbH and Bayer Gastronomie GmbH.

The information provided under “Enabling Functions and Consolidation” mainly relates to Group-wide competence centers and business support services as well as “Leaps by Bayer,” which focuses on the development of crucial, cross-species innovations. “All other segments” and “Enabling Functions and Consolidation” in the management report are combined under the Reconciliation. It also includes the increase or decrease in expenses for Group-wide long-term stock-based compensation (Aspire) arising from fluctuations in the performance of Bayer stock and other factors, and the consolidation of intersegment sales (2022: €20 million; 2021: €34 million). Also recognized are gains and losses incurred upon the ongoing revaluation of assets and liabilities and of equity under IAS 29 for Bayer S.A. in Argentina and for Bayer Türk Kimya Sanayii Limited Sirketi and Monsanto Gida Ve Tarim Ticaret Ltd Sirketi in Turkey. Included here in addition are income and expenses resulting from certain contingent liabilities unrelated to the current business along with those pertaining to the comparable central functions of the acquired Monsanto Group. Chief among the latter are the matters relating to lawsuits concerning polychlorinated biphenyls (PCBs) referred to in Note [30], “Legal Risks”.

The segment data is calculated as follows:

// The intersegment sales reflect intra-Group transactions effected at transfer prices fixed on an arm’s-length basis.
// The net cash provided by operating activities is the cash flow from operating activities as defined in IAS 7 (Statement of Cash Flows).
// Leases between fully consolidated companies continue to be recognized as operating leases under IAS 17 within the segment data in the consolidated financial statements of the Bayer Group even after the first-time application of IFRS 16 as of January 1, 2019. This does not have any relevant impact on the respective key data used in the steering of the company and internal reporting to the Board of Management as the chief operating decision maker.

The key data by segment is as follows:

B 4/2

Key Data by Segment

	Crop Science		Pharmaceuticals		Consumer Health	
€ million	2021	2022	2021	2022	2021	2022
Net sales (external)	20,207	25,169	18,349	19,252	5,293	6,080
Currency-and portfolio-adjusted change[1]	+11.1%	+15.6%	+7.4%	+1.1%	+6.5%	+8.4%
Intersegment sales	12	9	22	11	0	0
Net sales (total)	20,219	25,178	18,371	19,263	5,293	6,080
EBIT[1]	(495)	2,950	4,469	4,985	808	957
EBITDA before special items[1]	4,698	6,867	5,779	5,873	1,190	1,367
EBITDA margin before special items[1]	23.2%	27.3%	31.5%	30.5%	22.5%	22.5%
ROCE[1]	–0.9%	5.4%	18.6%	19.2%	6.4%	7.5%
Net cash provided by operating activities	1,272	3,394	3,493	3,588	1,030	1,046
Capital expenditures (newly capitalized)	1,240	1,786	1,308	1,317	207	200
Depreciation, amortization and impairments	1,435	4,596	1,001	1,227	336	364
of which impairment losses/impairment loss reversals	(822)	2,186	130	346	5	2
Clean depreciation and amortization[1]	2,278	2,456	986	1,137	336	364
Research and development expenses	2,029	2,876	3,139	3,397	199	221

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

B 4/2 (continued)

Key Data by Segment

	All Other Segments		Enabling Functions and Consolidation[2]		Group	
€ million	2021	2022	2021	2022	2021	2022
Net sales (external)	203	217	29	21	44,081	50,739
Currency-and portfolio-adjusted change[1]	–11.6%	+2.9%	–	–	+8.9%	+8.7%
Intersegment sales	0	2	(34)	(22)	–	–
Net sales (total)	203	219	(5)	(1)	44,081	50,739
EBIT[1]	(27)	79	(1,402)	(1,959)	3,353	7,012
EBITDA before special items[1]	95	151	(583)	(745)	11,179	13,513
EBITDA margin before special items[1]	–	–	–	–	25.4%	26.6%
ROCE[1]	–	–	–	–	3.8%	7.7%
Net cash provided by operating activities	144	105	(850)	(1,040)	5,089	7,093
Capital expenditures (newly capitalized)	93	43	156	293	3,004	3,639
Depreciation, amortization and impairments	70	71	214	245	3,056	6,503
of which impairment losses/impairment loss reversals	1	(1)	2	21	(684)	2,554
Clean depreciation and amortization[1]	70	72	214	227	3,884	4,256
Research and development expenses	4	4	41	74	5,412	6,572

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] The figures presented here are the unallocated components of the Enabling Functions.

Reconciliations

The reconciliation of EBITDA before special items, EBIT before special items and EBIT to Group income before income taxes is given in the following table:

B 4/3

Reconciliation of Segments' EBITDA Before Special Items to Group Income Before Income Taxes

€ million	2021	2022
EBITDA before special items of segments	11,762	14,258
EBITDA before special items of Enabling Functions and Consolidation	(583)	(745)
EBITDA before special items[1]	**11,179**	**13,513**
Depreciation, amortization and impairment losses/loss reversals before special items of segments	(3,670)	(4,029)
Depreciation, amortization and impairment losses/loss reversals before special items of Enabling Functions and Consolidation	(214)	(227)
Depreciation, amortization and impairment losses/loss reversals before special items	**(3,884)**	**(4,256)**
EBIT before special items of segments	8,092	10,229
EBIT before special items of Enabling Functions and Consolidation	(797)	(972)
EBIT before special items[1]	**7,295**	**9,257**
Special items of segments	(3,337)	(1,258)
Special items of Enabling Functions and Consolidation	(605)	(987)
Special items[1]	**(3,942)**	**(2,245)**
EBIT of segments	4,755	8,971
EBIT of Enabling Functions and Consolidation	(1,402)	(1,959)
EBIT[1]	**3,353**	**7,012**
Financial result	(1,307)	(2,342)
Income before income taxes	**2,046**	**4,670**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Information on geographical areas

The following table provides a regional breakdown of external sales by market and of intangible assets, property, plant and equipment:

B 4/4

Information on Geographical Areas

	Net sales (external) by market		Intangible assets and property, plant and equipment	
€ million	2021	2022	2021	2022
Europe/Middle East/Africa	13,648	14,429	24,679	24,624
of which Germany	2,545	2,477	15,461	15,167
of which Switzerland	542	600	4,933	4,665
North America	14,952	17,571	49,587	47,729
of which United States	13,397	15,685	48,004	46,245
Asia/Pacific	8,849	9,451	1,930	1,878
of which China	3,856	4,259	623	675
Latin America	6,632	9,288	2,856	3,274
of which Brazil	3,476	5,322	1,632	1,836
Total	**44,081**	**50,739**	**79,052**	**77,505**

Information on major customers

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2022 or 2021.

Information on strategic business entities, products and categories

The following tables provide a breakdown by strategic business entity in the Crop Science segment, by product in the Pharmaceuticals segment, and by category in the Consumer Health segment.

B 4/5

Sales by Strategic Business Entity – Crop Science

€ million	2021	2022
Crop Science	**20,207**	**25,169**
Corn Seed & Traits	5,162	6,089
Herbicides	5,328	8,325
Fungicides	2,924	3,273
Soybean Seed & Traits	2,164	2,462
Insecticides	1,417	1,584
Environmental Science	1,103	1,130
Vegetable Seeds	653	717
Other	1,456	1,589

B 4/6

Sales by Product – Pharmaceuticals

€ million	2021	2022
Pharmaceuticals	**18,349**	**19,252**
Xarelto™	4,735	4,516
Eylea™	2,918	3,213
Mirena™/Kyleena™/Jaydess™	1,170	1,277
Kogenate™/Kovaltry™/Jivi™	823	847
Adalat™	763	831
YAZ™/Yasmin™/Yasminelle™	740	790
Aspirin™ Cardio	678	788
Adempas™	738	652
Stivarga™	477	613
CT Fluid Delivery	449	494
Gadovist™ product family	418	469
Nubeqa™	219	466
Ultravist™	357	436
Betaferon™/Betaseron™	337	311
Nexavar™	435	267
Other	3,092	3,282

B 4/7

Sales by Category – Consumer Health

€ million	2021	2022
Consumer Health	**5,293**	**6,080**
Nutritionals	1,471	1,563
Allergy & Cold	1,036	1,377
Dermatology	1,122	1,287
Pain & Cardio	834	905
Digestive Health	771	895
Other	59	53

5. Scope of consolidation; subsidiaries and affiliates

5.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2022 were as follows:

B 5.1/1

Change in the Number of Consolidated Companies

Bayer AG and consolidated companies	Germany	Other countries	Total
January 1, 2022	46	328	374
Changes in scope of consolidation	(2)	(12)	(14)
Additions[1]	–	1	1
Retirements	–	(7)	(7)
December 31, 2022	**44**	**310**	**354**

[1] Acquisitions, newly established companies and acquisition of control

In conjunction with the acquisition of the consumer care business of Merck & Co., Inc., United States, Bayer entered into a strategic collaboration with that company in 2014. This collaboration is included in the consolidated financial statements as a joint operation. Bayer and Merck & Co., Inc., have mutually agreed to collaborate on the development, production, life-cycle management and marketing of active ingredients and products in the field of soluble guanylate cyclase (sGC) modulation.

In addition, shares in 43 (2021: 33) associates and five (2021: six) joint ventures were accounted for in the consolidated financial statements using the equity method. Details of these companies are given in Note [16].

A total of 67 (2021: 72) subsidiaries, including one (2021: one) structured entity and 10 (2021: 10) associates or joint ventures that in aggregate are immaterial to the Bayer Group's financial position and results of operations are neither consolidated nor accounted for using the equity method, but are recognized at fair value. The immaterial subsidiaries accounted for less than 0.1% of Group sales, less than 0.1% of equity and less than 0.2% of total assets.

Details of the companies included in the consolidated financial statements, the subsidiary and affiliated companies of the Bayer Group pursuant to Section 313, Paragraph 2 of the German Commercial Code, and a list of domestic subsidiaries that availed themselves in 2022 of certain exemptions granted under Section 264, Paragraph 3, and Section 264b of the German Commercial Code, are included in the audited consolidated financial statements that have been sent for entry into the Company Registry. This information can also be accessed at www.bayer.com/shareownership2022.

5.2 Business combinations and other acquisitions

Acquisitions in 2022

On June 28, 2022, Bayer acquired 30% of the shares in Natsana GmbH, Germany, for a purchase price of around €96 million. The acquired shares are accounted for as an associate using the equity method. Natsana is an online-only provider focused on the sale and development of natural supplements such as vitamins, minerals, nutrients and probiotics. Its portfolio comprises over 100 products under its three main brands: Feel Natural, Nature Love and Natural Elements. Bayer will acquire the other 70% of shares in 2025 based on a buy-out mechanism agreed to when closing the transaction. The company has been assigned to the Consumer Health segment.

On August 1, 2022, Bayer increased its existing interest in CoverCress Inc., United States, from 5.7% to 64.7% for a purchase price of around €111 million. Since the minority shareholders Bunge and Chevron retained extensive rights relevant to business decisions, the acquired interest is recognized as an interest in an associate and accounted for using the equity method. In addition, there is an option to acquire the remaining 35.3%, which is anticipated to become available from 2027. CoverCress™ is a rotational cash crop which combines grain production with the environmental benefits of a cover crop without displacing other harvests. Oil extracted from CoverCress™ grain is designed to achieve a lower carbon intensity score. The company is assigned to the Crop Science segment.

Acquisitions in 2021

On August 19, 2021, Bayer acquired 100% of the shares in the biopharmaceutical company Vividion Therapeutics, Inc., United States. This company has been fully consolidated since September 1, 2021. Vividion utilizes novel discovery technologies to unlock high value, traditionally undruggable targets with precision therapeutics, with initial focus on targets relevant to oncology and immunology. Vividion's programs include research into a transcription factor NRF2 antagonist for the potential treatment of NRF2 mutant cancers, as well as NRF2 activators for various inflammatory diseases such as irritable bowel disease. The transaction gives Bayer full rights to Vividion's proprietary discovery platform, which comprises three integrated, synergistic components: a novel chemoproteomic screening technology, an integrated data portal and a proprietary chemistry library. The acquisition strengthens Bayer's small molecule capabilities and expands the company's reach into new modalities.

Bayer paid an upfront consideration of around €1,252 million to acquire Vividion. Further amounts totaling up to around €422 million are payable upon the achievement of pre-defined research and development milestones. A liability of €412 million, weighted according to the probability that the payments will have to be made, was recognized for this purpose. The purchase price mainly pertains to goodwill, which in turn largely reflects the anticipated innovation potential and amounts to €1,442 million based on the final purchase price allocation. In addition, an amount of €49 million was recognized for patents and technologies, €45 million for research and development projects, and around €128 million for other assets. The goodwill recognized is not tax-deductible. Vividion is assigned to the Pharmaceuticals segment. The purchase price allocation for Vividion was completed in August 2022.

On June 2, 2021, Bayer completed the acquisition of 100% of the shares in two biotech companies: Noria Therapeutics Inc., United States, and PSMA Therapeutics Inc., United States. Through these acquisitions, Bayer obtained exclusive rights to a differentiated alpha radionuclide therapy based on actinium-225 and a small molecule targeting prostate-specific membrane antigen (PSMA), and in doing so broadened its oncology portfolio of targeted alpha therapies (TAT). Bayer paid an upfront consideration of €8 million in total and will make potential milestone payments of up to around €120 million until launch followed by potential additional sales-based milestone payments that will also amount to up to around €120 million. Neither acquisition falls within the scope of IFRS 3 such that both are presented as a capital expenditure for intangible assets relating to R&D projects. The two companies are assigned to the Pharmaceuticals segment.

5.3 Discontinued operations, assets and liabilities held for sale, and divestments

Discontinued operations

There were no discontinued operations to report in 2022 or 2021.

Assets and liabilities held for sale

The assets held for sale, net of directly related liabilities, totaled around €3 million as of December 31, 2022. This followed €76 million in 2021, of which €48 million comprised intangible assets and €28 million property, plant and equipment. The intangible assets held for sale pertained to the planned divestment of the Marvelon™ and Mercilon™ brands in China, Hong Kong, Macau and Vietnam within the Pharmaceuticals segment. The property, plant and equipment held for sale primarily related to the planned sale of a Pharmaceuticals production facility in Brazil. Both transactions were concluded in 2022.

Divestments

On October 4, 2022, Bayer completed the sale and transfer of the Crop Science Division's Environmental Science Professional business to the private equity firm Cinven, United Kingdom. Environmental Science Professional is a global leader offering solutions to control pests, disease and weeds in nonagricultural areas such as vector control, professional pest management, vegetation management, forestry, and turf and ornamentals. The purchase price paid for the business, which generated sales of around €600 million in 2021, amounted to approximately €2,299 million before customary purchase price adjustments. The divestment gain of €785 million included currency effects of €77 million and was recognized in other operating income. The transaction was initially classified as assets and liabilities held for sale on March 31, 2022. The assets and liabilities sold as part of the transaction are shown in the table below:

B 5.3/1

Assets and Liabilities Sold

€ million	2022
Goodwill	1,496
Other intangible assets	37
Property, plant and equipment	32
Other financial assets	33
Inventories	124
Trade accounts receivable	7
Other receivables	9
Cash and cash equivalents	4
Provisions for pensions and other post-employment benefits	(7)
Other provisions	(10)
Refund liabilities	(119)
Financial liabilities	(10)
Other liabilities	(4)
Trade accounts payable	(1)
Divested net assets	1,591

Notes to the Income Statements

6. Net sales

Total reported net sales in 2022 increased by €6,658 million, or 15.1%, year on year to €50,739 million. Sales were derived primarily from product deliveries (€46,412 million; 2021: €40,111 million) and licenses (€3,504 million; 2021: €3,230 million). The license revenues amounted to €2,571 million (2021: €2,219 million) for Crop Science, €930 million (2021: €1,006 million) for Pharmaceuticals and €3 million (2021: €3 million) for Consumer Health. Breakdowns of net sales by segment and geographical area are given in the overview in Note [4].

Sales of €1,960 million were recognized in 2022 (2021: €1,975 million) from performance obligations already satisfied in previous years. These sales primarily resulted from right-to-use licenses granted against sales-based royalties and from adjustments to refund liabilities for expected product returns and rebates to be granted.

Contractually agreed sales volumes pertaining to performance obligations not yet satisfied as of December 31, 2022, are expected to be reclassified to profit or loss as follows, taking into account anticipated sales deductions:

B 6/1

Allocation of Transaction Price to Unfulfilled Performance Obligations

€ million	2021	2022
Transaction price outstanding as of Dec. 31	**850**	**723**
of which to be recognized within 1 year	149	152
of which to be recognized between 1 and 2 years	145	138
of which to be recognized between 2 and 3 years	132	135
of which to be recognized between 3 and 4 years	131	133
of which to be recognized between 4 and 5 years	131	132
of which to be recognized after more than 5 years	162	33

The description above only accounts for customer contracts with an original contractual term of more than one year.

Contract liabilities mainly result from advance payments by customers for product deliveries and are predominantly recognized as sales within one year. Further significant amounts of contract liabilities comprised milestone payments already received for right-to-access licenses. The contract liabilities under right-to-access licenses will be recognized as sales over a period of more than five years.

The change in contract liabilities was due to the following factors:

B 6/2

Roll-Forward of Contract Liabilities

€ million	2021	2022
Contract liability balance as of Jan. 1	**4,314**	**4,822**
Changes due to business combinations	96	–
Additions	8,311	11,015
Revenue recognized in the current year that was included in the contract liability balance as of Jan. 1	(3,575)	(4,106)
Revenue recognized in the current year that was not included in the contract liability balance as of Jan. 1	(4,663)	(7,211)
Other	68	(23)
Exchange differences	271	227
Contract liability balance as of Dec. 31	**4,822**	**4,724**

Amounts for rebates, which are reported separately as refund liabilities, amounted to 9.6% of total net sales in 2022 (2021: 9.8%).

The refund liabilities for product returns amounted to 1.4% of total net sales in 2022 (2021: 1.2%).

7. Other operating income

Other operating income was comprised as follows:

B 7/1

Other Operating Income

€ million	2021	2022
Gains on retirements of noncurrent assets	244	1,745
Income from reversal of impairment losses on receivables	83	128
Income from reversal of unutilized provisions	106	165
Gains from derivatives	71	144
Sales revenues from products acquired through barter transactions	299	352
Miscellaneous operating income	697	505
Total	**1,500**	**3,039**

Gains on retirements of noncurrent assets primarily related to the sale of our Environmental Science Professional business to the international private equity firm Cinven (€785 million), our rights to the men's health product Nebido™ (€467 million), and our lormetazepam-based products (€210 million). These gains are reported as special items in segment reporting. Gains on retirements of noncurrent assets also included a gain from the divestment of the Supply Center Cancioneiro in Brazil (€38 million) and gains from other divestments (€121 million).

Miscellaneous operating income included income of €77 million as a result of the hyperinflation of nonmonetary assets and liabilities as well as equity in Argentina and Turkey.

8. Other operating expenses

Other operating expenses were comprised as follows:

B 8/1

Other Operating Expenses

€ million	2021	2022
Losses on retirements of noncurrent assets	(26)	(54)
Impairment losses on receivables	(128)	(125)
Expenses for significant litigations	(3,689)	(791)
Losses from derivatives	(113)	(643)
Cost of goods sold for products acquired through barter transactions	(297)	(343)
Impairment losses on goodwill	–	(734)
Miscellaneous operating expenses	(422)	(711)
Total	**(4,675)**	**(3,401)**

Expenses for significant litigations amounted to €791 million (2021: €3,689 million) and were mainly attributable to the allocation to provisions for litigations surrounding polychlorinated biphenyls, or PCBs (All Other Segments) in the second quarter of 2022. The figure for 2021 included expenses of €3.5 billion for glyphosate litigations (Crop Science segment). All of these expenses were reported as special items in segment reporting.

Miscellaneous operating expenses included an amount of €75 million in connection with the sale of our Environmental Science Professional business. At Pharmaceuticals, changes in the fair value of a contingent consideration led to expenses of €78 million. The aforementioned expenses are reported as special items in segment reporting. In addition, donations to charitable activities totaled €69 million (all segments). The remaining amount comprised a number of individually immaterial items at the subsidiaries.

For information on the legal risks and the provisions established for this purpose, see Notes [30] and [23].

9. Personnel expenses and employee numbers

Personnel expenses increased by €821 million in 2022 to €12,619 million (2021: €11,798 million). This was due to factors including currency effects and higher compensation.

B 9/1

Personnel Expenses

€ million	2021	2022
Salaries	9,662	10,241
Social expenses and expenses for pensions and other benefits	2,136	2,378
of which for defined contribution pension plans	517	565
of which for defined benefit and other pension plans	387	434
Total	**11,798**	**12,619**

The interest portion of the allocation to personnel-related provisions – mainly for pensions and other post-employment benefits – is included in the financial result under other financial expenses (Note [10.3]).

The average numbers of employees, classified by functional area, were as shown in the table below:

B 9/2

Employees	2021	2022
Production	40,837	41,503
Marketing and distribution	35,332	35,357
Research and development	15,256	16,035
General administration	8,147	8,191
Total	**99,572**	**101,086**
Apprentices	1,230	1,216

The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE), with part-time employees included on a prorated basis in line with their contractual working hours.

10. Financial result

The financial result for 2022 was minus €2,342 million (2021: minus €1,307 million), comprising an equity-method loss of minus €150 million (2021: equity-method income of €49 million), financial expenses of €2,642 million (2021: €1,882 million) and financial income of €450 million (2021: €526 million). Details of the components of the financial result are provided in the following sections.

10.1 Income (loss) from investments in affiliated companies

The net income (loss) from investments in affiliated companies was comprised as follows:

B 10.1/1

Income (Loss) from Investments in Affiliated Companies € million	2021	2022
Net income (loss) from investments accounted for using the equity method (equity-method income/loss)	49	(150)
Expenses		
Losses from changes in fair values of investments in affiliated companies	(66)	(151)
Income		
Gains from changes in fair values of investments in affiliated companies	34	–
Miscellaneous income from investments in affiliated companies	6	1
Total	**23**	**(300)**

Income from investments accounted for using the equity method

Income from investments accounted for using the equity method included expenses of €148 million (2021: €84 million) from “Leaps by Bayer” investments.

Income from investments accounted for using the equity method in 2021 included net equity-method income of €106 million pertaining to Century Therapeutics, Inc., United States, and of €24 million pertaining to Pyxis Oncology, Inc., United States. This equity-method income contained gains of €122 million (Century Therapeutics, Inc.) and €28 million (Pyxis Oncology, Inc.) resulting from the remeasurement of the interests that had been accounted for using the equity method until their respective IPOs. The two companies’ IPOs resulted in the Bayer Group losing significant influence, which led to a change in accounting method. Since then, the shares held in both companies have been measured at fair value through profit or loss.

Losses from changes in the fair values of investments in affiliated companies pertained to the measurement of Century Therapeutics, Inc. (€124 million; 2021: €50 million) and Pyxis Oncology, Inc. (€25 million; 2021: €12 million).

Gains from changes in the fair values of investments in affiliated companies in 2021 included gains of €22 million and €12 million pertaining to the interests in Covestro and Elanco, respectively. The Bayer Group sold its remaining shares in Covestro AG and Elanco Animal Health Inc. during the first half of 2021.

Further details of the companies accounted for using the equity method are given in Note [16].

10.2 Net interest expense

The net interest expense was comprised as follows:

B 10.2/1

Net Interest Expense

€ million	2021	2022
Interest and similar expenses	**(1,276)**	**(1,437)**
of which interest expense relating to nonfinancial liabilities	(129)	(178)
Interest and similar income	**346**	**379**
of which interest income relating to nonfinancial assets	207	114
Total	**(930)**	**(1,058)**

10.3 Other financial income and expenses

Other financial income and expenses were comprised as follows:

B 10.3/1

Other Financial Income and Expenses

€ million	2021	2022
Expenses		
Interest portion of discounted provisions[1]	(71)	(420)
Exchange gain (loss)	(385)	(219)
Miscellaneous financial expenses	(84)	(415)
Income		
Miscellaneous financial income	140	70
Total	**(400)**	**(984)**

[1] Also including effects from the remeasurement of corresponding overfunding

The interest portion of discounted provisions comprised minus €81 million (2021: minus €81 million) in net interest expense for pension and other post-employment benefit provisions and minus €339 million (2021: €10 million) in effects of the unwinding of discount and interest-rate fluctuations for other personnel-related provisions, effects from the remeasurement of corresponding overfunding, and effects of the unwinding of discount for other provisions. The interest expense for pension and other post-employment benefit provisions included €426 million (2021: €349 million) for the unwinding of discount on the present value of the defined benefit obligation and €345 million (2021: €268 million) in interest income from plan assets.

The miscellaneous financial expenses included €281 million (2021: €39 million) in negative changes in the fair value of financial investments in debt instruments (such as money market funds in foreign currency and mixed funds) as well as €95 million (2021: €0 million) in expenses from the payment of intra-Group invoices between Argentina and the United States.

The miscellaneous financial income included gains of €20 million (2021: €82 million) arising from positive changes in the fair value of obligations for contingent consideration and liabilities to purchase noncontrolling interests, and of €10 million (2021: €26 million) arising from positive changes in the fair value of financial investments in debt instruments.

11. Taxes

The breakdown of tax expenses by origin was as follows:

B 11/1

Tax Expense by Origin

	2021		2022	
€ million		Of which income taxes		Of which income taxes
Taxes paid or accrued				
Current income taxes				
Germany	(604)	(604)	(912)	(912)
Other countries	(1,022)	(1,022)	(1,659)	(1,659)
Other taxes				
Germany	(17)		(56)	
Other countries	(200)		(175)	
	(1,843)	**(1,626)**	**(2,802)**	**(2,571)**
Deferred taxes				
from temporary differences	334	334	1,703	1,703
from tax loss and interest carryforwards and tax credits	268	268	364	364
	602	**602**	**2,067**	2,067
Total	**(1,241)**	**(1,024)**	**(735)**	**(504)**

Other taxes mainly included land, vehicle and other indirect taxes and are included in the respective operating expense items.

The deferred tax assets and liabilities were allocable to the following items in the statements of financial position:

B 11/2

Deferred Tax Assets and Liabilities

	Dec. 31, 2021		Dec. 31, 2022	
€ million	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Intangible assets	1,660	4,663	1,405	4,006
Property, plant and equipment	305	827	596	683
Financial assets	68	339	65	158
Inventories	1,946	579	2,023	540
Receivables	257	199	311	504
Other assets	33	4	4	41
Provisions for pensions and other post-employment benefits	2,327	441	1,493	458
Other provisions	1,910	11	2,212	53
Liabilities	1,494	405	1,950	291
Tax loss and interest carryforwards	481	–	524	–
Tax credits	636	–	1,029	–
	11,117	**7,468**	11,612	6,734
Set-off	(6,537)	(6,537)	(6,007)	(6,007)
Total	**4,580**	**931**	5,605	727

The net asset surplus arising from deferred tax receivables and liabilities rose year on year to €1,229 million, of which €2,067 million was recognized as deferred tax income in the income statement and €838 million as a reduction in other comprehensive income. The change in other comprehensive income mainly relates to the remeasurement of the net defined benefit liability for post-employment benefit plans.

The use of tax loss carryforwards reduced current income taxes in 2022 by €422 million (2021: €43 million). The use of tax credits reduced current income taxes by €283 million (2021: €56 million).

Of the total tax loss and interest carryforwards of €15,924 million, including interest carryforwards of €1,037 million (2021: €11,975 million, including interest carryforwards of €1,019 million), an amount of €3,727 million, including interest carryforwards of €81 million (2021: €3,817 million, including interest carryforwards of €65 million) is expected to be usable within a reasonable period.

Deferred tax assets of €524 million (2021: €481 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable. The use of €12,196 million of tax loss and interest carryforwards, including interest carryforwards of €956 million (2021: €8,158 million, including interest carryforwards of €954 million) was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. The addition of usable tax loss and interest carryforwards mainly resulted from the measurement of loss carryforwards in the United States at the state level. If these tax loss and interest carryforwards had been fully usable, deferred tax assets of €1,115 million (2021: €766 million) would additionally have been recognized.

Tax credits of €1,029 million (2021: €636 million) were recognized as deferred tax assets in 2022. The use of €165 million (2021: €410 million) of tax credits was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount.

B 11/3

Expiration of Unusable Tax Credits and of Tax Loss and Interest Carryforwards

	Tax credits		Tax loss and interest carryforwards	
€ million	**Dec. 31, 2021**	**Dec. 31, 2022**	**Dec. 31, 2021**	**Dec. 31, 2022**
Within one year	1	**1**	96	**8**
Within two years to five years	3	**9**	211	**276**
Thereafter	406	**155**	7,851	**11,911**
Total	**410**	**165**	**8,158**	**12,195**

The use of €3,513 million (2021: €5,877 million) of deductible temporary differences was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. The decline is mainly due to a remeasurement of the deductible temporary differences in connection with the settlement agreements in the United States. If these temporary differences had been fully usable, deferred tax assets of €857 million (2021: €1,442 million) would have been recognized.

In 2022, subsidiaries that reported losses for 2022 or 2021 recognized net deferred tax assets totaling €2,720 million (2021: €1,342 million) from temporary differences, tax credits, and tax loss and interest carryforwards. These assets were considered to be unimpaired because the companies concerned were expected to generate taxable income in the future or sufficiently taxable temporary differences.

Deferred tax liabilities of €92 million were recognized in 2022 (2021: €72 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for differences on €23,838 million (2021: €26,038 million) of retained earnings of subsidiaries because these earnings are to be reinvested for an indefinite period.

The reconciliation of expected to actual income tax income or expense (2022: 558 million; 2021: minus €669 million) and of the expected to the effective tax rate for the Group was as follows:

B 11/4

Reconciliation of Expected to Actual Income Tax Income or Expense

	2021		2022	
	€ million	%	€ million	%
Expected income tax (income) and expense[1] and expected tax rate	**355**	**17.4**	**1,062**	**22.8**
Tax reduction from tax-free income	(186)	(9.1)	(252)	(5.4)
Tax reductions from recognition of previously unrecognized deferred tax assets on tax loss and interest carryforwards, and from utilization of carryforwards without previously recognized deferred tax assets	(21)	(1.0)	(1,411)	(30.2)
Increase in taxes due to non-tax-deductible expenses related to the operating business	171	8.3	159	3.4
Tax expense for expected unrecoverable temporary differences, tax loss and interest carryforwards	683	33.4	197	4.2
Tax (income) and expenses relating to other periods	133	6.5	(108)	(2.3)
Tax effects of changes in tax rates	(35)	(1.7)	(119)	(2.6)
Other tax effects	(76)	(3.7)	976	20.9
Actual income tax (income) and expense and effective tax rate	**1,024**	**50.1**	**504**	**10.8**

[1] Expected income tax (income) and expense is calculated by applying an expected weighted average tax rate to the pre-tax income of the Group. This average rate was determined on the basis of expected tax rates for the individual Group companies.

The tax reduction of €1,411 million from the recognition of previously unrecognized deferred tax assets on tax loss and interest carryforwards, and from utilization of carryforwards without previously recognized deferred tax assets, primarily pertained to an impairment loss reversal for previously unrecognized deferred tax assets arising from temporary differences, tax credits, and loss and interest carryforwards in connection with the settlement agreements in the United States.

The €976 million in tax expenses from other tax effects primarily comprised €506 million due to impairment losses on and disposals of goodwill, as well as €401 million for the establishment of tax provisions for controlled foreign corporation taxation, adjustments to provisions for tax risks, and the remeasurement of financial investments that are recognized through profit or loss without any tax impact.

12. Income/losses attributable to noncontrolling interest

Income attributable to noncontrolling interest amounted to €19 million (2021: €22 million). Losses attributable to noncontrolling interest amounted to €3 million (2021: €0 million). The income primarily related to Bayer CropScience Limited, India. The losses were, however, spread over several companies.

13. Earnings per share

Earnings per share are determined according to IAS 33 (Earnings Per Share) by dividing the net income for the period attributable to Bayer AG stockholders by the weighted average number of outstanding shares. As no dilutive financial instruments were in circulation at the end of the 2021 and 2022 reporting periods, diluted earnings per share were equivalent to basic earnings per share.

B 13/1

Earnings per Share

	€ million		Earnings per share (€)	
	2021	**2022**	**2021**	**2022**
Income after income taxes (attributable to Bayer AG stockholders)	**1,000**	**4,150**	**1.02**	**4.22**
of which income after income taxes from continuing operations (attributable to Bayer AG stockholders)	1,000	4,150	1.02	4.22
Weighted average number of outstanding shares (million)	**982.42**	**982.42**	**–**	**–**

Notes to the Statements of Financial Position

14. Goodwill and other intangible assets

Changes in intangible assets in 2022 were as follows:

B 14/1

Changes in Intangible Assets

€ million	Acquired goodwill	Patents and technol-ogies	Trade-marks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2021	**44,028**	**31,649**	**13,362**	**3,661**	**1,728**	**5,530**	**3,611**	**103,569**
Acquisitions	11	–	–	–	–	–	–	**11**
Capital expenditures	–	69	–	44	2	150	578	**843**
Retirements	–	(202)	(40)	(10)	(2)	(5)	(84)	**(343)**
Transfers	–	430	–	13	–	(440)	(3)	**–**
Transfers (IFRS 5)	(1,589)	–	(4)	(14)	(70)	–	(8)	**(1,685)**
Divestments/changes in scope of consolidation	–	–	–	(4)	–	–	–	**(4)**
Inflation adjustment (IAS 29)	37	21	–	2	–	(14)	15	**61**
Exchange differences	1,887	1,200	448	86	(2)	233	63	**3,915**
December 31, 2022	**44,374**	**33,167**	**13,766**	**3,778**	**1,656**	**5,454**	**4,172**	**106,367**
Accumulated amortization and impairment, December 31, 2021	**3,922**	**19,223**	**6,874**	**2,155**	**1,689**	**1,230**	**2,112**	**37,205**
Retirements	–	(187)	(24)	(10)	(2)	(5)	(67)	**(295)**
Amortization and impairment losses	734	3,831	816	213	4	832	406	**6,836**
Amortization	–	1,470	391	142	4	–	397	**2,404**
Impairment losses	734	2,361	425	71	–	832	9	**4,432**
Impairment loss reversals	–	(1,493)	(275)	(33)	–	(299)	–	**(2,100)**
Transfers	–	119	–	–	–	(119)	–	**–**
Transfers (IFRS 5)	(93)	–	(2)	(10)	(42)	–	(5)	**(152)**
Divestments/changes in scope of consolidation	–	–	–	(3)	–	–	–	**(3)**
Inflation adjustment (IAS 29)	4	7	–	2	–	–	13	**26**
Exchange differences	159	529	185	63	(2)	51	34	**1,019**
December 31, 2022	**4,726**	**22,029**	**7,574**	**2,377**	**1,647**	**1,690**	**2,493**	**42,536**
Carrying amounts, December 31, 2022	**39,648**	**11,138**	**6,192**	**1,401**	**9**	**3,764**	**1,679**	**63,831**
Carrying amounts, December 31, 2021	**40,106**	**12,426**	**6,488**	**1,506**	**39**	**4,300**	**1,499**	**66,364**

The amortization of intangible assets is allocated to the individual functional costs on the basis of the economic substance of the underlying asset. The amortization of trademarks and of marketing and distribution rights is generally reflected in selling expenses, and the amortization of production rights in the cost of goods sold. The amortization of patents and technologies is mainly included in the cost of goods sold or in research and development expenses. Acquired goodwill, research and development projects, and advance payments made are not subject to amortization.

Impairment testing was conducted in the second quarter of 2022 due to interest-rate developments at that time and their related impact on the weighted average cost of capital.

In the Pharmaceuticals segment, impairment testing resulted in impairment losses on R&D projects totaling around €92 million, particularly due to an increase in the weighted average cost of capital. The impairment losses were allocated to research and development expenses in each case.

The impairment testing did not give rise to any material impairment losses or impairment loss reversals in the Consumer Health segment.

Within the Crop Science segment, it resulted in the recognition of impairment losses of €1,322 million on intangible assets in the second quarter of 2022. This included impairment losses in the cash-generating units cotton seed (€851 million, comprising €67 million on research and development projects, €696 million on patents and technologies, €75 million on trademarks and €13 million on marketing and distribution rights), Vegetable Seeds (€269 million, comprising €78 million on research and development projects, €157 million on patents and technologies, €24 million on trademarks and €10 million on marketing and distribution rights) and Corn Seed & Traits (€202 million, comprising €37 million on research and development projects, €130 million on patents and technologies, €30 million on trademarks and €5 million on marketing and distribution rights). Whereas the impairment loss in the cash-generating unit cotton seed was primarily attributable to a deterioration in business prospects as well as an increase in the cost of capital, the impairment losses in the cash-generating units Vegetable Seeds and Corn Seed & Traits were mostly due to a significant increase in the weighted average cost of capital. The impairment losses on the assets of the cash-generating units were allocated to the cost of goods sold, selling expenses, and research and development expenses. The impairment losses and impairment loss reversals reflected the difference between the respective carrying amounts and their fair value less costs of disposal.

Our regular annual impairment testing in the fourth quarter of 2022 resulted in the recognition of net impairment losses of €628 million on intangible assets in the Crop Science segment, of which €734 million were due to goodwill. In addition, we recognized impairment losses on property, plant and equipment of €170 million in the cash-generating unit glyphosate. The impairment losses on goodwill were primarily the result of an increase in the weighted average cost of capital. Anticipated increases in production costs, particularly in the area of crop protection, also had a negative impact.

Impairment loss reversals arose at the cash-generating units Corn Seed & Traits (€1,313 million, comprising €247 million on research and development projects, €836 million on patents and technologies, €197 million on trademarks and €33 million on marketing and distribution rights) and cotton seed (€787 million, comprising €52 million on research and development projects, €657 million on patents and technologies and €78 million on trademarks). These impairment loss reversals were mainly attributable to improved business prospects, which stood against an increase in the weighted average cost of capital.

In addition, we recognized impairment losses in the cash-generating units Soybean Seed & Traits (€1,432 million, comprising €164 million on research and development projects, €1,094 million on patents and technologies, €145 million on trademarks and €29 million on marketing and distribution rights), Vegetable Seeds (€383 million, of which €115 million on research and development projects, €219 million on patents and technologies, €35 million on trademarks and €14 million on marketing and distribution rights) and glyphosate (€349 million, of which €63 million on patents and technologies, €115 million on trademarks and €170 million on property, plant and equipment). The impairment loss for Soybean Seed & Traits was largely due to increased production costs and a rise in the weighted average cost of capital at the end of the fourth quarter. With respect to Vegetable Seeds, the impairment loss was primarily attributable to a deterioration in business prospects. The impairment loss recorded for glyphosate was

largely the result of an increase in the weighted average cost of capital and a deterioration in business prospects.

The impairment losses on goodwill were recognized in other operating expenses. The impairment losses and loss reversals on the assets of the cash-generating units were included in the cost of goods sold, selling costs, and research and development expenses. The impairment losses and impairment loss reversals reflected the difference between the respective carrying amounts and their fair value less costs of disposal.

The table below indicates the capital cost factors used in the impairment testing on the cash-generating units of the Crop Science segment.

B 14/2

Impairment Testing Parameters

		After-tax cost of capital	
%	Q4 2021	Q2 2022	Q4 2022
Corn Seed & Traits	8.5	9.7	10.5
Soybean Seed & Traits	8.1	9.1	9.9
Glyphosate	9.0	10.3	11.5
Dicamba	6.6	7.3	7.7
Cotton seed	6.8	7.3	7.6
Canola	7.1	8.2	8.3
Vegetable Seeds	8.5	10.1	9.9

Our regular annual impairment testing in the fourth quarter did not give rise to any material impairment losses or impairment loss reversals in the Pharmaceuticals and Consumer Health segments.

In the Pharmaceuticals segment, impairment losses of €246 million were recognized in 2022 – on top of those recorded in the second quarter – due to the ongoing evaluation of individual research and development projects during the year.

Changes in intangible assets in 2021 were as follows:

B 14/3

Changes in Intangible Assets (Previous Year)

€ million	Acquired goodwill	Patents and technologies	Trademarks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2020	**40,088**	**29,596**	**12,848**	**3,508**	**1,725**	**5,646**	**3,035**	**96,446**
Acquisitions	1,448	55	6	–	–	43	–	1,552
Capital expenditures	–	99	–	83	–	103	507	792
Retirements	–	(157)	(35)	(49)	–	(34)	(38)	(313)
Transfers	–	571	–	1	–	(571)	(1)	–
Transfers (IFRS 5)	–	–	(75)	–	–	–	–	(75)
Divestments/changes in scope of consolidation	(4)	–	–	–	–	–	1	(3)
Inflation adjustment (IAS 29)	52	3	–	1	–	–	3	59
Exchange differences	2,444	1,482	618	117	3	343	104	5,111
December 31, 2021	**44,028**	**31,649**	**13,362**	**3,661**	**1,728**	**5,530**	**3,611**	**103,569**
Accumulated amortization and impairment, December 31, 2020	**3,670**	**17,778**	**6,491**	**1,983**	**1,680**	**1,292**	**1,710**	**34,604**
Retirements	–	(155)	(34)	(48)	–	(33)	(26)	(296)
Amortization and impairment losses	–	2,019	631	179	7	309	379	3,524
Amortization	–	1,292	375	149	7	–	360	2,183
Impairment losses	–	727	256	30	–	309	19	1,341
Impairment loss reversals	–	(1,293)	(466)	(39)	–	(284)	–	(2,082)
Transfers	–	149	–	–	–	(149)	–	–
Transfers (IFRS 5)	–	–	(27)	–	–	–	–	(27)
Divestments/changes in scope of consolidation	(4)	–	–	–	–	–	(2)	(6)
Inflation adjustment (IAS 29)	47	3	–	1	–	–	3	54
Exchange differences	209	722	279	79	2	95	48	1,434
December 31, 2021	**3,922**	**19,223**	**6,874**	**2,155**	**1,689**	**1,230**	**2,112**	**37,205**
Carrying amounts, December 31, 2021	**40,106**	**12,426**	**6,488**	**1,506**	**39**	**4,300**	**1,499**	**66,364**
Carrying amounts, December 31, 2020	**36,418**	**11,818**	**6,357**	**1,525**	**45**	**4,354**	**1,325**	**61,842**

The long-term growth rates and cost of capital factors used in the impairment testing of goodwill in 2021 and 2022 are shown in the following table:

B 14/4

Impairment Testing Parameters

	Growth rate		After-tax cost of capital	
%	**2021**	**2022**	**2021**	**2022**
Crop Science	2.0	**2.0**	8.7	**10.0**
Pharmaceuticals	0.0	**0.0**	5.1	**5.6**
Consumer Health	1.0	**1.0**	6.3	**8.2**

Testing goodwill for impairment involves calculating the fair value less costs to sell. No impairment losses were recognized on goodwill in 2021.

A sensitivity analysis undertaken for the impairment testing of goodwill in the Pharmaceuticals and Consumer Health segments at year-end was based on a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital or a one-percentage-point reduction in the long-term growth rate. As in the prior year, the sensitivity analysis showed that no impairment loss would need to be recognized for the Pharmaceuticals and Consumer Health segments in the event of a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital, or a one-percentage-point reduction in the long-term growth rate. At the Crop Science segment, a 10% reduction in future cash flows would lead to an impairment loss of approximately €4.6 billion, a 10% increase in the weighted average cost of capital to an impairment loss of approximately €5.1 billion, and a one-percentage-point reduction in the long-term growth rate to an impairment loss of approximately €4.2 billion, each of which would have led to an additional impairment loss on goodwill. The prior-year analysis showed that if the cash flow decreased by 10%, the weighted average cost of capital increased by 10% or the long-term growth rate decreased by one percentage point, no impairment loss would need to be recognized.

The following table shows the sensitivities of the cash-generating units in relation to a 10% increase in the weighted average cost of capital and a 10% reduction in future cash flows:

B 14/5

Sensitivities of the Cash-Generating Units

€ million	WACC +10%	Cash flow −10%
Corn Seed & Traits	–708	–1,474
Soybean Seed & Traits	–105	–234
Glyphosate	–71	–182
Cotton seed	–50	–148
Canola	–25	–63
Vegetable Seeds	–80	–137

The levels at which impairment testing is performed are explained in Note [3]. Goodwill and unamortized intangible assets that are of material significance for the Bayer Group are allocated to the following segments:

B 14/6

Intangible Assets with an Indefinite Useful Life

Reporting segment	Goodwill (€ million)		Material intangible assets with an indefinite useful life (€ million)	
	2021	2022	2021	2022
Crop Science	24,524	23,623	2,982	2,758
Pharmaceuticals	11,441	11,670	1,303	1,001
Consumer Health	4,141	4,278	15	5

Research and development projects not yet available for use were included in unamortized intangible assets at a total amount of €3,764 million as of the end of 2022 (2021: €4,300 million). In the area of goodwill, €77 million was allocated to other segments. In the case of research and development projects, the point in time from which a capitalized asset can be expected to generate an economic benefit for the company cannot be determined. Such assets are therefore classified as having an indefinite useful life.

Another unamortized intangible asset is the Bayer Cross, which was reacquired for the North America region in 1994, having been awarded to the United States and Canada under the reparations agreements at the end of the First World War. The period for which the Bayer Group will derive an economic benefit from this name cannot be determined as Bayer intends to make continuous use of it. The Bayer Cross is capitalized at €108 million (2021: €108 million).

15. Property, plant and equipment

Changes in property, plant and equipment in 2022 were as follows:

B 15/1

Changes in Property, Plant and Equipment

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2021	**9,827**	**10,752**	**2,483**	**3,126**	**26,188**
Acquisitions	–	–	–	–	–
Capital expenditures	551	297	256	1,693	2,797
Retirements	(365)	(482)	(210)	(43)	(1,100)
Transfers	343	1,244	35	(1,622)	–
Transfers (IFRS 5)	(128)	(88)	(26)	4	(238)
Divestments/changes in the scope of consolidation	–	(3)	1	–	(2)
Inflation adjustment (IAS 29)	115	108	18	18	259
Exchange differences	135	156	44	98	433
December 31, 2022	**10,478**	**11,984**	**2,601**	**3,274**	**28,337**
Accumulated depreciation and impairments, December 31, 2021	**4,376**	**6,751**	**1,711**	**662**	**13,500**
Retirements	(256)	(387)	(182)	(34)	(859)
Depreciation and impairment losses	548	954	313	7	1,822
Depreciation	523	759	309	–	1,591
Impairment losses	25	195	4	7	231
Impairment loss reversals	(8)	–	(1)	–	(9)
Transfers	4	650	(19)	(635)	–
Transfers (IFRS 5)	(44)	(46)	(14)	–	(104)
Divestments/changes in the scope of consolidation	–	1	–	–	1
Inflation adjustment (IAS 29)	51	80	12	–	143
Exchange differences	33	67	24	45	169
December 31, 2022	**4,704**	**8,070**	**1,844**	**45**	**14,663**
Carrying amounts, December 31, 2022	**5,774**	**3,914**	**757**	**3,229**	**13,674**
Carrying amounts, December 31, 2021	**5,451**	**4,001**	**772**	**2,464**	**12,688**

Impairment losses on property, plant and equipment amounted to €231 million (2021: €106 million) and primarily comprised an amount of €170 million resulting from the impairment testing in the Crop Science segment.

In 2022, borrowing costs of €38 million (2021: €30 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 2.6% (2021: 2.6%).

Right-of-use assets totaling €1,225 million (2021: €1,145 million) held under leases were capitalized in property, plant and equipment. Further information on leases is given in Note [28].

Changes in property, plant and equipment in 2021 were as follows:

B 15/2

Changes in Property, Plant and Equipment (Previous Year)

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2020	**9,083**	**9,841**	**2,147**	**2,575**	**23,646**
Acquisitions	11	–	7	–	18
Capital expenditures	334	288	257	1,333	2,212
Retirements	(263)	(241)	(97)	(4)	(605)
Transfers	290	534	76	(900)	–
Transfers (IFRS 5)	(22)	(11)	–	(7)	(40)
Divestments/changes in the scope of consolidation	31	(5)	2	2	30
Inflation adjustment (IAS 29)	38	39	8	4	89
Exchange differences	325	307	83	123	838
December 31, 2021	**9,827**	**10,752**	**2,483**	**3,126**	**26,188**
Accumulated depreciation and impairments, December 31, 2020	**3,933**	**6,046**	**1,400**	**544**	**11,923**
Retirements	(164)	(196)	(51)	2	(409)
Depreciation and impairment losses	497	723	300	78	1,598
Depreciation	483	711	298	–	1,492
Impairment losses	14	12	2	78	106
Impairment loss reversals	(32)	(7)	(2)	(8)	(49)
Transfers	–	(4)	4	–	–
Transfers (IFRS 5)	(13)	(10)	1	–	(22)
Divestments/changes in the scope of consolidation	30	3	–	–	33
Inflation adjustment (IAS 29)	17	31	7	–	55
Exchange differences	108	165	52	46	371
December 31, 2021	**4,376**	**6,751**	**1,711**	**662**	**13,500**
Carrying amounts, December 31, 2021	**5,451**	**4,001**	**772**	**2,464**	**12,688**
Carrying amounts, December 31, 2020	**5,150**	**3,795**	**747**	**2,031**	**11,723**

Investment property

The total carrying amount of investment property as of December 31, 2022, was €124 million (December 31, 2021: €136 million). The fair value of this property was €669 million (2021: €700 million). The rental income from investment property was €22 million (2021: €38 million), and the operating expenses directly allocable to this property amounted to €2 million (2021: €6 million).

16. Investments accounted for using the equity method

Some 43 (2021: 33) associates and five (2021: six) joint ventures were accounted for in the consolidated financial statements using the equity method. A list of these companies is available at www.bayer.com/shareownership2022.

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the associates and joint ventures accounted for using the equity method:

B 16/1

Earnings Data and Carrying Amounts of Companies Accounted for Using the Equity Method

	Associates		Joint ventures	
€ million	2021	2022	2021	2022
Income after income taxes	(293)	(586)	(42)	(62)
Other comprehensive income after income taxes	64	16	–	–
Total comprehensive income after income taxes	(229)	(570)	(42)	(62)
Share of income after income taxes[1]	**70**	**(117)**	**(21)**	**(33)**
Share of total comprehensive income after income taxes	121	(104)	(21)	(33)
Carrying amount as of December 31	**496**	**826**	**133**	**67**

[1] Also including gains from remeasurement of investments accounted for using the equity method due to the loss of significant influence and the fact that they then ceased being accounted for using the equity method

17. Other financial assets

The other financial assets were comprised as follows:

B 17/1

Other Financial Assets

	Dec. 31, 2021		Dec. 31, 2022	
€ million	Total	Of which current	Total	Of which current
AC[1]	731	571	230	32
FVTPL[1]	3,923	2,506	6,359	4,950
of which debt instruments	3,714	2,474	6,295	4,947
of which equity instruments	209	32	64	3
FVTOCI[1]	504	98	395	–
of which equity instruments (no recycling)	504	98	395	–
Receivables from derivatives	181	162	244	221
Receivables under lease agreements	29	5	29	5
Total	**5,368**	**3,342**	**7,257**	**5,208**

[1] Measurement categories in accordance with IFRS 9
AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss

The AC category included interest-bearing securities of €129 million (2021: €111 million) as well as €14 million (2021: €552 million) in bank deposits. No material impairment losses were recognized for expected credit losses in 2022 or 2021.

The debt instruments in the FVTPL category included investments in money market funds totaling €4,594 million (2021: €2,473 million) as well as capital of €1,102 million (2021: €644 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) of €142 million (2021: €153 million), also provided to Bayer-Pensionskasse. It also included capital of €62 million (2021: €3 million) provided to Rheinische Pensionskasse VVaG for its effective initial fund. In 2022, Bayer-Pensionskasse and Rheinische Pensionskasse drew amounts with a nominal volume of €500 million and €57 million, respectively, from their effective initial funds as per the corresponding agreements. In this connection, the commitment volume contained in the effective initial fund agreement between Bayer-Pensionskasse and Bayer AG was increased by €500 million .

The equity instruments in the FVTPL category comprised the €61 million (2021: €177 million) interest in Century Therapeutics, Inc., United States, and the €3 million (2021: €27 million) interest in Pyxis Oncology Inc., United States.

The equity instruments in the FVTOCI category comprised the following investments:

B 17/2

Equity Instruments Measured at Fair Value Through Other Comprehensive Income

Company name	Fair value as of Dec. 31, 2021	Fair value as of Dec. 31, 2022
Pivot Bio, Inc., USA	58	62
Recursion Pharmaceuticals Inc., USA	98	47
Huma Therapeutics Ltd., UK	41	46
AMR Action Fund L.P., USA	41	44
Flagship Ventures Fund V, L.P., USA	36	22
Innovative Seed Solutions LLC, USA	42	12
Other investments	188	162
Total	**504**	**395**

No material dividends were received in 2022 or 2021.

Further information on the accounting for receivables from derivatives is given in Note [27].

18. Inventories

Inventories were comprised as follows:

B 18/1

Inventories

€ million	Dec. 31, 2021	Dec. 31, 2022
Raw materials and supplies	2,011	2,695
Work in process, finished goods and goods purchased for resale	9,164	10,720
Rights of return	95	180
Advance payments	44	41
Total	**11,314**	**13,636**

Impairment losses recognized on inventories were reflected in the cost of goods sold. They were comprised as follows:

B 18/2

Impairments of Inventories

€ million	2021	2022
Accumulated impairment losses, January 1	**(100)**	**(136)**
Impairment losses in the reporting period	(73)	(13)
Impairment loss reversals or utilization	37	43
Exchange differences	–	4
Accumulated impairment losses, December 31	**(136)**	**(102)**

The cost of goods sold included acquisition and production costs of inventories amounting to €14,693 million (2021: €13,102 million) that were recognized as expenses.

19. Trade accounts receivable

Trade accounts receivable less loss allowances amounted to €10,312 million (2021: €10,047 million) on the closing date and pertained to the following regions and countries:

B 19/1

Trade Accounts Receivable

€ million	2021	2022
North America	2,727	3,072
of which USA	2,564	2,855
Europe/Middle East/Africa	3,456	3,004
of which Germany	1,148	683
Asia/Pacific	2,080	2,129
Latin America	2,438	2,807
of which Brazil	1,282	1,446
Trade accounts receivable (before impairments)	**10,701**	**11,012**
Accumulated impairment losses	(654)	(700)
Carrying amount, December 31	10,047	10,312
of which noncurrent	277	216

Trade accounts receivable mainly comprise amounts outstanding from diverse customer groups and distribution channels (including dealers and retailers for all units of the company, pharmacies for Pharmaceuticals and Consumer Health, and farmers for Crop Science). These receivables expose the Bayer Group to a credit risk, though not to significant credit risk concentrations because the risk is spread among a large number of counterparties and customers. Receivables that were not individually impaired were classified as recoverable on the basis of established credit management processes and individual estimates of customer risks. The loss allowances recognized at the closing date contained appropriate risk provisions.

Noncurrent trade accounts receivable comprised receivables of €124 million (2021: €226 million) in connection with rights to use technologies outlicensed to a customer that were acquired through the acquisition of Monsanto.

The gross carrying amounts of trade accounts receivable were as follows:

B 19/2

Trade Accounts Receivable – Gross Carrying Amounts

€ million	Trade accounts receivable for which lifetime expected credit losses are calculated (collectively assessed)	Trade accounts receivable that are credit-impaired	Total
Gross carrying amounts as of January 1, 2021	**9,210**	**526**	**9,736**
Changes resulting from trade accounts receivables recognized, derecognized or written off in the reporting period	202	218	420
Transfer to credit-impaired trade accounts receivable	(33)	33	–
Transfer from credit-impaired trade accounts receivable	38	(38)	–
Write-offs	–	(35)	(35)
Other changes:			
from exchange differences	189	7	196
Gross carrying amounts as of December 31, 2021	**9,606**	**711**	**10,317**
Changes resulting from trade accounts receivables recognized, derecognized or written off in the reporting period	326	93	419
Transfer to credit-impaired trade accounts receivable	(23)	23	–
Transfer from credit-impaired trade accounts receivable	50	(50)	–
Write-offs	–	(43)	(43)
Other changes:			
from exchange differences	(104)	(8)	(112)
Gross carrying amounts as of December 31, 2022	**9,855**	**726**	**10,581**

Only including receivables at amortized cost

Loss allowances on trade accounts receivable were as follows:

B 19/3

Trade Accounts Receivable – Loss Allowances

€ million	Lifetime expected credit losses (collectively assessed)	Trade accounts receivable that are credit-impaired	Total
Loss allowances as of January 1, 2021	**253**	**368**	**621**
Changes resulting from loss allowances newly recognized or derecognized in the reporting period and additions/reductions to existing loss allowances	(159)	219	60
Transfer from loss allowances for credit-impaired trade accounts receivable	1	(1)	–
Changes due to write-offs	–	(35)	(35)
Other changes:			
from exchange differences	3	5	8
Loss allowances as of December 31, 2021	**98**	**556**	**654**
Changes resulting from loss allowances newly recognized or derecognized in the reporting period and additions/reductions to existing loss allowances	(20)	115	95
Transfer from loss allowances for credit-impaired trade accounts receivable	1	(1)	–
Write-offs	–	(43)	(43)
Other changes:			–
from exchange differences	(2)	(4)	(6)
Loss allowances as of December 31, 2022	**77**	**623**	**700**

Only including receivables at amortized cost

The expected loss rates were as follows:

B19/4

Trade Accounts Receivables – Expected Loss Rates

	Expected loss rates				Credit-impaired	2022 total
€ million	0 to 1%	> 1 to 5%	> 5 to 10%	> 10%		
Gross carrying amount	7,483	2,274	43	55	726	**10,581**
Loss allowance provision	26	40	3	8	623	**700**

Only including receivables at amortized cost

B19/5

Trade Accounts Receivables – Expected Loss Rates (Previous Year)

	Expected loss rates				Credit-impaired	2021 total
€ million	0 to 1%	> 1 to 5%	> 5 to 10%	> 10%		
Gross carrying amount	7,255	2,060	261	30	711	**10,317**
Loss allowance provision	30	45	16	7	556	**654**

Only including receivables at amortized cost

An excess-of-loss policy exists for the Pharmaceuticals and Consumer Health segments as part of a global credit insurance program. More than 80% of the receivables of these segments are insured up to a maximum total annual compensation payment of €150 million (2021: €150 million). A global excess-of-loss policy is in place for the Crop Science segment. In this global credit insurance program, more than 80% of this segment's receivables are insured up to a maximum total annual compensation payment of €500 million (2021: €500 million).

A further €774 million (2021: €802 million) of receivables was secured by advance payments, letters of credit or guarantees or by liens on land, buildings or harvest yields.

20. Other receivables

Other receivables were comprised as follows:

B 20/1

Other Receivables

	Dec. 31, 2021		Dec. 31, 2022	
€ million	Total	Of which current	Total	Of which current
Other tax receivables	891	883	**988**	**980**
Deferred charges	319	307	**330**	**297**
Net defined benefit asset	800	–	**596**	**–**
Assets related to other long-term employee benefits	209	–	**148**	**–**
Company-owned life insurance ("COLI")	95	–	**91**	**–**
Receivables from employees	44	42	**47**	**47**
Reimbursement claims	126	119	**34**	**28**
Miscellaneous receivables	601	358	**754**	**571**
Total	**3,085**	**1,709**	**2,988**	**1,923**

Other receivables are stated net of impairment losses of €3 million (2021: €3 million). Miscellaneous receivables included advanced payments for services amounting to €130 million (2021: €104 million).

21. Equity

The individual equity components and the changes therein during 2021 and 2022 are shown in the Bayer Group Consolidated Statements of Changes in Equity.

Capital management

The foremost objectives of our financial management are to maintain business operations long term, help bring about a sustained increase in Bayer's value for the benefit of all stakeholders and to ensure the Group's creditworthiness and liquidity. The pursuit of these goals means reducing our cost of capital, optimizing our capital structure, improving our financing cash flow and effectively managing risk.

The Group's capital management is based on the debt indicators used by the rating agencies. These indicators, which vary in their design, represent the ratio of period earnings to debt. The aim of our financial strategy is to regain long-term "A" ratings in the future. The contracted rating agencies assess Bayer as follows: S & P Global assigns a long-term rating of BBB and a short-term rating of A-2 with a stable outlook, Moody's a Baa2/P-2 with a negative outlook, and Fitch Ratings a BBB+/F2 with a stable outlook. These investment grade ratings from all three agencies reflect the company's high solvency and ensure access to a broad investor base for financing purposes.

In addition to utilizing cash inflows from our operational business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as subordinated hybrid bonds and a potential share buyback program. Net financial debt comprises bonds, liabilities to banks, lease liabilities, liabilities from derivative financial instruments and other financial liabilities less receivables from derivative financial instruments, cash and cash equivalents as well as current financial assets.

Bayer is not subject to any minimum capital requirements from major financing measures.

Capital stock and capital reserves

The capital stock of Bayer AG on December 31, 2022, amounted to €2,515 million (2021: €2,515 million), divided into 982,424,082 (2021: 982,424,082) registered no-par shares, and was fully paid in. Each no-par share confers one voting right.

B 21/1

Fully Issued Shares		
Number of shares	2021	2022
Total as of January 1	**982,424,082**	**982,424,082**
Shares purchased and reissued	–	–
Total as of December 31	**982,424,082**	**982,424,082**

Capital reserves contain premiums from the issuance of shares.

Accumulated comprehensive income

Accumulated comprehensive income comprises retained earnings and accumulated other comprehensive income. The retained earnings comprise prior years' undistributed income of consolidated companies and all remeasurements of the net defined benefit liability for pension or other post-employment benefits that are recognized outside profit or loss. The accumulated other comprehensive income comprises exchange rate effects recognized outside profit or loss that arise from the translation of the annual financial statements of subsidiaries outside the eurozone, the changes in fair values of cash flow hedges and equity instruments, and the revaluation surplus.

Dividend

Under the German Stock Corporation Act (AktG), the dividend payment is determined by the distributable profit reported in the annual financial statements of Bayer AG, which are prepared according to the German Commercial Code. Retained earnings were diminished by payment of the dividend of €2.00 per share for 2021. The proposed dividend for the 2022 fiscal year is €2.40 per share, which – based on the current number of shares – would result in a total dividend payment of €2,358 million. Payment of the proposed dividend is contingent upon approval by the stockholders at the Annual Stockholders' Meeting and therefore is not recognized as a liability in the consolidated financial statements.

Equity attributable to noncontrolling interest

The changes in noncontrolling interest in equity during 2021 and 2022 are shown in the following table:

B 21/2

Changes in Noncontrolling Interest in Equity

€ million	2021	2022
January 1	**152**	**148**
Changes in equity not recognized in profit or loss		
Exchange differences on translation of operations outside the eurozone	13	(9)
Other changes in equity	(9)	18
Dividend payments	(30)	(20)
Income after income taxes	**22**	**16**
December 31	**148**	**153**

Noncontrolling interest mainly pertained to the following companies:

B 21/3

Material Noncontrolling Interests

	Bayer CropScience Limited, India		Bayer LLC Saudi Arabia, Saudi Arabia		Rede Agro Fidelidade e Intermediacao S.A., Brazil	
€ million	2021	2022	2021	2022	2021	2022
Interest held in noncontrolling interests (%)	28.6%	28.6%	25.0%	25.0%	20.0%	31.2%
Equity attributable to noncontrolling interest	145	133	4	3	–	16
Dividends paid to noncontrolling interest	22	20	–	–	–	1
Noncurrent assets	534	487	2	4	4	9
Current assets	390	423	179	124	126	183
Noncurrent liabilities	18	28	6	5	36	5
Current liabilities	174	193	160	112	86	159
Sales	552	641	145	151	–	23
Income after income taxes	68	61	4	(5)	–	8
of which attributable to noncontrolling interest	19	18	1	(1)	–	2
Total comprehensive income	117	28	4	(4)	–	8
of which attributable to noncontrolling interest	33	8	1	(1)	–	3
Net cash provided by (used in) operating activities	22	81	–	33	–	2
Net cash provided by (used in) investing activities	22	6	(7)	11	–	4
Net cash provided by (used in) financing activities	(82)	(71)	8	(42)	–	12

22. Provisions for pensions and other post-employment benefits

Provisions were established for defined benefit obligations pertaining to pensions and other post-employment benefits. The net liability was accounted for as follows:

B 22/1

Net Defined Benefit Liability Reflected in the Statement of Financial Position

	Pensions		Other post-employment benefits		Total	
€ million	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022
Provisions for pensions and other post-employment benefits (net liability)	**7,071**	**4,286**	**104**	**102**	**7,175**	**4,388**
of which Germany	6,082	3,575	–	–	6,082	3,575
of which other countries	989	711	104	102	1,093	813
Assets arising from overfunded pension plans (net asset)	**798**	**596**	**2**	**–**	**800**	**596**
of which Germany	20	61	–	–	20	61
of which other countries	778	535	2	–	780	535
Net defined benefit liability	**6,273**	**3,690**	**102**	**102**	**6,375**	**3,792**
of which Germany	6,062	3,514	–	–	6,062	3,514
of which other countries	211	176	102	102	313	278

The expenses for defined benefit plans for pensions and other post-employment benefits comprised the following components:

B 22/2

Expenses for Defined Benefit Plans

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
€ million	2021	2022	2021	2022	2021	2022	2021	2022
Current service cost	269	294	123	121	392	415	14	14
Past service cost	4	–	(24)	(4)	(20)	(4)	(8)	–
of which plan curtailments	–	–	(14)	(2)	(14)	(2)	–	–
Plan settlements	–	–	(2)	–	(2)	–	1	1
Plan administration cost paid out of plan assets	2	2	8	6	10	8	–	–
Net interest	62	69	12	5	74	74	7	7
Total	**337**	**365**	**117**	**128**	**454**	**493**	**14**	**22**

In addition, a net gain of €2,557 million (2021: €1,593 million) from remeasurements of the net defined benefit liability was recognized in 2022 outside profit or loss. Of this amount, €2,632 million (2021: €1,539 million) related to pension obligations, €9 million (2021: €60 million) to other post-employment benefit obligations, and minus €84 million (2021: minus €6 million) to the effects of the asset ceiling. Plan curtailments of minus €2 million were made in 2022 (2021: minus €14 million).

The net defined benefit liability developed as follows:

B 22/3

Changes in Net Defined Benefit Liability

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2022	**(17,433)**	**11,371**	**–**	**(6,062)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	11	(9)	–	2
Current service cost	(294)			(294)
Past service cost	–			–
Net interest	(205)	136	–	(69)
Net actuarial gain/(loss)	4,685			4,685
of which due to changes in financial parameters	4,763			4,763
of which due to changes in demographic parameters	–			–
of which experience adjustments	(78)			(78)
Return on plan assets excluding amounts recognized as interest income		(2,090)		(2,090)
Remeasurement of asset ceiling			(83)	(83)
Employer contributions		14		14
Employee contributions	(76)	29		(47)
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	179	(179)		–
Benefits paid by the company	432			432
Plan administration cost paid from plan assets		(2)		(2)
December 31, 2022	**(12,701)**	**9,270**	**(83)**	**(3,514)**
Other countries				
January 1, 2022	**(8,962)**	**8,666**	**(17)**	**(313)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	6	(2)	–	4
Current service cost	(135)			(135)
Past service cost	4			4
Gains/(losses) from plan settlements	–			–
Net interest	(221)	211	(2)	(12)
Net actuarial gain/(loss)	2,057			2,057
of which due to changes in financial parameters	2,156			2,156
of which due to changes in demographic parameters	(21)			(21)
of which due to experience adjustments	(78)			(78)
Return on plan assets excluding amounts recognized as interest income		(2,011)		(2,011)
Remeasurement of asset ceiling			(1)	(1)
Employer contributions		40		40
Employee contributions	(21)	21		–
Payments due to plan settlements	17	(17)		–
Benefits paid out of plan assets	379	(379)		–
Benefits paid by the company	135			135
Plan administration costs paid out of plan assets		(6)		(6)
Exchange differences	(255)	217	(2)	(40)
December 31, 2022	**(6,996)**	**6,740**	**(22)**	**(278)**
of which other post-employment benefits	(558)	456		(102)
Total, December 31, 2022	**(19,697)**	**16,010**	**(105)**	**(3,792)**

B 22/4

Changes in Net Defined Benefit Liability (Previous Year)

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2021	**(17,966)**	**10,806**		**(7,160)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	–	–	–	–
Current service cost	(269)			(269)
Past service cost	(4)			(4)
Net interest	(159)	97	–	(62)
Net actuarial gain/(loss)	433			433
of which due to changes in financial parameters	550			550
of which due to changes in demographic parameters	–			–
of which experience adjustments	(117)			(117)
Return on plan assets excluding amounts recognized as interest income		517		517
Remeasurement of asset ceiling			–	–
Employer contributions		100		100
Employee contributions	(67)	30		(37)
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	177	(177)		–
Benefits paid by the company	422			422
Plan administration cost paid from plan assets		(2)		(2)
December 31, 2021	**(17,433)**	**11,371**		**(6,062)**
Other countries				
January 1, 2021	**(9,311)**	**8,333**	**(10)**	**(988)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	–	–	–	–
Current service cost	(137)	–	–	(137)
Past service cost	32			32
Gains/(losses) from plan settlements	1			1
Net interest	(190)	172	(1)	(19)
Net actuarial gain/(loss)	326			326
of which due to changes in financial parameters	352			352
of which due to changes in demographic parameters	31			31
of which due to experience adjustments	(57)			(57)
Return on plan assets excluding amounts recognized as interest income		323		323
Remeasurement of asset ceiling			(6)	(6)
Employer contributions		71		71
Employee contributions	(18)	18		–
Payments due to plan settlements	449	(449)		–
Benefits paid out of plan assets	357	(357)		–
Benefits paid by the company	117			117
Plan administration costs paid out of plan assets		(8)		(8)
Exchange differences	(588)	563		(25)
December 31, 2021	**(8,962)**	**8,666**	**(17)**	**(313)**
of which other post-employment benefits	(661)	559		(102)
Total, December 31, 2021	**(26,395)**	**20,037**	**(17)**	**(6,375)**

The benefit obligations pertained mainly to Germany (65%; 2021: 66%), the United States (20%; 2021: 18%) and the United Kingdom (6%; 2021: 8%). In Germany, current employees accounted for about 29% (2021: 37%), retirees or their surviving dependents for about 62% (2021: 53%) and former employees with vested pension rights for about 9% (2021: 10%) of entitlements under defined benefit plans. In the United States, current employees accounted for about 24% (2021: 27%), retirees or their surviving dependents for about 60% (2021: 56%) and former employees with vested pension rights for about 16% (2021: 17%) of entitlements under defined benefit plans.

The actual losses on the assets of defined benefit plans for pensions and for other post-employment benefits amounted to €3,650 million (2021: €1,081 million return) and €104 million (2021: €28 million return), respectively.

The following table shows the defined benefit obligations for pensions and other post-employment benefits along with the funded status of the funded obligations.

B 22/5

Defined Benefit Obligation and Funded Status

	Pension obligation		Other post-employment benefit obligation		Total	
€ million	2021	2022	2021	2022	2021	2022
Defined benefit obligation	**25,734**	**19,139**	**661**	**558**	**26,395**	**19,697**
of which unfunded	674	586	210	186	884	772
of which funded	25,060	18,553	451	372	25,511	18,925
Funded status of funded obligations						
Overfunding	825	711	114	99	939	810
Underfunding	6,408	3,712	5	15	6,413	3,727

Pension and other post-employment benefit obligations

Group companies provide retirement benefits for most of their employees, either directly or by contributing to privately or publicly administered funds. The benefits vary depending on the legal, fiscal and economic conditions of each country. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Bayer has set up funded pension plans for its employees in various countries. The most appropriate investment strategy is determined for each defined benefit pension plan based on the risk structure of the obligations (especially demographics, the current funded status, the structure of the expected future cash flows, interest sensitivity, biometric risks, etc.), the regulatory environment and the existing level of risk tolerance or risk capacity. A strategic target investment portfolio is then developed in line with the plan's risk structure, taking capital market factors into consideration. Further determinants are risk diversification, portfolio efficiency and the need for both a country-specific and a global risk/return profile centered on ensuring the payment of all future benefits. As the capital investment strategy for each pension plan is developed individually in light of the plan-specific conditions listed above, the investment strategies for different pension plans may vary considerably. The investment strategies are generally aligned less toward maximizing absolute returns and more toward the maximum probability of being able to finance pension commitments over the long term. For pension plans, stress scenarios are simulated and other risk analyses (such as value at risk) undertaken with the aid of risk management systems.

Bayer-Pensionskasse VVaG, Germany (Bayer-Pensionskasse), is one of the most significant post-employment benefit plans. It has been closed to new members since 2005. This legally independent fund is regarded as a life insurance company and therefore is subject to the German Insurance Supervision Act. The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents' and disability pensions. It constitutes a defined-benefit, multi-employer plan, to which the active members and their employers contribute. The company contribution is a certain percentage of the employee contribution. This percentage is the same for all participating employers, including those outside the Bayer Group, and is set by agreement between the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. It takes into account the differences between the actuarial estimates and the actual values for the factors used to determine liabilities and contributions. Bayer may also adjust the company contribution in agreement with the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. The plan's liability is governed by Section 1, Paragraph 1, Sentence 3 of the German Law on the Improvement of Occupational Pensions (BetrAVG). This means that if the pension plan exercises its right under the articles of association to reduce benefits, each participating employer has to make up the resulting difference. Bayer is not liable for the obligations of participating employers outside the Bayer Group, even if they cease to participate in the plan.

Pension entitlements for people who joined Bayer in Germany in 2005 or later are granted via Rheinische Pensionskasse VVaG, Germany. Future pension payments from this defined-benefit, multi-employer plan are based on contributions and the return on plan assets; a guaranteed interest rate applies.

Another important financing vehicle is Bayer Pension Trust e. V. (BPT), Germany. This covers further retirement provision arrangements of the Bayer Group, such as deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e. V., Germany, and components of other direct commitments.

The defined benefit pension plans in the United States are frozen and no significant new entitlements can be earned under these plans. The assets of all the US pension plans are held by a master trust for reasons of efficiency. The applicable regulatory framework is based on the Employee Retirement Income Security Act (ERISA), which includes a statutory 80% minimum funding requirement to avoid benefit restrictions. The actuarial risks, such as investment risk, interest-rate risk and longevity risk, remain with the company. In October 2021, both the Bayer Corporation Pension Plan and Monsanto Company Pension Plan were changed, with certain defined benefit obligations being transferred to a major US insurer. In return, the external pension provider was paid consideration of approximately US$485 million out of plan assets. The remeasurement increased the financial result for the remainder of the year through December 31, 2021, by around US$1.2 million. The insurer has assumed all legal and de facto obligations for the benefits transferred and has been responsible for the payment thereof with effect from January 1, 2022.

The defined benefit pension plans in the United Kingdom have been closed to new members for some years. Plan assets in the UK are administered by independent trustees, who are legally obligated to act solely in the interests of the beneficiaries. A technical assessment is performed every three years in line with UK regulations. This serves as the basis for developing a plan to cover any potential financing requirements. Here, too, the actuarial risks remain with the company.

The other post-employment benefit obligations outside Germany mainly comprised healthcare benefit payments for retirees in the United States.

The fair value of the plan assets to cover pension and other post-employment benefit obligations was as follows:

B 22/6

Fair Value of Plan Assets as of December 31

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
€ million	2021	2022	2021	2022	2021	2022
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	330	321	13	15
Equities and equity funds	3,182	2,388	1,862	1,206	122	73
Callable debt instruments	–	–	62	55	–	–
Noncallable debt instruments	–	–	3,195	2,712	380	320
Bond funds	4,705	3,590	1,767	1,267	–	–
Derivatives	–	–	9	6	–	–
Cash and cash equivalents	805	1,023	54	117	9	9
Other	–	–	7	9	–	–
	8,692	**7,001**	**7,286**	**5,693**	**524**	**417**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	516	544	195	95	–	–
Equities and equity funds	309	319	69	48	–	–
Callable debt instruments	792	608	5	5	–	–
Noncallable debt instruments	918	675	–	–	–	–
Bond funds	–	–	138	109	–	–
Derivatives	–	–	–	–	–	–
Cash and cash equivalents	–	–	–	–	–	–
Other	144	123	414	334	35	39
	2,679	**2,269**	**821**	**591**	**35**	**39**
Total plan assets	**11,371**	**9,270**	**8,107**	**6,284**	**559**	**456**

Plan assets included assets with a carrying amount of €2,899 million (2021: €3,535 million) whose fair values are not determined based on quoted prices in active markets.

The fair value of plan assets in Germany included real estate leased by Group companies, recognized at a fair value of €63 million (2021: €62 million), and Bayer AG shares and bonds held through investment funds, recognized at their fair values of €14 million (2021: €14 million) and €8 million (2021: €12 million), respectively.

The other plan assets comprised mortgage loans granted, other receivables and qualified insurance policies.

Risks

The risks from defined benefit plans arise partly from the defined benefit obligations and partly from the investment in plan assets. These risks include the possibility that additional contributions will have to be made to plan assets in order to meet current and future pension obligations, and negative effects on provisions and equity.

Demographic / biometric risks

Since a large proportion of the defined benefit obligations comprises lifelong pensions or surviving dependents' pensions, longer claim periods or earlier claims may result in higher benefit obligations, higher benefit expense and/or higher pension payments than previously anticipated.

Investment risks

If the actual return on plan assets were below the return anticipated on the basis of the discount rate, the net defined benefit liability would increase, assuming there were no changes in other parameters. This could happen as a result of a drop in share prices, increases in market rates of interest for certain bonds, default of individual debtors or the purchase of low-risk but low-interest bonds, for example.

Interest-rate risk

A decline in capital market interest rates, especially for high-quality corporate bonds, would increase the defined benefit obligation. This effect would be at least partially offset by the ensuing increase in the market values of the corresponding debt instruments held.

Measurement parameters and their sensitivities

The following weighted parameters were used to measure the obligations for pensions and other post-employment benefits as of December 31 of the respective year:

B 22/7

Parameters for Benefit Obligations

	Germany		Other countries		Total	
%	2021	2022	2021	2022	2021	2022
Pension obligations						
Discount rate	1.20	3.90	2.30	4.85	1.55	4.20
of which USA			2.80	5.30	2.80	5.30
of which UK			1.80	4.50	1.80	4.50
Projected future salary increases	2.25	2.75	3.30	3.50	2.60	3.00
Projected future benefit increases	1.80	2.70	3.00	3.15	2.20	2.85
Other post-employment benefit obligations						
Discount rate	–	–	3.50	5.90	3.50	5.90

In Germany the Heubeck RT 2018 G mortality tables were used, in the United States the MP-2021 Mortality Tables, and in the United Kingdom 100% of S3NMA and 101% of S3NFA.

Due to the currently high short- and medium-term inflation expectations, the projected future benefit increases in Germany were raised according to our methodology to 2.70% (2021: 1.80%). The process is consistent with the prior year and takes into account short- and long-term inflation forecasts, demographic specifics as well as the adjustment mechanism at Bayer (three-year interval).

The parameter sensitivities were computed by expert actuaries based on a detailed evaluation similar to that performed to obtain the data presented in Table B 22/3. Altering individual parameters by 0.5 percentage points or mortality by 10% per beneficiary while leaving the other parameters unchanged would have impacted pension and other post-employment benefit obligations as of year-end 2022 as follows:

B 22/8

Sensitivity of Benefit Obligations

	Germany		Other countries		Total	
€ million	Increase	Decrease	Increase	Decrease	Increase	Decrease
Pension obligations						
0.5%-pt. change in discount rate	(799)	894	(314)	343	(1,113)	1,237
0.5%-pt. change in projected future salary increases	13	(12)	42	(40)	55	(52)
0.5%-pt. change in projected future benefit increases	570	(523)	77	(51)	647	(574)
10% change in mortality	(676)	656	(145)	152	(821)	808
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(22)	23	(22)	23
10% change in mortality	–	–	(13)	14	(13)	14

B 22/9

Sensitivity of Benefit Obligations (Previous Year)

	Germany		Other countries		Total	
€ million	Increase	Decrease	Increase	Decrease	Increase	Decrease
Pension obligations						
0.5%-pt. change in discount rate	(1,382)	1,580	(512)	571	(1,894)	2,151
0.5%-pt. change in projected future salary increases	29	(27)	60	(57)	89	(84)
0.5 %-pt. change in projected future benefit increases	915	(832)	144	(103)	1,059	(935)
10% change in mortality	(1,056)	1,057	(248)	268	(1,304)	1,325
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(31)	34	(31)	34
10% change in mortality	–	–	(19)	22	(19)	22

Provisions are also established for the obligations, mainly of US subsidiaries, to provide post-employment benefits in the form of healthcare cost payments for retirees. The valuation of healthcare costs was based on the assumption that they will increase at a rate of 7.0% (2021: 6.5%). It was assumed that this rate of increase will gradually decline to 5.0% (2021: 5.0%) by 2031 (2021: by 2028).

The following table shows the impact on other post-employment benefit obligations and total benefit expense of a one-percentage-point change in the assumed cost increase rates:

B 22/10

Sensitivity to Healthcare Cost Increases

	Increase of 1%-pt.		Decrease of 1%-pt.	
€ million	2021	2022	2021	2022
Impact on other post-employment benefit obligations	39	27	(33)	(24)
Impact on benefit expense	2	2	(1)	(1)

Payments made and expected future payments

The following payments or asset contributions correspond to the employer contributions made or expected to be made to funded benefit plans:

B 22/11

Employer Contributions Paid or Expected

	Germany			Other countries		
€ million	2021	2022	2023 expected	2021	2022	2023 expected
Pension obligations	100	14	109	88	66	55
Other post-employment benefit obligations	–	–	–	(17)	(26)	3
Total	**100**	**14**	**109**	**71**	**40**	**58**

Bayer had previously been committed to making deficit contributions for its UK pension plans of approximately GBP27 million annually, although this fixed commitment ceased to apply from 2022. For its US pension plans, Bayer did not make any deficit contributions in 2022 or in 2021, and expects to make zero or only very low regular payments in 2023 as most of these plans are closed and frozen.

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

B 22/12

Future Benefit Payments

	Payments out of plan assets				Payments by the company			
	Pensions		Other post-employment benefits		Pensions		Other post-employment benefits	
€ million	Germany	Other countries	Other countries	Total	Germany	Other countries	Other countries	Total
2023	187	399	22	608	468	105	26	599
2024	188	405	21	614	473	104	26	603
2025	189	407	22	618	480	108	26	614
2026	189	411	22	622	488	118	26	632
2027	190	415	22	627	491	123	27	641
2028–2032	965	2,113	107	3,185	2,518	726	137	3,381

The weighted average term of the pension obligations is 14.2 years (2021: 17.1 years) in Germany and 11.5 years (2021: 13.4 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 9.1 years (2021: 10.7 years).

23. Other provisions

Changes in the various provision categories in 2022 were as follows:

B 23/1

Changes in Other Provisions

€ million	Other taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
January 1, 2022	**36**	**701**	**1,415**	**373**	**9,039**	**3,240**	**795**	**15,599**
Additions	19	33	402	83	842	3,331	473	**5,183**
Utilization	(19)	(37)	(424)	(182)	(3,029)	(2,711)	(348)	**(6,750)**
Reversal	(3)	(141)	(142)	(5)	(160)	(596)	(200)	**(1,247)**
Reclassification to liabilities held for sale	–	–	–	–	–	(8)	(2)	**(10)**
Interest cost	–	16	5	1	236	(25)	6	**239**
Exchange differences	1	45	4	14	538	52	15	**669**
December 31, 2022	**34**	**617**	**1,260**	**284**	**7,466**	**3,283**	**739**	**13,683**
of which current	12	76	381	232	1,958	2,249	184	**5,092**

The provisions were partly offset by reimbursement claims in the amount of €22 million (2021: €30 million), which were recognized as receivables. These reimbursement claims primarily related to product liability. The utilization of provisions for litigations totaling €3,029 million contains a reclassification of settlement payments due in connection with the PCB litigation to other liabilities. The commitment amounted to €1,240 million and was paid in January 2023.

Environmental protection

Provisions for environmental protection are mainly established for the expected costs of ensuring compliance with environmental regulations, remediation work on contaminated land, recultivation of landfills, and redevelopment and water protection measures.

Restructuring

Provisions for restructuring only cover expenses that arise directly from restructuring measures, are necessary for restructuring and are not related to future business operations. Such expenses include severance payments to employees and compensation payments in respect of rented property that is no longer used.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities or fundamental reorganizations of business units.

Provisions for restructuring included €1,233 million (2021: €1,362 million) for severance payments and €27 million (2021: €53 million) for other restructuring expenses, which mainly comprised other costs related to the outsourcing of research activities and the closure of production facilities. The breakdown of provisions by segment was as follows: €170 million (2021: €249 million) at Crop Science, €633 million (2021: €508 million) at Pharmaceuticals, €20 million (2021: €24 million) at Consumer Health and €437 million (2021: €634 million) in Enabling Functions/All Other Segments.

The decline in provisions for restructuring at Crop Science was particularly attributable to the ongoing severance payments resulting in part from reorganization measures due to the Monsanto integration.

At Pharmaceuticals, the announcement of specific restructuring plans concerning the headcount reduction in Japan and France in particular in connection with the ongoing transformation program led to an increase in restructuring-related provisions. This global program is aimed at driving a fundamental organizational transformation in step with the long-term strategy and Bayer's mission as a leading science company to

deliver groundbreaking innovation. The ongoing utilization of the existing provisions had an offsetting effect.

Additional provisions were also established for Consumer Health in conjunction with the current transformation initiative and the advanced stage of internal communication. The initiative aims to make Bayer the best consumer health company and empower the transformation of everyday health. Here as well, the utilization of the existing provisions had an offsetting effect.

The significant decline for Enabling Functions/All Other Segments was largely due to the further utilization of the existing provisions for the restructuring program communicated at the end of 2018.

Trade-related commitments

Trade-related provisions are recorded mainly for obligations related to services performed but not yet invoiced and to sales commissions not recognized under trade accounts payable.

Litigations

The legal risks currently considered to be material, and their development, are described in Note [30].

Personnel commitments

Personnel-related provisions include those for variable, performance-related one-time payments to employees, stock-based payments, and payments related to long-service anniversaries, early retirement programs and pre-retirement part-time working arrangements. Provisions for severance payments resulting from restructuring are reflected in provisions for restructuring.

Stock-based compensation programs

Bayer offers the stock-based compensation programs Aspire 2.0, Aspire 3.0 and BayShare 2022 collectively to different groups of employees. The Aspire 2.0 and Aspire 3.0 programs are accounted for in accordance with the requirements of IFRS 2 concerning cash-settled share-based payment transactions. By contrast, the BayShare stock-based compensation program is accounted for in line with the requirements of IFRS 2 concerning equity-settled share-based payment transactions. Provisions are established for all awards to be made under the Aspire 2.0 and Aspire 3.0 programs. The provisions are recognized in the amount of the fair value of the obligations existing as of the date of the financial statements. All resulting valuation adjustments are recognized in profit or loss.

The following table shows the changes in the provisions established for Aspire 2.0 and Aspire 3.0:

B 23/2

Changes in Provisions

€ million	Aspire
January 1, 2022	**579**
Additions	730
Utilization	(117)
Reversal	(370)
Exchange differences	20
December 31, 2022	**842**

The value of the Aspire 2.0 tranche that was fully earned at the end of 2022, resulting in payments at the beginning of 2023, was €245 million (2021: €107 million).

The net expense for all stock-based compensation programs was €365 million (2021: €238 million), including €5 million (2021: €5 million) for the BayShare stock participation program. For information on the hedging of stock-based compensation for our employees and the resulting additional effects on the income statement, see Note [27.3].

Long-term incentive program Aspire 2.0

Aspire 2.0 is based on a percentage of each employee's annual base salary, the percentage varying according to their position. This target value is multiplied by the employee's STI (short-term incentive) payment factor for the previous year to give the Aspire grant value. The STI payment factor reflects the business performance under the global short-term incentive program. The Aspire grant value is converted into virtual Bayer shares by dividing it by the share price at the start of the program. The program's performance is based on these virtual shares. Each tranche runs for four years. Detailed information on the stock-based compensation of the Board of Management can be found in the Compensation Report (www.bayer.com/cpr).

The fair value of the obligations is determined from the price of Bayer stock at year-end and the dividends paid up to that time. The payment made at the end of each tranche is determined by multiplying the number of virtual shares by the Bayer share price at that time and adding an amount equivalent to the dividends paid during the period of the tranche. The maximum payment for Aspire 2.0 is 250% of the Aspire grant value.

At the start of 2023, a payment of 98% was made for the tranche issued in 2019.

Long-term incentive program Aspire 3.0

Due to the introduction of Aspire 3.0 in 2020, Bayer's long-term compensation program now includes a series of additional strategic performance indicators that are aligned toward the company's strategy. Eligibility was limited to the members of the Board of Management in the first year of the program. However, since the beginning of 2021, it has also been made available to eligible employees below this level.

As with Aspire 2.0, the annual tranches are granted over a four-year term in the form of virtual shares. This program is also based on a percentage of each employee's annual base salary (the so-called LTI target amount), the percentage varying according to their position. The number of virtual shares is determined by dividing the LTI target amount by the price of Bayer shares at the beginning of the program. However, the individual STI payout factor is no longer taken into consideration when calculating the number of virtual shares.

The fair value of the obligations continues to be determined from the price of Bayer stock and the dividends already paid. Compared with Aspire 2.0, however, there is also an additional performance factor to be taken into account that comprises three weighted performance components: relative capital market performance (40%), return on investment (40%) and sustainability (20%). The final LTI payout is determined by multiplying the number of virtual shares by the Bayer share price at the end of the performance period and the performance factor mentioned above, and then adding an amount equivalent to the dividends paid during the performance period. The maximum payout is 250% of the LTI target amount. Detailed information on the stock-based compensation of the Board of Management and the three performance components mentioned above can be found in the Compensation Report (www.bayer.com/cpr).

BayShare 2022

All management levels and nonmanagerial employees in Germany are offered a stock participation program known as BayShare, under which Bayer subsidizes their personal investments in the company's stock. On November 9, 2022, approximately 492,000 Bayer AG shares (2021: 500,000 shares) were purchased at a price of €50.11 per share (2021: €51.41 per share) for this purpose in accordance with Section 71, Paragraph 1, No. 8 of the German Stock Corporation Act. These shares corresponded to €1.3 million (2021: €1.3 million), or 0.05% (2021: 0.05%), of the capital stock. At the time of purchase, the value of the shares was €25 million (2021: €26 million). The shares were deposited in employees' securities accounts in late 2022, meaning that Bayer AG did not hold any own shares as of December 31, 2022.

The discount granted under this program in 2022 was 20% (2021: 20%) of the subscription amount. Employees stated a fixed amount that they wished to invest in shares. The maximum subscription amount in Germany was set at €2,500 (2021: €2,500) or €5,000 (2021: €5,000), depending on the employee's position. The shares purchased must be retained until December 31, 2023.

Miscellaneous

Miscellaneous provisions include those for interest payments on income taxes and other taxes, for other liabilities, except where these are allocable to other provision categories, and for decommissioning and similar obligations.

A sensitivity analysis undertaken for certain provisions that examined the impact of a five percentage point change in the probabilities of occurrence in each case did not produce any material deviations from the amount of provisions established.

24. Financial liabilities

Financial liabilities were comprised as follows:

B 24/1

Financial Liabilities

	Dec. 31, 2021		Dec. 31, 2022	
€ million	Total	Of which current	Total	Of which current
Bonds and notes	37,593	2,045	36,602	3,775
Liabilities to banks	773	772	3,484	3,482
Lease liabilities	1,165	236	1,234	282
Liabilities from derivatives	69	69	190	184
Other financial liabilities	1,272	1,269	142	138
Total	**40,872**	**4,391**	**41,652**	**7,861**

A breakdown of financial liabilities by contractual maturity is given below:

B 24/2

Maturities of Financial Liabilities

€ million	Dec. 31, 2021	€ million	Dec. 31, 2022
2022	4,391	2023	7,861
2023	3,818	2024	4,074
2024	3,850	2025	4,257
2025	4,076	2026	1,865
2026	1,826	2027	1,575
2027 or later	22,911	2028 or later	22,020
Total	**40,872**	**Total**	**41,652**

The Bayer Group has issued the following bonds and notes:

B 24/3

Bonds and Notes

	Nominal volume as of Dec. 31, 2021	Carrying amount as of Dec. 31, 2021 (€ million)	Nominal volume as of Dec. 31, 2022	Carrying amount as of Dec. 31, 2022 (€ million)
Hybrid bonds[1]				
Hybrid bond 2014/2024[2]/2074	EUR 1,500 million	1,498	EUR 1,500 million	1,499
Hybrid bond[3] 2015/2022[2]/2075	EUR 1,300 million	1,299	–	–
Hybrid bond 2019/2025[2]/2079	EUR 1,000 million	993	EUR 1,000 million	995
Hybrid bond 2019/2027[2]/2079	EUR 750 million	747	EUR 750 million	748
Hybrid bond 2022/2027[2]/2082	–	–	EUR 500 million	495
Hybrid bond 2022/2030[2]/2082	–	–	EUR 800 million	791
USD bonds[1, 4]				
Maturity < 1 year	USD 250 million	219	USD 3,500 million	3,275
Maturity > 1 year < 5 years	USD 9,114 million	8,027	USD 5,614 million	5,226
Maturity > 5 years	USD 10,800 million	9,309	USD 10,800 million	9,887
EUR bonds[1, 4]				
Maturity < 1 year	EUR 1,750 million	1,749	EUR 500 million	500
Maturity > 1 year < 5 years	EUR 4,950 million	4,936	EUR 5,950 million	5,932
Maturity > 5 years	EUR 8,800 million	8,739	EUR 7,300 million	7,254
JPY bonds[1]				
Maturity < 1 year	JPY 10 billion	77	–	–
Total		**37,593**		**36,602**

[1] The bonds are issued in the functional currency of the issuing entity and mainly have a fixed coupon.
[2] Date of first option to redeem the bond early at par
[3] The hybrid bond was repurchased before the first call date.
[4] Bonds with nominal volumes of US$1,250 million (2021: US$1,250 and €750 million) bear variable rates of interest.

Hybrid bonds

The hybrid bonds issued by Bayer AG are subordinated, and 50% of their amount is treated as equity by three contracted rating agencies. They therefore have a more limited effect on the Group's rating-specific debt indicators than senior borrowings.

In 2022, Bayer AG repurchased the €1.3 billion hybrid bond maturing in 2075 (callable on October 2, 2022) before the first call date. To finance the repurchase, new hybrid bonds with a total volume of €1.3 billion were placed in March 2022. The issuance comprised two tranches, each with a final maturity of 60 years. The first tranche in the amount of €500 million with a non-call period of 5.5 years pays a coupon of 4.5%. The second tranche in the amount of €800 million with a non-call period of 8.5 years pays a coupon of 5.375%.

Other bonds

In 2022, two bonds with a total volume of US$250 million (€229 million) were redeemed before maturity, while two bonds with a total volume of €1.75 billion and one with a nominal volume of JPY10 billion (€73 million) were redeemed at maturity.

In 2021, Bayer AG placed bonds with a total volume of €4 billion. The four tranches with volumes of between €0.8 and €1.2 billion have maturities of 4 years, 8 years, 10.5 years and 15 years. The coupons on the notes are 0.05% p.a., 0.375% p.a., 0.625% p.a. and 1.00% p.a., respectively. In 2021, five bonds with a total volume of US$4.5 billion, a bond with a nominal volume of €750 million, and a bond with a nominal volume of JPY10 billion were redeemed at maturity.

Liabilities to banks
The increase in liabilities to banks was mainly due to the drawing of a credit facility of €3 billion to help the company manage risks should the current geopolitical situation deteriorate.

Lease liabilities
Further information on lease liabilities is given in Note [28].

Other financial liabilities
Other financial liabilities as of December 31, 2022, included €80 million in commercial paper (2021: €1.2 billion).

Other information
A total of €4.5 billion in undrawn credit facilities remained available to the Bayer Group as of December 31, 2022 (December 31, 2021: €4.5 billion).

Further information on the accounting for liabilities from derivatives is given in Note [27].

25. Trade accounts payable

Trade accounts payable comprised €7,490 million (2021: €6,774 million) due within one year and €55 million (2021: €18 million) due after one year.

This figure included invoices of €215 million (2021: €181 million) paid by a bank to suppliers within the scope of supply chain financing that Bayer will pay to the bank when due.

26. Other liabilities

Other liabilities comprised the following:

B 26/1

Other Liabilities

	Dec. 31, 2021		Dec. 31, 2022	
€ million	Total	Of which current	Total	Of which current
Other tax liabilities	547	531	558	530
Liabilities from derivatives	293	252	157	148
Accrued interest on liabilities	253	253	272	272
Liabilities for social expenses	184	184	217	217
Liabilities to employees	156	155	217	217
Deferred income	79	39	76	35
Miscellaneous liabilities	2,236	681	3,414	2,365
Total	**3,748**	**2,095**	**4,911**	**3,784**

Miscellaneous liabilities included a commitment in the amount of €1,240 million for the settlement payments due in connection with the PCB litigation. The payment was made in January 2023. The amounts were reclassified from provisions for litigations to other liabilities in the fourth quarter of 2022. There were also liabilities of €1,108 million (2021: €1,095 million) for potential future milestone payments that arose in connection with the acquisition of Asklepios BioPharmaceutical, Inc. (AskBio), United States, and of €453 million (2021: €431 million) in connection with the acquisition of Vividion Therapeutics, Inc., United States.

The deferred income included €26 million (2021: €18 million) in grants and subsidies received from governments, of which €8 million (2021: €4 million) was reversed through profit or loss.

27. Financial instruments

The system used by the Bayer Group to manage credit risks, liquidity risks and the different types of market price risk (interest-rate, currency and commodity price risks), together with its objectives, methods and procedures, is outlined in the Opportunity and Risk Report, which forms part of the Combined Management Report. It also contains more detailed information on individual market price risks.

27.1 Financial instruments by category

The following tables show the carrying amounts and fair values of the individual financial assets and liabilities by category of financial instrument under IFRS 9 and a reconciliation to the corresponding line items in the statements of financial position. Since the line items “Trade accounts receivable,” “Other receivables,” “Financial liabilities” and “Other liabilities” contain both financial instruments and nonfinancial assets or liabilities (such as other tax receivables), the reconciliation is shown in the column headed “Nonfinancial assets/liabilities.”

B 27.1/1

Carrying Amounts and Fair Values of Financial Instruments

Dec. 31, 2022

Measurement category (IFRS 9)[1]		Carried at fair value [fair value for information[4]]				
	Carried at amortized cost	Based on quoted prices in active markets (Level 1)	Based on observable market data (Level 2)	Based on unobservable inputs (Level 3)	Nonfinancial assets/ liabilities	
€ million	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Total**
Trade accounts receivable	9,881	177			254	**10,312**
AC	9,881					**9,881**
FVTPL, mandatory[2]		177				**177**
Nonfinancial assets					254	**254**
Other financial assets	259	1,459	3,746	1,793		**7,257**
AC	230		[219]			**230**
FVTPL, mandatory[2]		1,395	3,524	1,440		**6,359**
FVTOCI (no recycling), designated[3]		55		340		**395**
FVTPL – derivatives – no hedge accounting		9	96	13		**118**
Derivatives – hedge accounting			126			**126**
Lease receivables	29		[29]			**29**
Other receivables	406			33	2,549	**2,988**
AC	406		[406]			**406**
FVTPL, mandatory[2]				33		**33**
Nonfinancial assets					2,549	**2,549**
Cash and cash equivalents	5,171					**5,171**
AC	5,171		[5,171]			**5,171**
Total financial assets	**15,717**	**1,636**	**3,746**	**1,826**		**22,925**
of which AC	15,688					**15,688**
of which FVTPL		1,581	3,620	1,486		**6,687**
Financial liabilities	41,377		190		85	**41,652**
AC	40,143	[28,340]	[8,298]			**40,143**
FVTPL – derivatives – no hedge accounting			171			**171**
Derivatives – hedge accounting			19			**19**
Lease liabilities	1,234					**1,234**
Nonfinancial liabilities					85	**85**
Trade accounts payable	7,545					**7,545**
AC	7,545					**7,545**
Other liabilities	2,124	9	143	1,734	901	**4,911**
AC	2,124		[2,124]			**2,124**
FVTPL (nonderivative), mandatory[2]				1,729		**1,729**
FVTPL – derivatives – no hedge accounting		9	25	5		**39**
Derivatives – hedge accounting			118			**118**
Nonfinancial liabilities					901	**901**
Total financial liabilities	**51,046**	**9**	**333**	**1,734**		**53,122**
of which AC	49,812					**49,812**
of which FVTPL		9	196	1,734		**1,939**

[1] AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss
[2] Measured at fair value through profit or loss as required by IFRS 9
[3] Measured at fair value through other comprehensive income under IFRS 9.5.7.5
[4] Fair value of the financial instruments at amortized cost under IFRS 7.29(a)

B 27.1/2

Carrying Amounts and Fair Values of Financial Instruments (Previous Year)

Dec. 31, 2021

		Carried at fair value [fair value for information[4]]				
Measurement category (IFRS 9)[1]	Carried at amortized cost	Based on quoted prices in active markets (Level 1)	Based on observable market data (Level 2)	Based on unobservable inputs (Level 3)	Nonfinancial assets/ liabilities	
€ million	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Total**
Trade accounts receivable	9,663	188			196	10,047
AC	9,663					9,663
FVTPL, mandatory[2]		188				188
Nonfinancial assets					196	196
Other financial assets	760	1,856	1,391	1,361		5,368
AC	731		[731]			731
FVTPL, mandatory[2]		1,745	1,236	942		3,923
FVTOCI (no recycling), designated[3]		98		406		504
FVTPL – derivatives – no hedge accounting		13	119	13		145
Derivatives – hedge accounting			36			36
Lease receivables	29		[29]			29
Other receivables	303			67	2,715	3,085
AC	303		[303]			303
FVTPL, mandatory[2]				67		67
Nonfinancial assets					2,715	2,715
Cash and cash equivalents	4,564					4,564
AC	4,564		[4,564]			4,564
Total financial assets	**15,290**	**2,044**	**1,391**	**1,428**		**20,153**
of which AC	15,261					15,261
of which FVTPL		1,946	1,355	1,022		4,323
Financial liabilities	40,708		69		95	40,872
AC	39,543	[32,202]	[9,999]			39,543
FVTPL – derivatives – no hedge accounting			69			69
Lease liabilities	1,165					1,165
Nonfinancial liabilities					95	95
Trade accounts payable	6,792					6,792
AC	6,792					6,792
Other liabilities	771	31	260	1,771	915	3,748
AC	771		[771]			771
FVTPL (nonderivative), mandatory[2]				1,769		1,769
FVTPL – derivatives – no hedge accounting		31	21	2		54
Derivatives – hedge accounting			239			239
Nonfinancial liabilities					915	915
Total financial liabilities	**48,271**	**31**	**329**	**1,771**		**50,402**
of which AC	47,106					47,106
of which FVTPL		31	90	1,771		1,892

[1] AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss

[2] Measured at fair value through profit or loss as required by IFRS 9

[3] Measured at fair value through other comprehensive income under IFRS 9.5.7.5

[4] Fair value of the financial instruments at amortized cost under IFRS 7.29(a)

Due to the short maturities of most trade accounts receivable and payable, other financial receivables and liabilities, and cash and cash equivalents, their carrying amounts at the closing date do not significantly differ from the fair values.

The fair values of financial assets and liabilities measured at amortized cost that are given for information are the present values of the respective future cash flows. The present values are determined by discounting the cash flows at a closing-date interest rate, taking into account the term of the assets or liabilities and also the creditworthiness of the counterparty in certain cases. Where a market price is available, however, this is deemed to be the fair value.

The fair values of financial assets measured at fair value correspond to quoted prices in active markets (Level 1), or are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2) or are the present values of the respective future cash flows, determined on the basis of unobservable inputs (Level 3).

The fair values of derivatives for which no publicly quoted prices exist in active markets (Level 1) are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2). In applying valuation techniques, credit or debt value adjustments are determined to account for the credit risk of the contractual party or Bayer.

Currency and commodity forward contracts are measured individually at their forward rates or forward prices on the closing date. These depend on spot rates or prices, including time spreads. The fair values of interest-rate hedging instruments and cross-currency interest-rate swaps were determined by discounting future cash flows over the remaining terms of the instruments at market rates of interest, taking into account any foreign currency translation as of the closing date in certain cases.

Fair values measured using unobservable inputs are categorized within Level 3 of the fair value hierarchy. This essentially applies to certain debt or equity instruments, in some cases to the fair values of embedded derivatives, and to obligations for contingent consideration in business combinations. Credit risk is frequently the principal unobservable input used to determine the fair values of debt instruments classified as “FVTPL – at fair value through profit or loss” by the discounted cash flow method. Here the credit spreads of comparable issuers are applied. A significant increase in credit risk could result in a lower fair value, whereas a significant decrease could result in a higher fair value. However, a relative change of 10% in the credit spread does not materially affect the fair value.

When determining the fair values of contingent consideration within the “FVTPL (nonderivative) – at fair value through profit or loss” category, the principal unobservable input is the estimation of the probability that, for example, pre-defined milestones for research and development projects will be achieved or that sales targets will be attained, as well as the timing of the payments. Changes in these estimates may lead to significant increases or decreases in fair value.

Embedded derivatives are separated from their respective host contracts if the contracts do not represent financial assets and are not closely related to them. Such host contracts are generally sale or purchase agreements relating to the operational business. The embedded derivatives cause the cash flows from the contracts to vary with exchange-rate or price fluctuations, for example. The internal measurement of embedded derivatives is mainly performed using the discounted cash flow method, which is based on unobservable inputs. These include planned sales and purchase volumes, and prices derived from market data. Regular monitoring is carried out based on these fair values as part of quarterly reporting.

The maximum default risk from financial assets that are measured at amortized cost and are subject to the impairment model is €15,717 million (2021: €15,290 million).

The maximum default risk from existing loan commitments that are subject to the impairment model is €1,108 million (2021: €1,154 million). In this connection, expected credit losses totaling €2 million (2021: €0 million) were reversed through profit or loss.

The maximum default risk from financial assets not subject to the impairment model is €7,208 million (2021: €4,863 million).

The interests in Century Therapeutics, Inc., United States, and Pyxis Oncology, Inc., United States, were accounted for in the Bayer Group consolidated financial statements as associates using the equity method until June 2021 and October 2021, respectively. Their respective IPOs in June 2021 and October 2021 led to the loss of significant influence and resulted in a change in accounting method. Since then, the shares held by Bayer have been measured at fair value through profit or loss. The interests in Covestro and Elanco were also measured at fair value through profit or loss until the Bayer Group sold its remaining shares in the companies during the first half of 2021.

The changes in the amount of financial assets and liabilities recognized at fair value based on unobservable inputs (Level 3) for each financial instrument category were as follows:

B 27.1/3

Development of Financial Assets and Liabilities (Level 3)

€ million	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives (net)	Liabilities – FVTPL (non-derivative)[1]	Total
Carrying amount, January 1, 2022	**1,009**	**406**	**11**	**(1,769)**	**(343)**
Gains (losses) recognized in profit or loss	(108)	–	(4)	(6)	**(118)**
of which relating to assets/liabilities held at the end of the reporting period	(108)	–	(4)	(6)	**(118)**
Gains (losses) recognized outside profit or loss	–	(48)	–	–	**(48)**
Additions of assets/(liabilities)	591	67	–	–	**658**
Settlements of (assets)/liabilities	(10)	(45)	–	140	**85**
Changes in scope of consolidation	(18)	(61)	–	–	**(79)**
Exchange differences	9	21	1	(94)	**(63)**
Carrying amount, December 31, 2022	**1,473**	**340**	**8**	**(1,729)**	**92**

[1] See table B 27.1/1 for definition of measurement categories.

B 27.1/4

Development of Financial Assets and Liabilities (Level 3) (Previous Year)

€ million	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives (net)	Liabilities – FVTPL (non-derivative)[1]	Total
Carrying amount, January 1, 2021	**1,008**	**344**	**11**	**(1,261)**	**102**
Gains (losses) recognized in profit or loss	(7)	–	(1)	(40)	(48)
of which relating to assets/liabilities held at the end of the reporting period	(7)	–	(1)	(42)	(50)
Gains (losses) recognized outside profit or loss	–	37	–	–	37
Additions of assets/(liabilities)	20	48	–	(419)	(351)
Settlements of (assets)/liabilities	(22)	–	–	68	46
Transfers to Level 1[2]	–	(42)	–	–	(42)
Changes in scope of consolidation	–	(1)	–	–	(1)
Exchange differences	10	20	1	(117)	(86)
Carrying amount, December 31, 2021	**1,009**	**406**	**11**	**(1,769)**	**(343)**

[1] See table B 27.1/2 for definition of measurement categories.
[2] The transfer pertained to the interest in Recursion Pharmaceuticals Inc., United States, which is now a publicly listed company.

The changes recognized in profit or loss were included in other operating income/expenses, as well as in the financial result in interest income, exchange gains or losses and other financial income and expenses.

Income, expense, gains and losses on financial instruments can be assigned to the following categories:

B 27.1/5

Income, Expense, Gains and Losses on Financial Instruments

							2022
€ million	Assets – AC[1]	Assets – FVTPL[1]	FVTOCI (no Recycling)[1]	Derivatives – no hedge accounting – FVTPL[1]	Liabilities – AC[1]	Liabilities – FVTPL (non-derivative)[1]	Total
Interest income	141	91	–	6	27	–	265
Interest expense	–	–	–	(5)	(1,254)	–	(1,259)
Income/expenses from affiliated companies	–	–	1	–	–	–	1
Changes in fair value	–	(434)	–	2	–	(6)	(438)
Impairment losses	(126)	–	–	–	–	–	(126)
Impairment loss reversals	128	–	–	–	–	–	128
Exchange gains/losses	(35)	–	–	(129)	(11)	–	(175)
Gains/losses from retirements	3	–	–	–	–	–	3
Other financial income/expenses	(55)	–	–	–	(15)	–	(70)
Net result	**56**	**(343)**	**1**	**(126)**	**(1,253)**	**(6)**	**(1,671)**

[1] See table B 27.1/1 for definition of measurement categories.

B 27.1/6

Income, Expense, Gains and Losses on Financial Instruments (Previous Year)

							2021
€ million	Assets – AC[1]	Assets – FVTPL[1]	FVTOCI (no Recycling)[1]	Derivatives – no hedge accounting – FVTPL[1]	Liabilities – AC[1]	Liabilities – FVTPL (non-derivative)[1]	Total
Interest income	68	51	–	12	8	–	139
Interest expense	–	–	–	(11)	(1,136)	–	(1,147)
Income/expenses from affiliated companies	–	–	6	–	–	–	6
Changes in fair value	–	(55)	–	22	–	(40)	(73)
Impairment losses	(128)	–	–	–	–	–	(128)
Impairment loss reversals	83	–	–	–	–	–	83
Exchange gains/losses	27	–	–	145	(440)	–	(268)
Other financial income/expenses	31	–	–	–	(5)	–	26
Net result	**81**	**(4)**	**6**	**168**	**(1,573)**	**(40)**	**(1,362)**

[1] See table B 27.1/2 for definition of measurement categories.

The interest income and expense from assets and liabilities within the AC category also included income and expenses from interest-rate derivatives that qualified for hedge accounting. Income and expenses from lease receivables and lease liabilities, respectively, are also included here.

The changes in the fair value of assets within the FVTPL category mainly included changes in the fair value of the interests in Century and Pyxis (2021 figures also contained changes in the fair value of the interests in Elanco and Covestro, respectively) as well as changes in the fair value of investments in money market funds and mixed funds. Dividend income is reflected in income from affiliated companies, while interest income from debt instruments within the FVPTL category is included in interest income and primarily concerns interest income from the capital provided to Bayer-Pensionskasse for its effective initial fund and from money market funds. The changes in the fair value of derivatives that do not qualify for hedge accounting related mainly to forward commodity contracts and embedded derivatives.

Changes in the fair value of (nonderivative) liabilities within the FVTPL category mainly included changes in the fair value of obligations for contingent consideration in connection with business acquisitions.

Derivatives that form part of a master netting arrangement, constitute a financial asset or liability and can only be netted in the event of breach of contract by, or insolvency of, one of the contracting parties do not satisfy, or only partially satisfy, the criteria for offsetting in the statement of financial position according to IAS 32. The volume of such derivatives with positive fair values was €188 million (2021: €129 million), and the volume with negative fair values was €310 million (2021: €308 million). Included here is an amount of €152 million (2021: €77 million) in positive and negative fair values of derivatives concluded with the same contracting party.

27.2 Maturity analysis

The liquidity risks to which the Bayer Group was exposed from its financial instruments at the end of the reporting period comprised obligations for future interest and repayment installments on financial liabilities and the liquidity risk arising from derivatives.

There were also loan commitments under as yet unpaid €965 million (2021: €965 million) and €132 million (2021: €189 million) portions of the effective initial funds of Bayer-Pensionskasse VVaG and Rheinische Pensionskasse VVaG, respectively, which may result in further payments by Bayer AG in subsequent years. In 2022, Bayer-Pensionskasse and Rheinische Pensionskasse drew amounts with a nominal volume of €500 million and €57 million, respectively, from their effective initial funds as per the corresponding agreement. At the same time, the agreed commitment volume in the effective initial fund agreement between Bayer-Pensionskasse and Bayer AG was increased by €500 million.

B 27.2/1

Maturity Analysis of Financial Instruments

	Dec. 31, 2022	2023	2024	2025	2026	2027	after 2027
€ million	**Carrying amount**						**Interest and repayment**
Financial liabilities							
Bonds	**36,602**	4,658	4,813	4,938	2,432	2,150	27,931
Liabilities to banks	**3,399**	3,410	3	–	–	–	–
Remaining liabilities	**1,376**	470	277	191	144	103	428
Trade accounts payable	**7,545**	7,490	47	2	1	1	8
Other liabilities							
Accrued interest on liabilities	**272**	272	–	–	–	–	–
Remaining liabilities	**3,581**	2,636	386	575	229	95	37
Liabilities from derivatives	**347**	318	(9)	1	1	1	–
With gross settlement		183	(4)	–	–	–	–
Cash outflows		9,936	1	–	–	–	–
Cash inflows		(9,753)	(5)	–	–	–	–
With net settlement		135	(5)	1	1	1	–
Cash outflows		135	(5)	1	1	1	–
Loan commitments	**–**	1,108	–	–	–	–	–
Financial guarantees	**–**	25	–	–	–	–	–
Total	**53,122**	20,387	5,517	5,707	2,807	2,350	28,404

B 27.2/2

Maturity Analysis of Financial Instruments (Previous Year)

€ million	Dec. 31, 2021 Carrying amount	2022	2023	2024	2025	2026	after 2026
		Interest and repayment					
Financial liabilities							
Bonds	37,593	2,827	4,566	4,574	4,671	2,340	28,958
Liabilities to banks	678	679	1	–	–	–	–
Remaining liabilities	2,437	1,563	280	202	150	107	436
Trade accounts payable	6,792	6,774	15	2	1	–	–
Other liabilities							
Accrued interest on liabilities	253	253	–	–	–	–	–
Remaining liabilities	2,287	830	556	337	445	216	247
Liabilities from derivatives	362	409	40	–	–	–	–
With gross settlement		233	–	–	–	–	–
Cash outflows		8,371	–	–	–	–	–
Cash inflows		(8,138)	–	–	–	–	–
With net settlement		176	40	–	–	–	–
Cash outflows		176	40	–	–	–	–
Loan commitments	–	1,154	–	–	–	–	–
Financial guarantees	–	–	–	–	–	–	1
Total	50,402	14,489	5,458	5,115	5,267	2,663	29,642

27.3 Information on derivatives

Asset and liability fair values and future cash flows are exposed to currency, interest-rate and commodity price risks. Derivatives are used to reduce this risk. In some cases they are designated as hedging instruments in a hedge accounting relationship.

Currency risks

Foreign currency receivables and liabilities are hedged using foreign exchange derivatives without the existence of a hedge accounting relationship. In addition, cross-currency interest-rate swaps are concluded to hedge intra-Group loans. Some of these swaps are designated as cash flow hedges in hedge accounting.

Fluctuations in future cash flows resulting from forecasted foreign currency transactions and procurement activities are avoided partly through derivatives contracts, most of which are designated as cash flow hedges.

Interest-rate risk

The interest-rate risks from fixed-interest borrowings are managed in part using interest-rate swaps. Two interest-rate swaps totaling US$500 million were designated as fair value hedges for the US$2.5 billion bond issued in 2018 and maturing in 2025. The carrying amount of this bond as of December 31, 2022, was €2,336 million. Hedge-related fair value adjustments of €18 million reduced the carrying amount to €2,318 million. No material ineffective portions of these hedges required recognition through profit or loss.

Interest-rate risks in connection with the issuance of new bonds were partially hedged through interest-rate derivatives designated as cash flow hedges. The fair values of these derivatives as of the issuance date will be amortized from reserves for cash flow hedges into interest income and expense over the term of the bonds.

Commodity price risks

Hedging contracts are also used to partly reduce exposure to fluctuations in future cash inflows and outflows resulting from price changes on procurement and selling markets for seeds and energy. Most of these contracts are designated as cash flow hedges.

Hedging of obligations under stock-based employee compensation programs (Aspire)

A portion of the obligations to make stock-based payments to employees is hedged against share price fluctuations using derivatives contracts that are settled in cash at maturity. These derivatives are designated as cash flow hedges.

Further information on cash flow hedges

Other comprehensive income from cash flow hedges decreased in 2022 by €181 million (2021: by €143 million) due to changes in the fair values of derivatives. Total changes of €463 million in the fair values of derivatives were recognized as expense in 2022 (2021: €26 million) through profit or loss.

The following table shows changes in reserves for cash flow hedges (before taxes) in equity, broken down by risk category:

B 27.3/1

Changes in Reserves for Cash Flow Hedges (Before Taxes)

€ million	Currency hedging of forecasted transactions	Interest-rate hedging of forecasted transactions	Commodity price hedging	Hedging of stock-based employee compensation programs	Total
January 1, 2021	**66**	**170**	**31**	**(48)**	**219**
Changes in fair values	(260)	14	93	10	(143)
Reclassified to profit or loss	45	(37)	(1)	19	26
Reclassified to inventories	–	–	(89)	–	(89)
December 31, 2021	**(149)**	**147**	**34**	**(19)**	**13**
Changes in fair values	(341)	32	96	32	(181)
Reclassified to profit or loss	521	(41)	1	(18)	463
Reclassified to inventories	–	–	(123)	–	(123)
December 31, 2022	**31**	**138**	**8**	**(5)**	**172**

No material ineffective portions of these hedges required recognition through profit or loss in 2022 or 2021.

The fair values of the derivatives in the major categories as of year-end are indicated in the following table together with the included volumes of hedges:

B 27.3/2

Fair Values of Derivatives

	Dec. 31, 2021			Dec. 31, 2022		
€ million	Notional amount[1]	Positive fair value	Negative fair value	Notional amount[1]	Positive fair value	Negative fair value
Currency hedging of recorded transactions[2, 3]	**11,838**	**102**	**(69)**	**13,352**	**61**	**(171)**
Forward exchange contracts	11,790	80	(69)	13,352	61	(171)
Cross-currency interest-rate swaps	48	22	–	–	–	–
Currency hedging of forecasted transactions[2, 4]	**5,009**	**23**	**(163)**	**5,628**	**131**	**(91)**
Forward exchange contracts	4,738	15	(163)	5,012	119	(85)
of which cash flow hedges	4,345	12	(157)	4,567	107	(75)
Currency options	271	8	–	616	12	(6)
of which cash flow hedges	271	8	–	587	12	(6)
Interest-rate hedging of recorded transactions[2, 3]	**441**	**12**	**–**	**468**	**–**	**(19)**
Interest-rate swaps	441	12	–	468	–	(19)
of which fair value hedges	441	12	–	468	–	(19)
	–	–	–	–	–	–
Commodity price hedging[2, 4]	**868**	**16**	**(31)**	**1,094**	**17**	**(16)**
Forward commodity contracts	860	14	(31)	1,088	16	(16)
of which cash flow hedges	640	4	(4)	807	7	(6)
Commodity option contracts	8	2	–	6	1	–
Hedging of stock-based compensation programs[2, 4]	**341**	**–**	**(78)**	**143**	**–**	**(31)**
Forward share transactions	341	–	(78)	143	–	(31)
of which cash flow hedges	341	–	(78)	143	–	(31)
Total	**18,497**	**153**	**(341)**	**20,685**	**209**	**(328)**
of which current derivatives	17,765	148	(303)	19,897	197	(317)
for currency hedging	16,846	125	(233)	18,744	180	(258)
for interest-rate hedging[5]	–	7	–	–	–	(13)
for commodity price hedging	714	16	(31)	1,010	17	(15)
for hedging of stock-based compensation programs	205	–	(39)	143	–	(31)

[1] The notional amount is reported as gross volume, which also contains economically closed hedges.
[2] Derivatives with positive fair values are recognized under “Other financial assets” in the statement of financial position.
[3] Derivatives with negative fair values are recognized under “Financial liabilities” in the statement of financial position.
[4] Derivatives with negative fair values are recognized under “Other liabilities” in the statement of financial position.
[5] The portion of the fair value of long-term interest-rate swaps that relates to short-term interest payments is reported as current.

The hedging rates for the material currency pairs of the currency hedging derivatives existing at year-end that qualified for hedge accounting were as follows:

B 27.3/3

Hedging Rates of Derivatives – Hedge Accounting

	Dec. 31, 2021	Dec. 31, 2022
	Short-term derivatives	Short-term derivatives
	Average hedging rate	**Average hedging rate**
Currency hedging of forecasted transactions		
Forward exchange contracts – cash flow hedges		
EUR/BRL	6.83	**6.04**
EUR/CNH	7.85	**7.23**
EUR/JPY	130.38	**136.71**

28. Leases

The accounting policy options exercised with respect to leases are outlined in Note [3].

Lease contracts in which Bayer is the lessee mainly pertain to real estate, machinery, equipment or vehicles. Lease contracts are negotiated individually and each contain different arrangements on extension, termination or purchase options, for example.

Land and building leases in which Bayer is the lessee have average terms of 7.8 years (2021: 7.6 years). In many cases, the payments agreed under these leases are adjusted annually based on the development of the consumer price index for the respective country. Building leases generally contain clauses that prohibit subleasing except with the consent of the lessor. Leases of assets other than land or buildings have average terms of 6.8 years (2021: 7.8 years).

Like in the previous year, approximately half of all contracts (excluding vehicle leases) contain an option for Bayer as lessee to terminate the lease on a date specified in the contract. As in the prior year, roughly half of all contracts with a fixed minimum term (excluding vehicle leases) grant Bayer as lessee an extension option. Vehicle leases generally contain a right of early return and an extension option.

The following right-of-use assets are recognized under property, plant and equipment:

B 28/1

Right-of-Use Assets

€ million	Dec. 31, 2021	Dec. 31, 2022
Land and buildings	774	**861**
Investment property	5	**8**
Plant installations and machinery	126	**87**
Furniture, fixtures and other equipment	214	**224**
Construction in progress and advance payments	26	**45**
Total	**1,145**	**1,225**

Additions to right-of-use assets in 2022 amounted to €557 million (2021: €338 million).

The maturities of the outstanding lease payments were as follows:

B 28/2

Maturities of Lease Payments

€ million	Dec. 31, 2021	Dec. 31, 2022
Maturing within 1 year	296	330
Maturing in 1-5 years	735	711
Maturing after 5 years	436	428
Total	**1,467**	**1,469**

The depreciation of right-of-use assets in 2022 pertained to the following asset groups:

B 28/3

Depreciation of Right-of-Use Assets

€ million	2021	2022
Land and buildings	196	220
Plant installations and machinery	31	28
Furniture, fixtures and other equipment	111	117
Total	**338**	**365**

In addition, the following amounts were recognized in the income statement in 2022 in connection with lease contracts in which Bayer was the lessee:

B 28/4

Income Statement Impact of Leases

€ million	2021	2022
Interest expense for the unwinding of discount on lease liabilities	(53)	(62)
Expenses for short-term leases with terms longer than one month and up to 12 months	(271)	(428)
Expenses for leases with low-value underlying assets (excluding short-term leases)	(2)	(3)
Expenses for variable lease payments not included in the measurement of the lease liability	(13)	(16)
Income from subleasing of right-of-use assets	4	5
Gains or losses on sale-and-leaseback transactions	86	–
Total	**(249)**	**(504)**

Cash outflows related to lessee activities in 2022 amounted to €861 million (2021: €665 million). Unrecognized liabilities of €33 million existed as of December 31, 2022, for short-term leases that had not yet commenced (December 31, 2021: €30 million). Leases signed but not yet commenced as of December 31, 2022, (other than short-term leases) amounted to €4 million (2021: €52 million).

29. Contingent liabilities and other financial commitments

Contingent liabilities

The following warranty contracts, guarantees and other contingent liabilities existed at the end of the reporting period:

B 29/1

Contingent Liabilities

€ million	Dec. 31, 2021	Dec. 31, 2022
Warranties	117	123
Other contingent liabilities	2,965	5,440
Total	**3,082**	**5,563**

Other contingent liabilities as of December 31, 2022, amounted to €5,440 million (December 31, 2021: €2,965 million) and primarily related to tax, labor or tort law and other matters in countries including Germany, the United States and Brazil. Both the assessment of the contingent liabilities and the assessment of the probability of the outflow of resources are subject to a high degree of uncertainty.

Other financial commitments

The other financial commitments were as follows:

B 29/2

Other Financial Commitments

€ million	Dec. 31, 2021	Dec. 31, 2022
Commitments under purchase agreements for property, plant and equipment	1,018	976
Contractual obligation to acquire intangible assets	162	174
Capital contribution commitments	111	85
Unpaid portion of the effective initial fund	1,154	1,097
Potential payment obligations under collaboration agreements and contingent payments from acquisitions that do not constitute business combinations	4,237	3,458
Revenue-based milestone payment commitments	3,187	2,971
Total	**9,869**	**8,761**

The expected maturities of payment obligations under collaboration agreements and revenue-based milestone payment commitments are as follows:

B 29/3

Maturities of Other Financial Liabilities

	Potential payment obligations under collaboration agreements and contingent payments from acquisitions that do not constitute business combinations		Revenue-based milestone payment commitments	
€ million	2021	2022	2021	2022
Maturing within 1 year	327	159	952	41
Maturing in 1–5 years	1,124	461	47	648
Maturing after 5 years	2,786	2,838	2,188	2,282
Total	**4,237**	**3,458**	**3,187**	**2,971**

The Bayer Group has entered into cooperation agreements with third parties under which it has agreed to fund various projects or has assumed other payment obligations based on the achievement of certain milestones or other specific conditions. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due. Since the achievement of the conditions for payment is highly uncertain, both the amounts and the dates of the actual payments may vary considerably from those stated in the table. The decrease in other financial obligations under collaboration agreements is mainly connected with the termination of some contracts within the Pharmaceuticals Division due to a change in R&D priorities.

30. Legal risks

As a global company with extensive business activities, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, anticorruption, patent disputes, tax assessments and environmental matters. The outcome of any current or future proceedings cannot normally be predicted. It is therefore possible that legal or regulatory judgments or future settlements could give rise to expenses that are not covered, or not fully covered, by insurers' compensation payments and could significantly affect our sales and earnings. Legal proceedings we currently consider to be material are outlined below. The legal proceedings referred to do not represent an exhaustive list.

Product-related litigation

Essure™: In the United States, a large number of lawsuits by users of Essure™, a medical device offering permanent birth control with a nonsurgical procedure, had been served upon Bayer. Plaintiffs allege personal injuries from the use of Essure™, including hysterectomy, perforation, pain, bleeding, weight gain, nickel sensitivity, depression and unwanted pregnancy, and seek compensatory and punitive damages.

Bayer reached agreements in principle with plaintiff law firms to resolve approximately 99% of the nearly 40,000 total filed and unfiled US Essure™ claims involving women who allege device-related injuries. The settlements include all of the jurisdictions with significant volumes of Essure™ cases, including the state of California Joint Council Coordinated Proceedings (JCCP) and the Federal District Court for the Eastern District of Pennsylvania (EDPA). Taking into account the payments already made, the remaining provision for settlements amounts to US$0.1 billion as of December 31, 2022. This includes an allowance for outstanding claims, and the company is in resolution discussions with counsel for the remaining plaintiffs. At the same time, we continue to support the safety and efficacy of the Essure™ device and are prepared to vigorously defend it in litigation where no amicable resolution can be achieved.

As of February 1, 2023, two Canadian lawsuits relating to Essure™ seeking class action certification had been served upon Bayer. One of the proposed class actions has been certified. Certification in the other class action has been denied; the decision has been appealed by plaintiffs. In addition, approximately 160 single-plaintiff claims have been served on Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Class actions over neonicotinoids in Canada: Proposed class actions against Bayer were filed in Quebec and Ontario (Canada) concerning crop protection products containing the active substances imidacloprid and clothianidin (neonicotinoids). The plaintiffs are honey producers, who have filed a proposed nationwide class action in Ontario and a Quebec-only class action in Quebec. Plaintiffs claim for compensatory damages and punitive damages and allege Bayer and another crop protection company were negligent in the design, development, marketing and sale of neonicotinoid pesticides. The proposed Ontario class action is in a very early procedural phase. In Quebec, a court certified a class proposed by plaintiffs in 2018. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Roundup™ (glyphosate): A large number of lawsuits from plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto have been served upon Monsanto in the United States. Glyphosate is the active ingredient contained in a number of Monsanto's herbicides, including Roundup™-branded products. Plaintiffs allege personal injuries resulting from exposure to those products, including non-Hodgkin lymphoma (NHL) and multiple myeloma, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that the glyphosate-based herbicide products are defective and that Monsanto knew, or should have known, of the risks allegedly associated with such products and failed to adequately warn its users. Additional lawsuits are anticipated. The majority of plaintiffs have brought actions in state courts in Missouri and California. Cases pending in US federal courts have been consolidated in a multidistrict litigation (MDL) in the Northern District of California for common pre-trial management.

In 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation. As of February 1, 2023, Monsanto had reached settlements

and/or was close to settling in a substantial number of claims. As we now have greater visibility regarding the number and quality of claims made, we consider that, of the approximately 154,000 claims in total, approximately 109,000 have been settled or are not eligible for various reasons.

The three adverse verdicts – Johnson, Hardeman and Pilliod – were not covered by the settlement. In both the Hardeman and Pilliod cases, following unsuccessful appeal procedures, the Company petitioned the Supreme Court for review. In June 2022, the Supreme Court denied review of both Hardeman and Pilliod. There may be future cases in the Roundup™ litigation (or other unrelated actions) that present the Supreme Court with preemption questions, and the Company will continue to review its legal options regarding further proceedings. Currently, in the Carson case, the 11th Circuit Federal Court of Appeals' en banc full panel is considering plaintiff's appeal of a Georgia federal district court's grant of preemption in Monsanto's favor. Oral argument on the appeal is scheduled for June 2023. In the Schaffner case, the 3rd Circuit Federal Court of Appeals is considering Monsanto's appeal of the MDL court's denial of preemption. Briefing in the appeal is ongoing.

In November 2022, the jury in the Ferro (St. Louis County, Missouri) case issued a verdict in Monsanto's favor, determining that Roundup™ did not cause the plaintiff's cancer. This is the sixth consecutive trial win for the Company.

For costs to resolve potential future claims, Bayer has implemented corresponding accounting measures. As of December 31, 2022, Bayer had a provision of US$6.4 billion for the aforementioned settlements to resolve existing and future glyphosate claims. Bayer continues to believe there is no reason for safety concerns in connection with these products.

As of February 1, 2023, a total of 31 Canadian lawsuits relating to Roundup™ had been served upon Bayer, including 11 seeking class action certification.

Bayer believes it has meritorious defenses and intends to defend the safety of glyphosate and our glyphosate-based formulations vigorously.

Dicamba: In November 2016, Bader Peach Farms filed a lawsuit against Monsanto and BASF in Missouri state court. Subsequently, lawsuits from approximately 250 plaintiffs were filed in both US state and federal courts alleging crop damage claims against Monsanto, primarily for soybeans, and there were approximately six non-soybean lawsuits. The general claims are that off-target movement from the dicamba herbicide and/or the Xtend™ system has damaged non-dicamba-tolerant soybean and other crops. The Dicamba Herbicide MDL, which currently includes approximately 30 cases, was formed in US federal court in 2018; it is pending in the Eastern District of Missouri, Southeastern Division. Separate from the MDL, there are two state court lawsuits: one in Tennessee (Tandy Ray King) alleging damage to tobacco crops for 2018, and one in Texas (Timmons) filed on behalf of approximately 50 vineyard owners alleging damage to their vineyards for crop years 2017-2022.

The first dicamba trial was the Bader Farms case which was heard in 2020. The jury rendered a verdict for plaintiffs in the amount of US$15 million in compensatory damages and US$250 million in punitive damages, jointly and severally against defendants Monsanto and BASF. Monsanto filed post-trial motions resulting in the punitive damages being reduced to US$60 million, thereby reducing the total verdict to US$75 million. In October 2022, Monsanto and plaintiffs agreed to settle all claims without admission of liability.

We continue to receive new dicamba-related claims that could be potential future lawsuits. The most significant of those is a claim by Frey Farms, which is a producer of watermelons, pumpkins and other vegetables. With respect to all of the other dicamba cases except for Frey and a small number of newly filed lawsuits and claims, Monsanto has entered into a mass tort settlement agreement. The settlement will provide for the payment of substantiated claims by soybean growers in crop years 2015-2020 who can demonstrate a yield loss due to the application of dicamba products to an Xtend™ crop. That portion of the settlement is capped at US$300 million. The settlement also provides for additional funds of up to US$100 million to pay for dicamba damage claims made by growers of other, non-soybean crops, as well as attorneys' fees, litigation costs, and settlement administration costs. Claims could be filed until May

2021, and the settlement claims administrator is currently in the process of determining claim eligibility and the amounts to be awarded to eligible claimants. Taking into account the payments already made, the remaining provision for settlements amounts to US$0.3 billion as of December 31, 2022.

Insurance against statutory product liability claims

In connection with the above-mentioned product-related litigations, Bayer is insured against statutory product liability claims to the extent customary in the respective industries and has, based on the information currently available, taken corresponding accounting measures. However, the accounting measures relating to, in particular, Essure™, dicamba and Roundup™ (glyphosate) claims exceed the available insurance coverage.

Patent disputes

Bollgard II RR Flex™/Intacta™: In 2019, the Cotton Producers Association of the State of Mato Grosso (AMPA) in Brazil filed a patent invalidity action in federal court seeking to invalidate four of Bayer's patents covering Bollgard II RR Flex™, a cotton technology owned by Bayer. In 2020, the Brazilian patent office, in the court proceedings, acknowledged the validity of all four challenged patents. Two of the patents are also being challenged in administrative nullity proceedings before the Brazilian patent office. One of the patents, the promoter patent, is also at issue in a patent invalidation action filed in Brazilian federal court by the Soybean Growers Association from the State of Mato Grosso (Aprosoja/MT) in 2017 regarding the Intacta™ soybean technology. In addition to the patent invalidity claims, both lawsuits seek a refund of twice the amount of the paid royalties. Both lawsuits were filed as collective actions and are proceeding before the same federal judge. Bayer's Intacta™ soybean technology is further protected by two other patents, one of which has been challenged in administrative nullity proceedings before the Brazilian patent office by the Soybean Growers Association from the State of Rio Grande do Sul (Aprosoja/RS).

In addition to the action filed in 2017 regarding the promoter patent, the Soybean Growers Association from the State of Mato Grosso (Aprosoja/MT) is also seeking a correction of the expiration dates of all three patents protecting Bayer's Intacta™ soybean technology in a separate action claiming that two of these patents had already expired and is additionally seeking a corresponding refund of paid royalties and reduction of ongoing royalty payments. In 2021, the federal court decided to grant the requests by further soybean grower associations and the Cotton Producers Association of the State of Mato Grosso (AMPA) to be admitted as co-plaintiffs to this lawsuit. One of the two patents, the promoter patent, also covers Bollgard II RR Flex™ and is at issue in the disputes with AMPA. Aprosoja/MT argues that the term of the patents had been determined unconstitutionally. In 2021, a decision by the Brazilian Supreme Court – that the term of patents previously determined to be a minimum of 10 years from the patent being granted is unconstitutional, and that this term shall instead be set at 20 years from the filing of the patent application – became final. This will apply retroactively to certain patents, thereby shortening their term. However, Bayer believes that neither Aprosoja/MT nor other associations are entitled to a refund of paid royalties or to a reduction of ongoing royalty payments.

MON 87429: In August 2022, Corteva Agriscience LLC ("Corteva") filed a complaint in a US federal court against Bayer alleging that Bayer's herbicide tolerance technology MON 87429 infringes a patent held by Corteva. However, Bayer asserts that its technology does not infringe any valid patent claim of Corteva and that Corteva's patent is invalid.

Bayer believes it has meritorious defenses in the above patent disputes and intends to defend itself vigorously.

Further legal proceedings

Trasylol™/Avelox™/Baycol™: A qui tam complaint relating to marketing practices for Trasylol™ (aprotinin) and Avelox™ (moxifloxacin) filed by a former Bayer employee was pending in the US District Court in New Jersey. Another qui tam complaint (filed by the same relator as in the Trasylol™/Avelox™ complaint) asserting Bayer fraudulently induced a contract with the Department of Defense was pending in the US District Court in Minnesota. In 2022, the parties reached a final settlement with the Department of Justice (DOJ) and the former Bayer employee for the Baycol™, Trasylol™ and Avelox™ qui tam matters. The attorneys' fees claim remains unresolved and will be litigated in 2023. Bayer believes the risks remaining in these matters are no longer material.

BASF arbitration: In 2019, Bayer was served with a request for arbitration by BASF SE. BASF alleges to have indemnification claims under the asset purchase agreements signed in 2017 and 2018 related to the divestment of certain Crop Science businesses to BASF. BASF alleges that particular cost items, including certain personnel costs, had not been appropriately disclosed and allocated to some of the divested businesses. In August 2022, the arbitral tribunal dismissed BASF's claims in their entirety and awarded Bayer approximately two-thirds of its arbitration fees and costs. In November 2022, BASF filed a motion to set aside the award. Bayer believes that the award has been rendered fully in line with the legal requirements and intends to defend itself vigorously.

Newark Bay environmental matters: In the United States, Bayer is a backup indemnitor for certain environmental liabilities in the Lower Passaic River and/or the Newark Bay Complex which are being satisfied by an unrelated company. Bayer is currently unable to determine the extent of its potential future liability for this matter.

Mine permit Idaho: In 2019, the United States Bureau of Land Management (BLM) granted a permit to Bayer's subsidiary P4 Production, LLC, for a new phosphate mine in Idaho. Phosphorus is needed for glyphosate which is contained in a number of Bayer's herbicides, including Roundup™ agricultural herbicides. In 2021, three non-governmental organizations (NGOs) challenged the permit in the United States District Court for the District of Idaho. P4 Production joined the proceeding as an intervenor. In January 2023, the court decided in favor of the NGOs on four of their ten claims but has not yet issued a ruling on remedies. If the court orders remedies that unacceptably constrain P4's ability to develop the mine, we will evaluate all options to vigorously defend P4's interests.

Asbestos: In many cases, plaintiffs allege that Bayer and co-defendants employed third parties on their sites in past decades without providing them with sufficient warnings or protection against the known dangers of asbestos. Additionally, a Bayer affiliate in the United States is the legal successor to companies that sold asbestos products until 1976. Union Carbide has agreed to indemnify Bayer for this liability. Similarly, Bayer's subsidiary Monsanto faces numerous claims based on exposure to asbestos at Monsanto premises without adequate warnings or protection and based on the manufacture and sale of asbestos-containing products. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

PCBs: Bayer's subsidiary Monsanto has been named in lawsuits brought by various governmental entities in the United States claiming that Monsanto, Pharmacia and Solutia, collectively as a manufacturer of PCBs, should be responsible for a variety of damages due to PCBs in the environment, including bodies of water, regardless of how PCBs came to be located there. PCBs are chemicals that were widely used for various purposes until the manufacture of PCBs was prohibited by the EPA in the United States in 1979.

In 2020, Bayer reached an agreement for a nationwide class settlement to settle claims of approximately 2,500 municipal government entities across the United States for a total payment, including class benefits and attorney fees, of approximately US$650 million. In November 2022, the court issued its final approval of the class settlement.

Additionally, in 2020, Bayer reached agreements to settle individual suits brought by the Attorneys General of the States of New Mexico and Washington, as well as the District of Columbia for a total amount of approximately US$170 million. Suits by Ohio and New Hampshire were settled in 2021, for a total amount of approximately US$105 million. In July 2022, the Superior Court of Delaware dismissed, in its entirety,

the Delaware State Attorney General's individual lawsuit that alleged environmental damages from PCBs and the State has appealed that decision. In December 2022, Bayer settled a suit brought by the Oregon Attorney General for US$698 million reflecting the unique circumstances in that state. Individual suits by Attorneys General of the States of Pennsylvania, Maryland, New Jersey and Illinois are currently pending, as are lawsuits brought in 2022 by several counties and cities in California (City of Los Angeles, County of Marin, County of San Mateo and County of Contra Costa). Bayer will continue its vigorous defense of any case that remains pending.

Monsanto also faces numerous lawsuits claiming personal injury and/or property damage due to use of and exposure to PCB products. There is one group of cases with approximately 200 plaintiffs claiming a wide variety of personal injuries allegedly due to PCBs in the building products of a school (Sky Valley Education Center) in King County, Washington. Since 2021, six trials have taken place in these matters, with five of the trials resulting in plaintiffs' verdicts totaling approximately US$627 million in combined compensatory and punitive damages. One of the trials ended in a mistrial and the latest trial in December 2022 resulted in defense verdicts for three of the four plaintiffs. Bayer disagrees with each of the adverse verdicts based on many of the same errors seen in the first trial and plans to appeal. The undisputed evidence in these cases does not support the conclusions that plaintiffs were exposed to unsafe levels of PCBs or that any exposure could have possibly caused their claimed injuries. Each of the adverse verdicts are in different stages of post-trial motions and appeal due to numerous significant trial errors, with the first appeal expected to be heard and decided in 2023. The next trial is scheduled to begin in May 2023. Three additional trials are scheduled in 2023. We believe that we also have meritorious defenses in these matters and intend to defend ourselves vigorously.

To recover costs associated with the PCB-related litigation, the Company filed a complaint in August 2022 in the Circuit Court of St. Louis County for the State of Missouri to enforce its rights under certain indemnity contracts. Under these contracts, the companies who purchased PCBs for use in their products agreed to indemnify Monsanto for PCB-related litigation costs, including settlements.

Shareholder litigation concerning Monsanto acquisition: In Germany and the United States, investors have filed lawsuits claiming damages suffered due to the drop in the company's share price. Plaintiffs allege that the company's capital market communication in connection with the acquisition of Monsanto Company was flawed and that the information provided by Bayer on the risks, in particular regarding glyphosate product liability claims in the United States, was insufficient. In Germany, as of December 31, 2022, 31 claims by approximately 340 plaintiffs had been filed and served upon Bayer. In July 2022, the Cologne Regional Court initiated a model case proceeding in accordance with the Capital Markets Model Case Act. This does not include a decision on the merits of the matter. In the parallel proceeding in the United States, one lawsuit seeking class action certification has been served upon Bayer. In October 2021 and in May 2022, the United States District Court for the Northern District of California, San Francisco Division, decided that the lawsuit shall move forward with regard to some of the allegations. Bayer believes it has duly complied with its capital markets law obligations at all times in connection with the acquisition of Monsanto Company and its disclosures concerning glyphosate product liability claims and intends to defend itself vigorously against the claims in all shareholder lawsuits.

Notes to the Statements of Cash Flows

The statement of cash flows shows how cash inflows and outflows during the fiscal year affected the cash and cash equivalents of the Bayer Group.

Of the cash and cash equivalents, there were no significant sums that had limited availability due to foreign exchange restrictions in 2022 or 2021.

The cash flows reported by consolidated companies outside the eurozone are translated at average monthly exchange rates. Cash and cash equivalents are translated at closing rates. The “Change in cash and cash equivalents due to exchange rate movements” is reported in a separate line item.

31. Net cash provided by (used in) operating, investing and financing activities

Net operating cash flow in 2022 amounted to €7,093 million (2021: €5,089 million) and included net payments of €1,165 million (2021: €4,232 million) to resolve litigations involving glyphosate, dicamba, PCBs and Essure™. That total comprised payments resulting from settlement agreements as well as court judgments. Total income taxes paid in 2022 amounted to €2,125 million (€2,159 million), of which €91 million (2021: €0 million) was attributable to the divestment of the Environmental Science Professional business and thus accounted for under divestments.

Net cash used in investing activities in 2022 amounted to €2,381 million (2021: net cash of €855 million was provided by investing activities). Cash outflows for property, plant and equipment and intangible assets amounted to €2,949 million (2021: €2,611 million). There was an inflow of €1,130 million (2021: €373 million) from the sale of property, plant and equipment and other assets that resulted partly from the sale of the product rights to our men’s health product Nebido™ (€481 million) and our lormetazepam-based products (€210 million). Divestments led to a net cash inflow, less divested cash, of €2,287 million (2021: net cash outflow of €6 million). This total included an amount of €2,206 million after income taxes from the sale of our Environmental Science Professional business to the international private equity company Cinven. Cash outflows for noncurrent financial assets amounted to €1,182 million (2021: €400 million), of which €557 million was attributable to Bayer-Pensionskasse VVaG and Rheinische Pensionskasse VVaG drawing on their effective initial funds. Outflows for acquisitions, less acquired cash, amounted to €89 million (2021: €1,340 million). The high outflows in 2021 mainly related to the acquisition of the biopharmaceutical company Vividion Therapeutics, Inc., United States. The net cash outflow for current financial assets came to €1,828 million (2021: inflow of €4,265 million), and was mainly attributable to investments in money market funds due to surplus liquidity resulting from the aforementioned sale of the Environmental Science Professional business.

There was a net cash outflow of €4,220 million for financing activities (2021: €5,645 million). This figure included net loan repayments of €974 million (2021: €2,452 million). Net interest payments increased to €1,251 million (2021: €1,200 million). The Bayer Group paid out €1,985 million in dividends (2021: €1,993 million), of which €1,965 million (2021: €1,965 million) to Bayer AG stockholders.

The changes in liabilities arising from financing activities in 2022 are presented in the following table:

B 31/1

Liabilities from Financing Activities

		Cash flows[1]	Noncash changes				
€ million	Jan. 1, 2022		Acquisitions/ divestments	Currency/ other effects	New contracts IFRS 16	Fair value changes[2]	Dec. 31, 2022
Bonds and notes	37,593	(2,070)	–	1,067	–	12	36,602
Liabilities to banks	773	2,715	–	(4)	–	–	3,484
Lease liabilities	1,165	(412)	(10)	19	410	62	1,234
Receivables/liabilities from derivatives	(29)	(6)	–	(1)	–	148	112
Other financial liabilities	1,272	(1,291)	–	159	–	2	142
Total	**40,774**	**(1,064)**	**(10)**	**1,240**	**410**	**224**	**41,574**

[1] Including paid interest that results from the unwinding of discount of the liabilities
[2] Including effects of unwinding of discount

The changes in liabilities arising from financing activities in 2021 were as follows:

B 31/2

Liabilities from Financing Activities (Previous Year)

		Cash flows[1]	Noncash changes				
€ million	Jan. 1, 2021		Acquisitions/ divestments	Currency/ other effects	New contracts IFRS 16	Fair value changes[2]	Dec. 31, 2021
Bonds and notes	36,745	(642)	–	1,458	–	32	37,593
Liabilities to banks	3,669	(2,820)	–	(76)	–	–	773
Lease liabilities	1,143	(379)	11	50	287	53	1,165
Receivables/liabilities from derivatives	21	112	–	(2)	–	(160)	(29)
Other financial liabilities	77	1,195	–	–	–	–	1,272
Total	**41,655**	**(2,534)**	**11**	**1,430**	**287**	**(75)**	**40,774**

[1] Including paid interest that results from the unwinding of discount of the liabilities
[2] Including effects of unwinding of discount

Other Information

32. Audit fees

Michael Mehren signed the Independent Auditor's Report for the first time for the year ended December 31, 2019, and Andreas Wermelt for the first time for the year ended December 31, 2022. Michael Mehren is the responsible audit partner.

The following fees for the services of the worldwide network of Deloitte or Deloitte GmbH Wirtschaftsprüfungsgesellschaft (Deloitte GmbH WPG) were recognized as expenses:

B 32/1

Audit Fees

	Deloitte		of which Deloitte GmbH WPG	
€ million	2021	2022	2021	2022
Financial statements auditing	14	15	6	7
Audit-related services and other audit work	4	3	2	1
Tax consultancy	1	–	–	–
Other services	–	–	–	–
Total	**19**	**18**	**8**	**8**

The fees for the financial statements audit services of Deloitte GmbH Wirtschaftsprüfungsgesellschaft primarily comprised those for the audits of the consolidated financial statements of the Bayer Group and of the financial statements of Bayer AG and its subsidiaries. The audit-related services and other audit work performed by Deloitte GmbH Wirtschaftsprüfungsgesellschaft in 2022 mainly concerned voluntary audits of the combined financial statements in connection with the concluded sale of the Environmental Science Professional business.

33. Related parties

Related parties as defined in IAS 24 are those legal entities, natural persons and close members of their family that are able to exert influence on Bayer AG and its subsidiaries or over which Bayer AG or its subsidiaries exercise control or joint control or have a significant influence. They include, in particular, nonconsolidated subsidiaries accounted for at fair value, joint ventures and associates accounted for at fair value or using the equity method, and post-employment benefit plans. Related parties also include the corporate officers of Bayer AG whose compensation is reported in Note [34] and in the Compensation Report, which is available at www.bayer.com/cpr.

B 33/1

Related Parties

	Sales of goods and services		Purchase of goods and services		Receivables		Liabilities	
€ million	2021	2022	2021	2022	2021	2022	2021	2022
Nonconsolidated subsidiaries	45	56	1	1	34	102	107	95
Joint ventures	6	8	–	–	5	7	21	–
Associates	12	–	–	–	7	8	–	2
Post-employment benefit plans	–	–	–	–	864	1,347	127	119

Intercompany profits and losses for companies accounted for in the consolidated financial statements using the equity method were immaterial in 2022 and 2021.

Bayer AG has undertaken to provide jouissance right capital (Genussrechtskapital) in the form of an interest-bearing loan with a nominal volume of €150 million (2021: €150 million) for Bayer-Pensionskasse VVaG. The entire amount remained drawn as of December 31, 2022. The carrying amount was €142 million (2021: €153 million). The loan capital provided to Bayer-Pensionskasse VVaG for its effective initial fund had a nominal volume of €1,135 million as of December 31, 2022 (December 31, 2021: €635 million). The carrying amount was €1,102 million (2021: €644 million). The outstanding receivables, comprised of different tranches, are each subject to a five-year interest-rate adjustment mechanism. Interest income of €11 million was recognized in 2022 (2021: €11 million) along with expense of €85 million (2021: €22 million) due to fair value changes.

No material impairment losses on receivables from related parties were recognized in 2022 or 2021.

34. Total compensation of the Board of Management and the Supervisory Board, advances and loans

In 2022, the compensation of the Board of Management and the Supervisory Board according to IFRS totaled €32,376 thousand (2021: €37,101 thousand). The compensation of the Supervisory Board amounted to €5,007 thousand (2021: €4,564 thousand) and was comprised entirely of short-term non-performance-related components.

The table below shows the individual components of Board of Management compensation in accordance with IFRS.

B 34/1

Board of Management Compensation According to IFRS

€ thousand	2021	2022
Base compensation	5,975	6,335
Fringe benefits	2,982	1,296
Pension installment	303	732
Total short-term non-performance-related compensation	**9,260**	**8,363**
Short-term performance-related cash compensation	11,105	7,280
Total short-term compensation	**20,365**	**15,643**
Stock-based compensation (Aspire) earned in the respective year	5,261	8,909
Change in value of existing entitlements to stock-based compensation (Aspire)	(760)	533
Total stock-based compensation (long-term incentive)	**4,501**	**9,442**
Service cost for pension entitlements earned in the respective year	3,800	2,284
Total long-term compensation	**8,301**	**11,726**
Severance indemnity in connection with the termination of a service contract	3,871	–
Aggregate compensation (IFRS)	**32,537**	**27,369**

Total compensation of the Board of Management and Supervisory Board according to the German Commercial Code (HGB) amounted to €30,786 thousand (2021: €33,738 thousand), with the Board of Management accounting for €25,779 thousand (2021: €29,174 thousand) and the Supervisory Board for €5,007 thousand (2021: €4,564 thousand). The compensation of the Board of Management comprised short-term non-performance-related compensation of €8,363 thousand (2021: €9,260 thousand), short-term performance-related cash compensation of €7,280 thousand (2021: €11,105 thousand), and long-term stock-based cash compensation (Aspire) of €10,136 thousand (2021: €8,809 thousand). The compensation of the Supervisory Board comprised attendance fees of €435 thousand (2021: €239 thousand), compensation for committee duties of €900 thousand (2021: €850 thousand), and fixed compensation of €3,672 thousand (2021: €3,475 thousand).

Pension payments to former members of the Board of Management and their surviving dependents in 2022 amounted to €12,230 thousand (2021: €11,789 thousand). According to IFRS, the defined benefit

obligation for former members of the Board of Management and their surviving dependents amounted to €164,428 thousand (2021: €203,347 thousand). There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2022, or at any time during 2022 or 2021. No contingent liabilities were entered into for these individuals.

Further information on the compensation of the Board of Management and Supervisory Board is provided in the Compensation Report, which is publicly accessible at www.bayer.com/cpr.

35. Events after the end of the reporting period

Introduction of global minimum tax framework

Based on the model rules for a new global minimum tax framework issued by the OECD, EU Directive (2022/2523) entered into force in December 2022, and is to be implemented in domestic law. Germany has announced its intention to implement this directive from 2024 onwards. The Bayer Group will be affected by the introduction of the global minimum tax framework. While the overarching framework has been published, we are awaiting the legislation and detailed guidance to assess the full implications.

Board of Management

The Supervisory Board of Bayer AG has appointed Bill Anderson to become CEO of Bayer, effective June 1, 2023. He will join Bayer as a member of the Board of Management on April 1, 2023. Current CEO Werner Baumann will retire at the end of May 2023.

Leverkusen, February 17, 2023
Bayer Aktiengesellschaft

The Board of Management

Werner Baumann	Sarena Lin	Wolfgang Nickl
Stefan Oelrich	Rodrigo Santos	Heiko Schipper

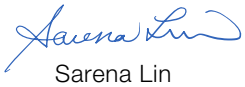
Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles for financial reporting, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Bayer Group, and the combined management report includes a fair review of the development and performance of the business and the position of the Bayer Group and Bayer AG, together with a description of the principal opportunities and risks associated with the expected development of the Bayer Group and Bayer AG.

Leverkusen, February 17, 2023
Bayer Aktiengesellschaft

The Board of Management


Werner Baumann


Sarena Lin


Wolfgang Nickl


Stefan Oelrich


Rodrigo Santos


Heiko Schipper

Independent Auditor's Report

To Bayer Aktiengesellschaft, Leverkusen/Germany

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE COMBINED MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Bayer Aktiengesellschaft, Leverkusen/Germany, and its subsidiaries (the Group) which comprise the consolidated statement of financial position as at December 31, 2022, the consolidated statement of profit and loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from January 1 to December 31, 2022, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined management report for the parent and the group of Bayer Aktiengesellschaft, Leverkusen/Germany, for the financial year from January 1 to December 31, 2022. In accordance with the German legal requirements, we have not audited the content of those parts of the combined management report set out in the appendix to the auditor's report.

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 IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) German Commercial Code (HGB) 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, 2022 and of its financial performance for the financial year from January 1 to December 31, 2022, and
// the accompanying combined management report as a whole provides an appropriate view of the Group's position. In all material respects, this combined 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 audit opinion on the combined management report does not cover the content of those parts of the combined management report set out in the appendix to the auditor's report.

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 combined management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the combined 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 Institut der Wirtschaftsprüfer (IDW). We performed the audit of the consolidated financial statements in supplementary compliance with the International Standards on Auditing (ISA). Our responsibilities under those requirements, principles and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined 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 commercial 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 audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the combined 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 to December 31, 2022. These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In the following we present the key audit matters we have determined in the course of our audit:

1. Recoverability of goodwill and other intangible assets
2. Presentation of risks arising from product-related legal disputes
3. Measurement of pension obligations and plan assets

Our presentation of these key audit matters has been structured as follows:

a) description (including reference to corresponding information in the consolidated financial statements)
b) auditor's response

1. Recoverability of goodwill and other intangible assets

a) In the consolidated financial statements of Bayer Aktiengesellschaft, an amount of EUR 39,648 million (32% of the Group's total assets) is presented under the item of the statement of financial position "goodwill". "Other intangible assets" also include patents and technologies of EUR 11,138 million (9% of the Group's total assets), trademark rights of EUR 6,192 million (5% of the Group's total assets) and research and development projects of EUR 3,764 million (3% of the Group's total assets). Other items include marketing and sales rights, production rights and other rights, and advance payments made in the amount of EUR 3,089 million (2% of the Group's total assets). The Company allocates the goodwill to the reporting segments within the Bayer Group. Regular impairment tests of goodwill and R&D projects and ad-hoc impairment tests of other intangible assets are carried out by comparing the respective carrying amounts with their respective recoverable amounts. As a rule, the recoverable amount is determined on the basis of the fair value less costs to sell. Such determination is based on capital value-oriented methods due to the fact that market values are usually not available for the individual strategic business entities. The fair value is calculated using discounted cash flow models based on the Bayer Group's medium-term planning prepared by the executive directors and extrapolated on the basis of assumptions for long-term growth rates. Discounting is based on the weighted average cost of capital of the cash-generating units concerned. The result of this valuation depends to a large extent on the estimates by the executive directors of the future cash flows of the cash-generating units concerned (usually the strategic business entity or product family) and the discount rate applied, and is therefore subject to significant uncertainty. In the light of this, and owing to the underlying complexity of the valuation models, this issue was of particular importance within the framework of our audit.

   The statements made by the executive directors on the subject of goodwill and other intangible assets are contained in sections 3 and 14 of the notes to the consolidated financial statements.

b) In our audit, among other things, we reconstructed the methodology used to perform the impairment tests and assessed the calculation of the weighted cost of capital. We assured ourselves of the appropriateness of the future cash inflows used in the valuation, among other things by a walkthrough and critical assessment of the underlying planning process. We also assessed the appropriateness of the future cash flows used in the valuation, in particular by comparing this information with the Company's medium-term planning and by checking selected planning assumptions against general and industry-specific market expectations. For this, we also assured ourselves that the costs of the Group functions included in the Enabling Functions and Consolidation segment of the segment report were appropriately taken into account in the impairment test of the reportable segments concerned. We intensively studied the parameters used to determine the discount rate applied and assessed the completeness and correctness of the calculation scheme. Owing to the material significance of goodwill, we further performed additional sensitivity analyses of our own for the reportable segments (carrying amount in comparison with the recoverable amount). We also consulted internal specialists from the Valuation Services department on specific areas of the audit.

2. Presentation of risks arising from product-related legal disputes

a) Bayer Group companies are involved in judicial and extra-judicial proceedings with public authorities, competitors and other parties. These proceedings give rise to legal risks, in particular in the areas of product liability, competition and anti-trust law, patent law, tax law, and environmental protection.

Among other cases, lawsuits seeking compensatory and punitive damages have been brought in the United States against Monsanto Company, St. Louis/U.S.A. (Monsanto), a subsidiary of Bayer Aktiengesellschaft. In one of these lawsuits, the plaintiffs allege that they were exposed to glyphosate-based products manufactured by Monsanto and that this exposure damaged their health. In addition, Monsanto has been named in lawsuits brought by various governmental entities in the United States, which claim that Monsanto and its predecessor companies, as manufacturers of PCBs, are responsible for various kinds of environmental damage caused by PCBs, including in bodies of water. In the above-mentioned litigations, Bayer has successively concluded settlement agreements of varying scope with some of the plaintiffs or plaintiffs' attorneys since 2020 and in the past financial year to resolve parts of the litigations concerned. Monsanto is also facing lawsuits alleging personal injury and/or property damage from the use of and exposure to PCB products.

Whether and to what extent it is necessary to recognize a provision to account for one or more of the present legal disputes is determined to a large extent by the estimates and discretionary assumptions of the executive directors. Against this background and due to the amount of the claims asserted, the above-mentioned product-related disputes of the Bayer Group were, in our opinion, of particular significance for the audit.

The statements made and explanations provided by the executive directors on the subject of the legal disputes mentioned above are contained in section 30 of the notes to the consolidated financial statements.

b) During our audit, we assessed, among other things, the process established by the Company to recognize and assess the outcome of the judicial and extra-judicial proceedings and the appropriate presentation of a legal dispute in the statement of financial position. In addition, we held regular discussions throughout the year with the Company's internal legal department in order to have the current developments and reasons that led to the corresponding estimates regarding the expected outcome of the proceedings explained to us. We critically examined and assessed the explanations and the information and evidence received in each case. We also checked the recognition and the measurement of the relevant provisions for those settlement agreements that have already been concluded in connection with the significant lawsuits in the financial year by performing sample-based comparisons with the underlying settlement agreements. The evolution of significant legal disputes, including the estimations concerning the possible outcome of proceedings, was made available to us in writing by the Company. As of the reporting date, we also requested external attorney confirmations, which we critically assessed. Taking the estimations of the Company into account, we also critically assessed the assumptions underlying the provisions for expected defense costs and assessed the plausibility of the provision amounts on the basis of experience from similar proceedings in the past and on other evidence.

3. Measurement of pension obligations and plan assets

a) Within the Bayer Group, defined benefit obligations exist that are measured in accordance with IAS 19 using the projected unit credit method. The present value of the defined benefit obligation as at December 31, 2022 is EUR 19,697 million. After deducting the fair value of the plan assets in the amount of EUR 15,905 million held to meet the defined benefit obligations, the resulting deficits linked to the pension plans are shown as a net liability of EUR 4,388 million under the item "provisions for pensions and similar obligations". These are matched by pension plans with a surplus that are recognized as net assets in the amount of EUR 596 million under the item "other receivables". At EUR 12,701 million and EUR 9,187 million, the defined benefit obligation and plan assets are mostly attributable to domestic Group companies.

Determining the present value of pension obligations is complex since the valuation requires to make various actuarial assumptions of a financial and demographic nature. Therefore, the Company deploys an external actuary for calculating the present value of pension obligations. In the calculation, the assumptions about the discount rate and future pension increases are of most significance on account of the present value of pension obligations' sensitivity with respect to changes of each of these parameters. In the reporting period, both parameters were considerably influenced by market-driven volatilities in the capital market interest rates and inflation expectations. Moreover, the market volatilities have led to greater fluctuations in the fair values of material asset classes.

The determination of the uniform discount rates is based on the reporting date yields of currency-specific, high-quality AA-rated corporate bond portfolios or their extrapolation for long-term periods. Unless there are sufficient empirical corporate bond yields available for longer residual terms, government bond yields increased by risk premiums are used. The assumption about future pension increases combines current inflation with the market's inflation expectations for future periods taking into account the structure and duration of pension obligations.

In the reporting period, this matter was of particular significance for our audit, in particular due to the market-driven volatilities and the discretionary assumptions and estimates made by the executive directors in determining the valuation.

The statements made and explanations provided by the executive directors on the subject of the pension provisions and similar obligations are contained in section 3 and 22 of the notes to the consolidated financial statements.

b) First, based on the existing benefit obligations, we reconstructed the methodology used to valuate the pension obligations and assessed whether the actuarial calculation method applied is acceptable. Furthermore, we assessed to what extent the valuation was influenced by subjectivity, complexity or other inherent risk factors. In assessing the assumptions as well as the applied calculation methodology, we involved internal specialists, in particular actuaries, from the Benefit & Compensation department in the audit team. In the course of their activities, our actuaries assured themselves of the competence, capabilities and objectivity of the actuary commissioned by Bayer Aktiengesellschaft and reviewed its work results, including by recalculating the present value of pension obligations of individual deliberately selected pension entitlements. Our audit procedures also included evaluating the appropriateness of the assumptions used as well as assessing the underlying models for deriving the parameters classified as critical due to the present value of pension obligations' sensitivity. With regard to determining the discount rate, we assured ourselves that the bond portfolios used were appropriately and continuously delimited, assessed the derivation of the yield curves resulting from the bond yields, and reconstructed the calculation of the uniform discount rate, which was made based on the payout profile and the yield structure. With regard to the pension trend model, we veri-fied the appropriateness of the inflation data used, in particular by comparing it with market expectations, and assessed the modeling of the pension adjustment cycles and the timing of the forecast model.

As part of the audit of plan assets, we first obtained an understanding of the various asset sources and the processing of financial information in the actuarial report. In order to examine the fair values of the plan assets, we were particularly provided with bank confirmations, trust confirmations and asset overviews of the fund managers. We have had the prices shown in these documents and the determination of the fair values of non-marketable financial instruments audited by internal valuation

specialists for financial instruments in the Financial Services department on a sample basis. Regarding the audit of the valuation of the plan assets held via a pension fund, we involved the auditor of the pension fund as a component auditor. We assured ourselves of this auditor's competence, capabilities and objectivity and inspected its work results with professional skepticism before using them.

In addition, we assessed whether the disclosures in the notes to the consolidated financial statements on the assumptions underlying the valuation are complete and correct.

Other Information

The executive directors and/or the supervisory board are responsible for the other information. The other information comprises

// the report of the supervisory board,
// the foreword on the compensation report,
// the compensation report according to Sec. 162 German Stock Corporation Act (AktG),
// the unaudited content of those parts of the combined management report specified in the appendix to the auditor's report,
// the executive directors' confirmation regarding the consolidated financial statements and the combined management report pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB, and
// all other parts of the annual report,
// but not the consolidated financial statements, not the audited content of the combined management report and not our auditor's report thereon.

The supervisory board is responsible for the report of the supervisory board and the foreword on the compensation report. The executive directors and the supervisory board are responsible for the declaration according to Section 161 AktG, which is part of the corporate governance statement included in section "Corporate Governance Report" of the combined management report, and for the compensation report. Otherwise the executive directors are responsible for the other information.

Our audit opinions on the consolidated financial statements and on the combined management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information identified above and, in doing so, to consider whether the other informations

// is materially inconsistent with the consolidated financial statements, with the audited content of the combined management report or our knowledge obtained in the audit, or
// otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Combined Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB, 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 executive directors are 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 (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are 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 executive directors are responsible for the preparation of the combined 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 executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a combined 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 combined 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 combined management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined 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 combined 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 audit opinions on the consolidated financial statements and on the combined 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) and in supplementary compliance with the ISA 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 combined 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 combined 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 audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures relevant to the audit of the combined management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- conclude on the appropriateness of the 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 combined management report or, if such disclosures are inadequate, to modify our respective audit 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 IFRS as adopted by the EU and with the additional requirements of German commercial law pursuant to Section 315e (1) HGB.

// obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the combined management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

// evaluate the consistency of the combined management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

// perform audit procedures on the prospective information presented by the executive directors in the combined management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the 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 audit 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 those charged with governance 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 provide those charged with governance 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 actions taken or safeguards applied to eliminate independence threats.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements for the current period and are therefore the key audit matters. We describe these matters in the auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Report on the Audit of the Electronic Reproductions of the Consolidated Financial Statements and of the Combined Management Report Prepared for Publication Pursuant to Section 317 (3a) HGB

Audit Opinion

We have performed an audit in accordance with Section 317 (3a) HGB to obtain reasonable assurance whether the electronic reproductions of the consolidated financial statements and of the combined management report (hereinafter referred to as "ESEF documents") prepared for publication, contained in the file, which has the SHA-256 value 24A503DAFF674C852B3555E441EB246A972D660139BB9B9655635347372658F8, meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB ("ESEF format"). In accordance with the German legal requirements, this audit only covers the conversion of the information contained in the consolidated financial statements and the combined management report into the ESEF format, and therefore covers neither the information contained in these electronic reproductions nor any other information contained in the file identified above.

In our opinion, the electronic reproductions of the consolidated financial statements and of the combined management report prepared for publication contained in the file identified above meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB. Beyond this audit opinion and our audit opinions on the accompanying consolidated financial statements and on the accompanying combined management report for the financial year from January 1 to December 31, 2022 contained in the "Report on the Audit of the Consolidated Financial Statements and of the Combined Management Report" above, we do not express any assurance opinion on the information contained within these electronic reproductions or on any other information contained in the file identified above.

Basis for the Audit Opinion

We conducted our audit of the electronic reproductions of the consolidated financial statements and of the combined management report contained in the file identified above in accordance with Section 317 (3a) HGB and on the basis of the IDW Auditing Standard: Audit of the Electronic Reproductions of Financial Statements and Management Reports Prepared for Publication Purposes Pursuant to Section 317 (3a) HGB (IDW AuS 410 (06.2022)) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibilities in this context are further described in the "Group Auditor's Responsibilities for the Audit of the ESEF Documents" section. Our audit firm has applied the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the parent are responsible for the preparation of the ESEF documents based on the electronic files of the consolidated financial statements and of the combined management report according to Section 328 (1) sentence 4 no. 1 HGB and for the tagging of the consolidated financial statements according to Section 328 (1) sentence 4 no. 2 HGB.

In addition, the executive directors of the parent are responsible for such internal controls that they have considered necessary to enable the preparation of ESEF documents that are free from material intentional or unintentional non-compliance with the requirements for the electronic reporting format pursuant to Section 328 (1) HGB.

The supervisory board is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Audit of the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB. We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

// identify and assess the risks of material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion.
// obtain an understanding of internal control relevant to the audit on the ESEF documents in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
// evaluate the technical validity of the ESEF documents, i.e. whether the file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815, in the version in force at the reporting date, on the technical specification for this electronic file.
// evaluate whether the ESEF documents enable a XHTML reproduction with content equivalent to the audited consolidated financial statements and to the audited combined management report.
// evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the reporting date, enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as Group auditor by the shareholders' meeting on April 29, 2022. We were engaged by the supervisory board on June 28, 2022. We have been the Group auditor of Bayer Aktiengesellschaft, Leverkusen/Germany, without interruption since the financial year 2017.

We declare that the audit 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).

OTHER MATTER – USE OF THE AUDITOR'S REPORT

Our auditor's report must always be read together with the audited consolidated financial statements and the audited combined management report as well as with the audited ESEF documents. The consolidated financial statements and the combined management report converted into the ESEF format – including the versions to be submitted for inclusion in the Company Register – are merely electronic reproductions of the audited consolidated financial statements and the audited combined management report and do not take their place. In particular, the ESEF report and our audit opinion contained therein are to be used solely together with the audited ESEF documents made available in electronic form.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Michael Mehren.

Munich/Germany, February 20, 2023

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed:
Andreas Wermelt
Wirtschaftsprüfer
(German Public Auditor)

Signed:
Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

Appendix to the Auditor's Report:
Parts of the Combined Management Report whose content is unaudited
We have not audited the content of the following parts of the combined management report:

// Table A 1.2.1/2 "Nonfinancial Group Targets Through 2030", including the statements in the footnotes, as well as the following indented explanatory passages on the Group's non-financial targets contained in section 1.2.1 of the combined management report,
// the statements made in the sub-section "EU Taxonomy" in section 1.2.1 of the combined management report,
// the statements made on the subject of Scope 3 emissions in Table A 1.7/1, as well as the related statements, in section 1.7 of the combined management report
// the statements made on the appropriateness and efficiency of the internal control system (ICS) and the risk management system (RMS) contained in section 3.2.1 under "Assessment of risk management system and internal control system in accordance with Section 91 (3) AktG" of the combined management report,
// the statement on corporate governance pursuant to Section 289f and Section 315d HGB included in section 4.1 of the combined management report,
// all cross-references to the Company's websites and the information to which these cross-references refer.

Limited Assurance Report of the Independent Practitioner Regarding the Additional Non-Financial Information of the Group in the Combined Management Report

To Bayer Aktiengesellschaft, Leverkusen/Germany

Engagement

As requested, we have performed a limited assurance engagement on the following information in the combined management report of Bayer Aktiengesellschaft, Leverkusen/Germany, (hereafter referred to as "the Company") for the financial year from January 1 to December 31, 2022:

// Table A 1.2.1/2 "Nonfinancial Group Targets Through 2030", with the exception of the information on scope 1 and 2 greenhouse gas emissions, and the indented text passages following on this table on the non-financial group targets and the implementation of Regulation (EU) 2020/852 and
// Information on scope 3 greenhouse gas emissions in table A 1.7/1 "Greenhouse Gas Emissions" as well as the text passages following on this table on scope 3 emissions

(hereafter together referred to as "additional non-financial information").

We do not express a conclusion on the external sources of documentation and expert opinions stated in the additional non-financial information.

Responsibilities of the Executive Directors

The executive directors of Bayer Aktiengesellschaft are responsible for the preparation of the information in accordance with the principles stated in the Sustainability Reporting Standards of the Global Reporting Initiative (hereafter referred to as: "GRI Principles"), the method papers developed by Bayer Aktiengesellschaft and Article 8 of Regulation (EU) 2020/852 of the European Parliament and the Council of June 18, 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (hereafter referred to as "EU Taxonomy Regulation") and the delegated acts adopted thereon, as well as with the interpretation of the wording and terminology contained in the EU Taxonomy Regulation and the delegated acts adopted thereon by the executive directors, as is presented in section 1.2.1 of the combined management report.

These responsibilities of the executive directors of the Company include the selection and application of appropriate methods regarding the additional non-financial information and the use of assumptions and estimates for individual non-financial information of the Group which are reasonable under the given circumstances. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of non-financial reporting that is free from material misstatement, whether due to fraud (fraudulent non-financial reporting) or error.

Some of the wording and terminology contained in the EU Taxonomy Regulation and the delegated acts adopted thereon are still subject to considerable interpretation uncertainty and have not yet been officially clarified. Therefore, the executive directors have laid down their own interpretation of the EU Taxonomy Regulation and of the delegated acts adopted thereon in section 1.2.1 of the combined management report. They are responsible for the reasonableness of this interpretation. As there is the inherent risk that indefinite legal concepts may allow for various interpretations, the legal conformity of the interpretation is prone to uncertainty.

The preciseness and completeness of environmental data of the additional non-financial information is subject to inherent restrictions resulting from the way how the data was collected and calculated and from assumptions made.

Responsibilities of the Independent Practitioner

Our responsibility is to express a conclusion on the information based on our work performed within our limited assurance engagement.

Our audit firm applies the Quality Assurance Standard: Quality Assurance Requirements in Audit Practices (IDW QS 1) promulgated by the Institut der Wirtschaftsprüfer (IDW). We have fulfilled our professional responsibilities in accordance with the German Public Auditor Act (WPO) and the Professional Charter for German Public Auditors and Sworn Auditors (BS WP/vBP) including the requirements on independence.

We conducted our work in accordance with the International Standard on Assurance Engagements 3000 (Revised): Assurance Engagements Other than Audits or Reviews of Historical Financial Information (ISAE 3000 (Revised)), developed and approved by the IAASB. This Standard requires that we plan and perform the assurance engagement so that we can conclude with limited assurance whether matters have come to our attention to cause us to believe that the additional non-financial information in the combined management report of Bayer Aktiengesellschaft, with the exception of the external sources of documentation or expert opinions stated therein, has not been prepared, in all material respects, in accordance with the GRI Principles, the method papers developed by Bayer Aktiengesellschaft and Article 8 of the EU Taxonomy Regulation and the delegated acts adopted thereon, as well as with their own interpretation of the wording and terminology contained in the EU Taxonomy Regulation and the delegated acts adopted thereon, as is presented in section 1.2.1 of the combined management report. The procedures performed in a limited assurance engagement are less in extent than for a reasonable assurance engagement; consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. The choice of assurance work is subject to the practitioner's professional judgment.

Within the scope of our limited assurance engagement, which we performed between October 2022 and February 2023, we performed, among others, the following procedures and other work:

// Gaining an understanding of the structure of the sustainability organization of the Group, and of the stakeholders' engagement
// Procedures to validate the processes and data for the non-financial group targets of the Company in accordance with the GRI Principles and the respective method papers developed by Bayer Aktiengesellschaft
// Decentralized site visits to assess the data underlying the information
// Inquiries of relevant personnel involved in the preparation of the information about the preparation process and about the internal control relating to this process
// Identification of potential risks of material misstatement
// Analytical evaluation of the information
// Assessment of the presentation of the information

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

The determination of the disclosures in accordance with Article 8 of the EU Taxonomy Regulation requires the executive directors to make interpretations of indefinite legal concepts. As there is the inherent risk that indefinite legal concepts may allow for various interpretations, the legal conformity of the interpretation, and hence our related assurance engagement, is prone to uncertainty.

Practitioner's Conclusion

Based on the work performed and the evidence obtained, nothing has come to our attention that causes us to believe that the information in the additional non-financial information of the combined management report of Bayer Aktiengesellschaft, Leverkusen/Germany, for the financial year from January 1 to December 31, 2022 has not been prepared, in all material respects, in accordance with the GRI Principles, the method papers developed by Bayer Aktiengesellschaft as well as the EU Taxonomy Regulation and the delegated acts adopted thereon, as well as with the interpretation by the executive directors presented in section 1.2.1 of the combined management report.

We do not express a conclusion on the external sources of documentation or expert opinions stated in the additional non-financial information.

Restriction of Use and Reference to Limitation of Liability

We issue this report as stipulated in the engagement letter agreed with Bayer Aktiengesellschaft. We are liable solely to Bayer Aktiengesellschaft, Leverkusen/Germany, and our liability is governed by the engagement letter agreed with the Company as well as the "General Engagement Terms for Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften (German Public Auditors and Public Audit Firms)" (IDW-AAB) in the version dated January 1, 2017. We draw attention to the fact that the assurance engagement was performed for the purposes of Bayer Aktiengesellschaft and the report is solely designed for informing Bayer Aktiengesellschaft about the findings of the assurance engagement. Therefore, it may not be suitable for another than the aforementioned purpose. Hence, this report should not be used by third parties as a basis for any (asset) decision. We are responsible solely to the Company. However, we do not accept or assume any responsibility to third parties. Our conclusion was not modified in this respect.

Munich/Germany, February 20, 2023

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed:
Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

Signed:
Sebastian Dingel

C Compensation Report

Contents

1. Foreword by the Chairman of the Supervisory Board

Dear stockholders,

Prof. Dr. Norbert Winkeljohann, Chairman of the Supervisory Board of Bayer AG

On behalf of the Supervisory Board and Board of Management of Bayer AG, I am pleased to present our 2022 Compensation Report.

In addition to providing an introductory summary of the company's performance in 2022 and the resulting Supervisory Board decisions on Board of Management compensation, I would also like to explain the measures that the Supervisory Board has initiated in response to last year's disappointing vote on the 2021 Compensation Report.

Performance in 2022

First of all, I'm pleased to report that 2022 was a highly successful year for our company despite unexpected challenges in supply security at our production sites, supply chain disruptions and the war in Ukraine. We exceeded our initial Group guidance for sales and earnings growth, and are now already within the corridor of the medium-term targets we announced for 2024. This is mainly thanks to agricultural markets developing much better than expected, as well as to growth in the Consumer Health business, which again considerably outperformed the market.

Short-term incentive (STI)

The very strong performance of the Crop Science and Consumer Health divisions led to target-attainment levels of 200% (cap) and 138.3%, respectively, for the divisional component. By contrast, the Pharmaceuticals Division did not meet its growth targets, due in part to unexpected COVID-19-related effects in China and headwinds in parts of its women's health business in the United States. As a result, the incentivized STI target attainment for the division came in at 8.8%, and thus below target.

The Bayer Group's strong operational performance was also reflected in core earnings per share, which came in at €7.94. The target value was therefore exceeded by a significant margin, with attainment of 200% (cap).

Free cash flow came in at €3.1 billion in 2022, which is in line with our guidance. However, the stretched incentivized free cash flow target was missed, resulting in incentivized performance of just 60% of the target value for this component.

The Supervisory Board also evaluated the need for any discretionary adjustments to account for factors outside the ordinary course of business in 2022. The circumstances surrounding the additional provisions for the settlement with the US state of Oregon over PCBs were examined closely, but there was no reason to consider any intervention with respect to Board of Management compensation. The significant divestment gains from the sale of the Environmental Science Professional business and the Nebido™ product were not part of incentivized performance.

Finally, the Supervisory Board evaluated attainment levels for the qualitative Group targets and for the individual targets set for each Board of Management member. Among other things, the focus was on efforts to improve capital market-related activities and the performance of Bayer stock, pipeline development, progress in the liability litigations, transformation programs and the sustainability goals. Overall, the Board of Management performed very well in this respect, too. Based on the pre-defined targets and attainment criteria, performance yielded a strong target attainment.

However, in consultation with the Chairman of the Board of Management, the Supervisory Board reduced his individual performance factor by 14 percentage points. The Supervisory Board and Chairman of the Board of Management did so to take into account the stockholder feedback received during the governance roadshows held last year.

As a result, the Board of Management's average target attainment for the STI was 129.5% overall, compared with 175.47% in 2021.

Long-term incentive (LTI)

The long-term stock-based compensation (LTI) granted in 2019 under Aspire 2.0 was paid out. Bayer stock performed well in 2022, both in absolute terms and relative to the EURO STOXX 50. However, the calculated share price was significantly below the 2019 allocation price, with the stock also underperforming the EURO STOXX 50, the relative performance index, by an even greater margin. Based on the defined calculation method, this meant that the payout achieved (including dividend equivalents) was only 62% of the value of the original allocation. At around 45%, the long-term component accounts for the largest share of the Board of Management members' target direct compensation, helping to ensure strong alignment of Board of Management compensation with shareholder interests and sentiment.

Pay for performance alignment

The Supervisory Board set ambitious target values for the performance criteria. While Bayer had a very strong 2022, the target values agreed for the performance period were only slightly exceeded overall. Despite average STI target attainment being above the target value, target direct compensation (base salary plus variable components) was missed due to the low attainment on the LTI. The average direct compensation awarded to the Board of Management in 2022 amounted to 87.3% of target direct compensation, compared with 92.4% in 2021 and 46.8% in 2020.

Response by the Supervisory Board and Human Resources Committee to the vote on the Compensation Report at the 2022 Annual Stockholders' Meeting

The Board of Management compensation system currently in effect was approved by a large majority of our investors (94.02%) at the 2020 Annual Stockholders' Meeting. However, the 2021 Compensation Report was endorsed by only 24.11% of our investors at the 2022 Annual Stockholders' Meeting, and was thus rejected.

// Following the 2022 Annual Stockholders' Meeting, the Supervisory Board responded to the outcome of the vote by producing an action plan for the period running up to the 2023 Annual Stockholders' Meeting. Covering relevant topics within the existing compensation system, the action plan is based on a detailed review and analysis of feedback, as well as extensive discussions with stockholders representing approximately half of the outstanding shares held by institutional investors. I participated personally in around three-quarters of these discussions so that I could listen to their views and opinions directly. The action plan outlines Bayer's response to the feedback concerning the compensation results as well as specific measures to improve transparency and account for the expectations of our stockholders. Please refer to Chapter 3.1.2 for further details.

To improve our compensation governance practices, we took the following additional steps:

// We expanded the role of the Human Resources Committee, which has been renamed the Human Resources and Compensation Committee, to meet the increased requirements with respect to succession planning and compensation-related tasks.
// We established new process steps with respect to target-setting, target attainment and succession planning, while also optimizing the interfaces to other relevant committees, such as the Audit and ESG committees. See Chapter 3.1.3 for more information.
// We increased the size of the Human Resources and Compensation Committee, with the Vice Chairwoman of the Supervisory Board and the Chairman of the Audit Committee becoming additional members.

Further aspects relating to Board of Management compensation

The Supervisory Board did not increase the compensation of the Board of Management in 2022. The changes shown in the Board of Management compensation tables relate solely to the annualized effects of the compensation increase implemented in the fourth quarter of 2021, which was based on a benchmark review that had been carried out for the first time since 2018.

Outlook for 2023

The targets set for 2023 continue to focus on key value drivers in operational performance, innovation and sustainability goals, and further progress in the product liability cases. They are ambitious in the context of the respective market and competition situations of the divisions, and also in terms of the qualitative targets for the Board of Management and management. All operational targets are geared toward increasing the company's value and seeing this reflected in a further improvement in its share price.

We will review the compensation system for the Board of Management over the course of 2023 before putting it to the vote at the 2024 Annual Stockholders' Meeting.

On behalf of both the Supervisory Board and the Board of Management, I would like to thank our stockholders for their feedback and engagement. We will maintain this close dialogue in 2023 and look forward to hearing your feedback.

Prof. Dr. Norbert Winkeljohann
Chairman of the Supervisory Board

2. Overview of Compensation in 2022

C 2/1

Executive Summary

Compensation system

Long-term incentive (LTI)

4-year performance period (cap: 250% of target)

40%	40%	20%
Relative TSR[1]	ROCE	Sustainability goals

× Change in share price + Dividend equivalent

Short-term incentive (STI)

1-year performance period (cap: 200% of target)

33%	33%	33%
Core EPS (Group level)	Free cash flow (Group level)	cEBITDA margin / Fx & p adj. sales growth (divisional level)

× Individual performance / nonfinancial targets (0.8–1.2)

Base salary

// Fixed compensation

[1] Total shareholder return relative to the EURO STOXX 50 TR benchmark index

Actual performance against 2022 targets

Short-term incentive (STI)[2]

	target	attained/max
Core EPS:		200/200
Free cash flow:		60/200
cEBITDA margin / Fx & p adj. sales growth:		108/200
Performance factor:		95/120
Total:		**117/200**
CEO payout (€m):		**1.9/3.2**

Long-term incentive (LTI)[3]

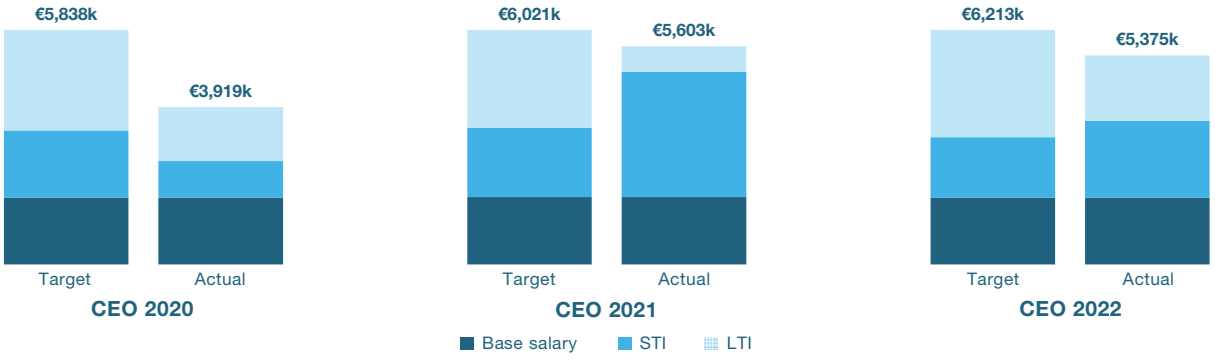
	target	attained/max
Relative TSR:		57/200
Share price development:		–17%
Accumulated dividends per share:		€9.60
Total:		**62/250**
CEO payout (€m):		**1.7/7.1**

[2] For definition and information on target attainment, see Chapter 3.3.2. For individual target attainment (performance factor) and target attainment at divisional level (cEBITDA margin / Fx & p adj. sales growth), the CEO is shown (rounded).

[3] LTI metrics differ from current compensation system as the LTI plan for the 2019–2022 performance period is based on the Aspire 2.0 design; see Chapter 3.3.2.

CEO compensation 2020–2022

The following graphic shows the target compensation and the compensation payout (base salary and variable compensation)[4] for the CEO[5]:



Since 2020, the actual payout to the CEO has been on average 18% below target.

[4] Excluding fringe benefits and pension installment/service cost. For definition and components of the compensation paid out, see Chapter 3.3.

[5] LTI metrics differ from current compensation system as the LTI plan for the 2019-2022 performance period is based on the Aspire 2.0 design; see Chapter 3.3.2.

3. Compensation Report

The Compensation Report produced by the Board of Management and the Supervisory Board of Bayer Aktiengesellschaft (Bayer AG) outlines the essential features of the compensation packages for the members of the Board of Management and the Supervisory Board of Bayer AG and provides information on the compensation awarded and due to each current or former member of the Board of Management and the Supervisory Board in 2022. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends. The report thus complies with the regulatory requirements of Section 162 of the German Stock Corporation Act (AktG) and the recommendations and suggestions in the April 28, 2022, version of the German Corporate Governance Code. The Guidelines for Sustainable Management Board Remuneration Systems, which was most recently updated in September 2021, are also taken into account.

Pursuant to the stipulations of Section 120a, Paragraph 4 of the AktG, we will propose that the Annual Stockholders' Meeting to be held on April 28, 2023, resolve on the approval of the prepared and audited Compensation Report.

3.1 Review of 2022

3.1.1 Performance in 2022

Global economic growth slowed significantly in 2022, in part due to the impact of the war in Ukraine, which included rising prices and lingering energy supply concerns.

The particular challenges faced by our company included navigating the impact of the COVID-19 pandemic, sourcing alternative forms of energy and maintaining stable supply chains to ensure product supplies to farmers and healthcare systems.

Within this challenging market environment, the Bayer Group was able to significantly increase its sales to €50,739 million. Crop Science sales rose substantially against the prior year (+15.3% Fx & portfolio adj.[1]), with growth in all regions. Sales at Pharmaceuticals advanced year on year (+0.6% Fx & portfolio adj.[1]), with strong performance by Eylea™, our radiology business and our new products Nubeqa™ and Kerendia™ more than offsetting declines due to additional tender procedures in China, among other factors. Consumer Health reported encouraging sales growth (+7.4% Fx & portfolio adj.[1]), with gains across all regions and categories.

EBITDA before special items of the Bayer Group increased by a substantial 20.9% to €13,513 million, with the EBITDA margin before special items rising to 26.6% from 25.4% in the previous year. The Crop Science Division posted a significant increase in EBITDA before special items (margin: 27.3%) thanks to improved business performance. Ongoing efficiency programs also provided additional contributions, underlining their successful implementation. Pharmaceuticals increased its EBITDA before special items (margin: 30.5%) due to higher sales and, to a lesser extent, income from the sale of noncore businesses. At Consumer Health, EBITDA before special items advanced (margin: 22.5%) as a result of the substantial sales growth and the division's successful cost and price management efforts.

Incentivized free cash flow came in at €4,276 million in 2022, giving a target attainment level of 60%. This fell short of our ambitious target, which was missed due to inflation effects within working capital, among other factors. Core earnings per share amounted to €7.94, significantly exceeding both the prior-year figure and our capital market guidance. This was mainly due to the strong earnings contribution from the Crop Science Division. The strong operational performance in 2022 was reflected in the Board of Management's short-term variable compensation (STI).

[1] Due to the hyperinflation-related growth in Argentina and Turkey, currency- and portfolio-adjusted sales growth was adjusted by minus 0.4 percentage points for Crop Science, minus 0.5 percentage points for Pharmaceuticals, and minus 1.0 percentage points for Consumer Health when determining target attainment.

3.1.2 Response to the vote on the 2021 Compensation Report at the 2022 Annual Stockholders' Meeting

In 2020, the compensation system for the Board of Management was presented to the Annual Stockholders' Meeting according to the applicable regulations under the act transposing the second EU Shareholder Rights Directive into German law (ARUG II), and was approved by a large majority (94.02%) of investors. However, the 2021 Compensation Report was endorsed by only 24.11% of the participating stockholders when it was submitted to a vote at the 2022 Annual Stockholders' Meeting. The Supervisory Board acted on these voting results following the Annual Stockholders' Meeting by developing an action plan for the period running up to the 2023 Annual Stockholders' Meeting and beyond. This action plan was also discussed with stockholders in order to gain a better understanding of their specific feedback and criticism.

This action plan comprises, for example, Bayer's response to the criticism aimed at the compensation as well as the development of specific actions to improve transparency and better account for stockholders' expectations. The main steps taken by the Supervisory Board and by the Human Resources and Compensation Committee were as follows:

// Analysis of the criticism voiced by investors and proxy advisors, differentiating between criticism of the system itself and its application
// Review of the existing system and analysis of current market trends
// Engagement Roadshow with investors in October 2022
// Drafting of an action plan encompassing specific measures, commitments and disclosure for the future

We are addressing the feedback we received with our action plan, as outlined below:

C 3.1/1

Investor Focus Areas and Actions Taken in Response

Area of focus	Investor feedback and Bayer's responsive actions
Compensation system	Investors indicated there was no need to change the general compensation system in 2023, but expect Bayer to take investor feedback into account for the 2024 system changes. // Bayer will continue to engage in extensive dialogue with investors to understand their views on the system, and will incorporate feedback from investors and proxy advisors into the modified compensation system that will be subject to a stockholder vote in 2024.

Target-setting process	Some stockholders shared their view that the target-setting process was not sufficiently challenging, in part due to a lack of alignment with the capital market guidance.
	// When setting targets, the Supervisory Board has always taken into account planning values and external parameters such as market growth forecasts, competition information, analysts' expectations and other factors that can have a significant impact on the opportunity and risk profile for the financial year.
	// From 2022, the Supervisory Board ensures that, as a basic principle, the targets set for all KPIs are in line with the capital market guidance.

Use of discretion	Some stockholders raised concerns about the Supervisory Board's perceived use of discretion to exclude the impact of certain items such as litigation costs from the payout calculation.
	// The Supervisory Board did not make any discretionary adjustments or decisions outside of the system-based individual performance evaluation of the Board of Management members.
	// Bayer ensures that target-setting and attainment are always based on the same, consistent principles. To ensure an appropriate incentive to drive performance, significant unplanned and nonrecurring extraordinary effects – positive and negative – are excluded from both the relevant target and the payout calculation (see 3.2.3).
	// With respect to 2022, the Supervisory Board determined, in cooperation with external compensation consultants, that excluding payments in the context of certain ongoing litigations is in line with market practice. By adopting this approach, the Supervisory Board ensures that the Board of Management is motivated, incentivized and compensated for operational performance factors that are within its control.
	
	Some stockholders asked why the Supervisory Board did not intervene on a discretionary basis to reduce the 2021 payout.
	// When operationalizing the compensation system approved at the 2020 Annual Stockholders' Meeting, great importance was attached to avoiding discretionary performance adjustments as far as possible. The current compensation system does not permit the Supervisory Board to make any discretionary intervention in that sense beyond the malus and clawback provisions already in place.
	// In consultation with the Chairman of the Board of Management, the Supervisory Board therefore reduced his individual performance factor by 14 percentage points. The Supervisory Board and the Chairman of the Board of Management did so to take into account the stockholder feedback received during the governance roadshows last year.
	// In consideration of investor feedback and the desire to more closely align payouts with the stockholder experience, the Supervisory Board will have limited use of discretion in the individual performance evaluation for 2023.
	// A more comprehensive right of intervention will be developed for the compensation system that will be subject to a stockholder vote in 2024. Bayer will always provide transparent reporting on discretionary intervention.

Pension costs	Some stockholders expressed concern that legacy defined contribution plans would result in inflated service costs, which is not in line with market practice.
	// There was no discretionary intervention or adjustment to the pension commitment by the Supervisory Board. The increased service cost for the pension of Werner Baumann was as a result of accounting effects, in particular from the change in actuarial assumptions, such as the discount rate.
	// Going forward, the Compensation Report will include enhanced disclosures regarding factors impacting service costs.

C 3.1/1 (continued)

Investor Focus Areas and Actions Taken in Response

Area of focus	Investor feedback and Bayer's responsive actions

Timing of payments for departing Board of Management members	Stockholders had concerns around what they believed to be the early payment of all outstanding LTI tranches for a departing Board of Management member.
	// There was no discretionary intervention by the Supervisory Board. Bayer has not made any early LTI payments prior to the original planned payout date, and will not do so moving forward either.
	// At the time of the Board of Management member's departure, all current LTI tranches had been fully vested and were reported in full as awarded compensation pursuant to the activity-related (i.e. not payment-based) interpretation of accounting rules under Section 162 of the AktG.
	// Moving forward, the Compensation Report will include enhanced disclosures regarding the approach to payments for outgoing Board of Management members

Transparency	Stockholders called for greater transparency in the compensation process.
	// The Supervisory Board has taken extensive measures, with a particular focus on:
	1. Developing a framework and principles to support a clear approach in setting targets, applying adjustments, and measuring and evaluating performance.
	2. Defining processes to ensure target-setting and performance measurement better reflect stockholder expectations, e.g. by aligning the objectives with the external capital market guidance.
	3. Enhancing disclosure around the decisions taken by the Supervisory Board.
	// As a result, the target-setting and attainment process was presented in a more robust and transparent manner (see 3.2.3) and the work of the Human Resources and Compensation Committee has been aligned more closely with international standards (see 3.1.3).
	// In the 2022 Compensation Report, the Foreword by the Chairman of the Supervisory Board was expanded to include an explanation and summary that clearly illustrate how the company's performance is aligned with Board of Management compensation.

3.1.3 Composition of the Human Resources and Compensation Committee

The Human Resources and Compensation Committee's primary task is to prepare human resources and compensation decisions to be made by the full Supervisory Board, and to deliberate on the long-term succession planning for the Board of Management. In view of the increasing requirements, the committee was strengthened with the addition of the Chairman of the Audit Committee and the Vice Chairwoman of the Supervisory Board to its ranks, taking its membership to six in total.

In addition, a detailed process was developed and established in 2022 to make the work of the Committee even more robust. New process steps and regular committee meetings were added over the course of the year, while also ensuring the involvement of other relevant committees, such as the Audit and ESG committees.

In summary, the work of the Human Resources and Compensation Committee going forward will focus on various topics relating to Board of Management matters, including both current focal points and areas that will be afforded greater emphasis in the future:

// Reviewing and establishing compensation levels and structure
// Reviewing and refining the compensation system
// Reporting and compiling reports on compensation matters
// Setting targets and monitoring performance criteria for variable compensation
// Assessing performance for variable compensation (STI/LTI)
// Succession planning

3.1.4 Establishment of Board of Management compensation for 2022

Compensation is designed to be in alignment with the company's performance while also reflecting the stakeholder experience. Against this backdrop, the Supervisory Board reviews whether compensation levels are in need of adjustment, and also examines the short-term incentive (STI) payments that would mathematically arise based on the compensation system and the targets defined prior to the start of the year.

Outcome of the compensation review in 2022
The Supervisory Board did not increase the compensation of the Board of Management in 2022. It looked into current market developments and decided not to make any adjustments for 2022 despite the existing gaps compared to the benchmark group.

Compensation was last increased in October 2021 based on an external expert report on the market, after the previous market-based adjustment had been undertaken around five years ago. As the compensation increase came into effect during the course of the year, it was only partially reflected in the target and actual compensation levels for 2021. By contrast, target compensation for 2022 includes the full effect of the adjustments made in 2021, as shown in the tables later in this report. As part of the same resolution, the target amounts in the long-term variable cash compensation of all Board of Management members were raised from 150% to 160% of base compensation, and the target amounts in their short-term variable cash compensation were reduced by the same amount, from 100% to 90% of base compensation, with effect from January 1, 2022. This aligned the compensation structure for the Board of Management members even more closely to the long-term performance of the company and its share price, and thus also the interests of our stockholders.

Extraordinary developments
The Supervisory reviewed the potential special effects arising from the provisions established for PCBs in connection with the US state of Oregon's liability claims, and concluded they were not performance-relevant with respect to operational performance and outside of the Board of Management's control in the financial year.

C 3.1/2

Considerations of the Human Resources and Compensation Committee

Factor	Review conclusions
Financial impact	The Supervisory Board deemed the negative financial impact of the PCB litigations to be so significant that it warranted a closer examination of potential measures beyond the standard practice. As part of the PCB litigations, Bayer has broad indemnity claims against PCB customers and is enforcing these claims in court and through ongoing negotiations. In view of this, and due to accounting rules, the negative impact on earnings and cash flow may only be of a temporary nature.
Individual performance and the role of Board of Management members	The Supervisory Board assessed whether the Board of Management had sufficiently evaluated the legal risk relating to PCBs when reaching the decision to acquire Monsanto. An external legal opinion concluded that, with respect to liability risks in connection with PCBs, the Board of Management members had acted in line with their duties under the business judgment rule when deciding to conclude the merger agreement with Monsanto. In the course of assessing the litigation risk in the US state of Oregon, the Board of Management decided to pursue a settlement in the interests of the company and its stockholders. Comprehensive analyses were conducted and approved by the Supervisory Board. Five of the six Board of Management members were not members of the Board of Management of Bayer at the time Monsanto was acquired and therefore played no active role in the acquisition.
Supporting the strategy	From a strategic point of view, concluding the merger agreement with Monsanto was the correct business decision to make. The Board of Management reached its decision based on an appropriate amount of information, and it was the best-possible decision to support Bayer's long-term development.
Impact of external developments	The potential PCB-related legal risks arising from the acquisition of Monsanto were known from the onset and were evaluated. Legal risks of this nature cannot be completely ruled out in corporate acquisitions.
Compensation structure	The development of the PCB litigations is reflected in the performance of Bayer stock, and therefore has a negative impact on the LTI payout. It also has an adverse effect on the shares held as part of the Share Ownership Guidelines. However, the operational performance in the financial year, which is reflected in the STI, is not impacted. Payments in connection with the PCB litigations are not included in the free cash flow KPI, ensuring the same performance measurement criteria are applied when setting targets and establishing target attainment. This approach is standard market practice for litigations, and is essential to ensuring the effective incentivization of free cash flow.
Neutrality and consistency	We have applied the same approach as in previous years, with no negative adjustments made to the formula-based results for short- and long-term variable compensation.

3.2 Design of Board of Management compensation

The Supervisory Board sets the Board of Management's compensation pursuant to Section 87, Paragraph 1 of the AktG. The current compensation system for the Board of Management of Bayer AG applies in the version approved by a large majority (94.02%) at the Annual Stockholders' Meeting on April 28, 2020. The compensation system is submitted to the Annual Stockholders' Meeting for approval whenever significant changes are made to this system, or at least every four years.

The Supervisory Board applies the following guidelines and principles when designing the compensation system:

C 3.2/1

We ensure …	We avoid …
✓ … that we promote long-term and sustainable performance	× … prioritizing short-term success at the expense of long-term performance
✓ … that we set ambitious and measurable targets	× … offering guaranteed variable compensation levels
✓ … that compensation is aligned toward performance and success	× … paying special discretionary bonuses
✓ … that short-term variable compensation is aligned toward the attainment of annual targets	× … neglecting the interests of our stockholders
✓ … that long-term variable compensation is aligned toward share price performance, return on investment and attainment of ESG targets	× … incentivizing inappropriate risks
✓ … that we take regulatory requirements fully into account	× … inappropriately high payouts and excessive severance payments
✓ … that we offer appropriate compensation in line with market rates	× … retrospectively adjusting targets
✓ … that compensation is capped	× … providing insufficient transparency in our compensation reporting
✓ … that we are highly transparent in our compensation reporting	× … overlapping STI and LTI targets

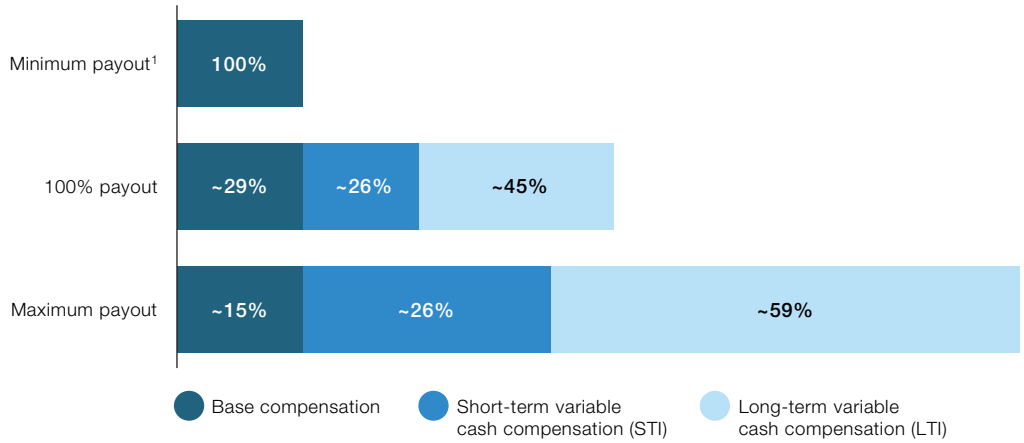
The section below provides an overview of the compensation system in place for the Board of Management. A detailed description of the compensation system can be found at www.bayer.com/cpr and in Chapter 3.3 “Compensation components in detail.”

3.2.1 Design of the compensation system

The total compensation of the members of the Board of Management of Bayer AG comprises fixed and variable components. Over 70% of the contractually agreed target direct compensation is performance-based:

C 3.2/2

Design of Board of Management Compensation (Target Direct Compensation)



Scenario[2]	Explanation
Minimum payout	STI: 0% of target amount; LTI: 0% of target amount
100% payout	STI: 100% of target amount; LTI: 100% of target amount
Maximum payout	STI: 200% of target amount; LTI: 250% of target amount

[1] For the sake of simplicity, the minimum payout shown here is 100% of base compensation, even though dividends already paid out for each virtual share in the respective 4-year LTI performance period would additionally have to be included.
[2] In isolated cases, the specific, individual compensation structure in a fiscal year may deviate slightly from the structure presented above due to compensation adjustments made during the course of the year.

C 3.2/3

Board of Management Compensation System for 2022

Compensation component	Design
Base compensation	// Fixed, contractually agreed compensation // Paid out in monthly installments

Short-term variable cash compensation (STI)	The payout after one year is calculated based on the target amount at the end of the year according to the following parameters:
	// 1/3 weighting: Core EPS at Group level
	// 1/3 weighting: Free cash flow at Group level
	// 1/3 weighting: Clean EBITDA margin and sales growth (Fx & p adj.[1]) at divisional level
	// Individual performance factor (0.8 – 1.2) as a multiplier
	// Payout capped at 200% of individual target amount

Long-term variable cash compensation (LTI)	The payout after four years is calculated based on target attainment at the end of the fourth year according to the following parameters:
	// Absolute performance of Bayer stock
	// 40% weighting: Performance relative to EURO STOXX 50 Total Return
	// 40% weighting: ROCE at Group level
	// 20% weighting: Sustainability targets
	plus dividends paid by Bayer AG over the four-year period for each virtual share conditionally allocated at the beginning of the tranche
	// Payout capped at 250% of individual target amount

Fringe benefits	// Regular health screening
	// Insurance policies
	// Company car with driver/corresponding budget
	// Security installations at private residence
	// Reimbursement of work-related moving expenses
	// Indemnity payments to new members of the Board of Management for variable compensation forfeited on termination of previous employment

Pension entitlements/installment	// Members of the Board of Management newly appointed after January 1, 2020, receive an earmarked pension installment calculated as a percentage of their base compensation and paid out directly in a lump sum // Members of the Board of Management appointed prior to January 1, 2020, receive contribution-based pension entitlements
Maximum total compensation	// The maximum total annual compensation paid out for a fiscal year is €12 million for the Chairman of the Board of Management and €7.5 million for the other Board of Management members
Malus and clawback	// In the event of gross misconduct or misrepresentation in financial reporting, the Supervisory Board can withhold all or part of the STI and LTI (malus) or require their repayment to the company (clawback)
Share Ownership Guidelines	// Pledge to build a certain position size in Bayer stock by the end of a four-year period // Obligation to retain the shares throughout the period of service on the Board of Management and for two years thereafter
Contract termination	// If the service contract is terminated early – other than for cause – at the company's instigation, a severance payment of up to twice the annual compensation may be made, but this is limited to the compensation for the remaining term of the respective contract // Two-year post-contractual noncompete agreement; indemnity payment in the amount of base compensation, any severance payments are deducted from the indemnity payment
Change of control	// In the event of a change of control, members of the Board of Management are – if certain narrow conditions are met – entitled to a severance payment of 250% of annual base compensation, or 200% of annual cash compensation if they were appointed in or prior to 2010. The payment is limited in either case to the compensation for the remaining term of the respective contract, capped at twice the annual compensation.

[1] Fx & p adj. = currency- and portfolio-adjusted

3.2.2 Setting compensation levels

The Supervisory Board reviews the individual compensation levels on the basis of the compensation system to ensure that the Board of Management members receive an appropriate level of compensation in line with market rates in the competitive environment. Bayer conducts benchmarking with its comparison groups at least every three years.

External comparison of compensation

The DAX 40 companies, as well as international competitors that are comparable in terms of size and industry, are taken as a guide when setting compensation levels.

The DAX 40 companies are a suitable primary comparison group, especially in terms of the aspects of size and country. Bayer's economic position is factored in by regularly reviewing the company's relative positioning in the DAX 40 in terms of size as measured by sales, number of employees and market capitalization. On this basis, Bayer aims to ensure its relative positioning within the DAX 40 is in the top third in terms of target total compensation. Reviewing

compensation levels and taking into account size criteria over time ensures that the compensation the members of the Board of Management of Bayer AG receive appropriately reflects the company's positioning.

The international comparison group is taken into account as an additional indicator to validate the competitiveness of Board of Management compensation on an international level, too. The international comparison group currently comprises the following companies:

C 3.2/4

International Comparison Group for Board of Management Compensation			
// AstraZeneca	// BASF	// Bristol Myers Squibb	// Corteva
// FMC Corp	// GlaxoSmithKline	// Johnson & Johnson	// Merck & Co.
// Novartis	// Novo Nordisk	// Nutrien	// Pfizer
// Reckitt Benckiser	// Roche	// Sanofi	// Takeda

Development of compensation vs. workforce

In setting Board of Management compensation, the Supervisory Board also takes into account the company's internal compensation structure in Germany. For this purpose, the Supervisory Board compares the average target direct compensation of the Group's Board of Management with the average target direct compensation of various management levels and the workforce as a whole, taking into account both the current ratios and the changes in ratios over time:

// The first management level below the Board of Management
// Managerial employees
// The overall workforce
// Nonmanagerial employees

3.2.3 Target-setting and attainment process

The Supervisory Board aims to set ambitious yet attainable targets that are in step with the expectations of investors and the capital market.

// The targets used in the short-term incentive program are based on the main KPIs employed to measure the organization's operational success in the current fiscal year.
// The targets used in the long-term incentive system are aimed at incentivizing long-term value creation. Alongside ROCE and ESG-related KPIs, target attainment is largely dependent on the company's absolute share price development relative to the EURO STOXX 50 Total Return, which serves to ensure close alignment between investor interests and management incentivization.

Using the operational planning as a baseline, the Supervisory Board sets a minimum value, a target corridor, a maximum value and additional benchmarks at the start of each fiscal year. When setting the targets, the Supervisory Board takes into account the planning values, along with the following parameters and updated information not already included in the operational planning:

// Market growth forecasts and competition-related information
// Capital market guidance
// Analyst expectations
// Additional factors that could significantly impact the opportunity and risk profile for the fiscal year

At the start of the year, the Supervisory Board also sets nonfinancial Group targets and individual annual targets for each Board of Management member. The target values for these objectives are also determined on the basis of KPIs where possible.

After the year has ended, the Supervisory Board evaluates the performance of the Board of Management based on the level of target attainment for the individual financial and nonfinancial KPIs. Special factors and significant unplanned and nonrecurring effects are evaluated based on the guidelines in place, ensuring that they are handled consistently when determining target attainment.

Special factors and significant unplanned and nonrecurring effects

Special factors in determining EBITDA before special items and core EPS are described in Chapter 2.3 of the Management Report. In addition, significant unplanned and nonrecurring effects may arise that cannot be planned for with sufficient reliability with respect to their occurrence, timing and magnitude, and that may potentially have a significant impact on operational performance in the performance period. In line with the respective planning assumptions, certain effects can – based on a set catalogue of criteria – be excluded from consideration when measuring target attainment, provided they exceed certain thresholds. The Supervisory Board is responsible for making any such decisions.

In 2022, no adjustments were made due to significant unplanned and nonrecurring effects.

Looking ahead to 2023: How extraordinary developments will be handled

When operationalizing the compensation system approved at the 2020 Annual Stockholders' Meeting, great importance was attached to avoiding discretionary performance adjustments as far as possible. However, the significant volatility in previous years and the potential considerable impact of extraordinary developments such as the COVID-19 pandemic and current political crises have underlined the need for the Supervisory Board to be able to take action in the event of extraordinary developments that go far beyond the ordinary course of business. From 2023, the Supervisory Board will therefore introduce limited discretionary powers as part of the existing system in order to ensure that performance can also be evaluated appropriately based on operational performance when such developments materialize. Discretionary adjustments will then be able to be applied within the narrow scope of the nonfinancial performance factor that forms part of the short-term variable compensation (STI). The approach in place for the aforementioned significant unplanned and nonrecurring effects will remain unchanged. A comprehensive right of intervention will be developed for the compensation system that will be subject to a stockholder vote at the 2024 Annual Stockholders' Meeting. Bayer will always provide transparent reporting on discretionary intervention.

3.3 Compensation components in detail

3.3.1 Base compensation

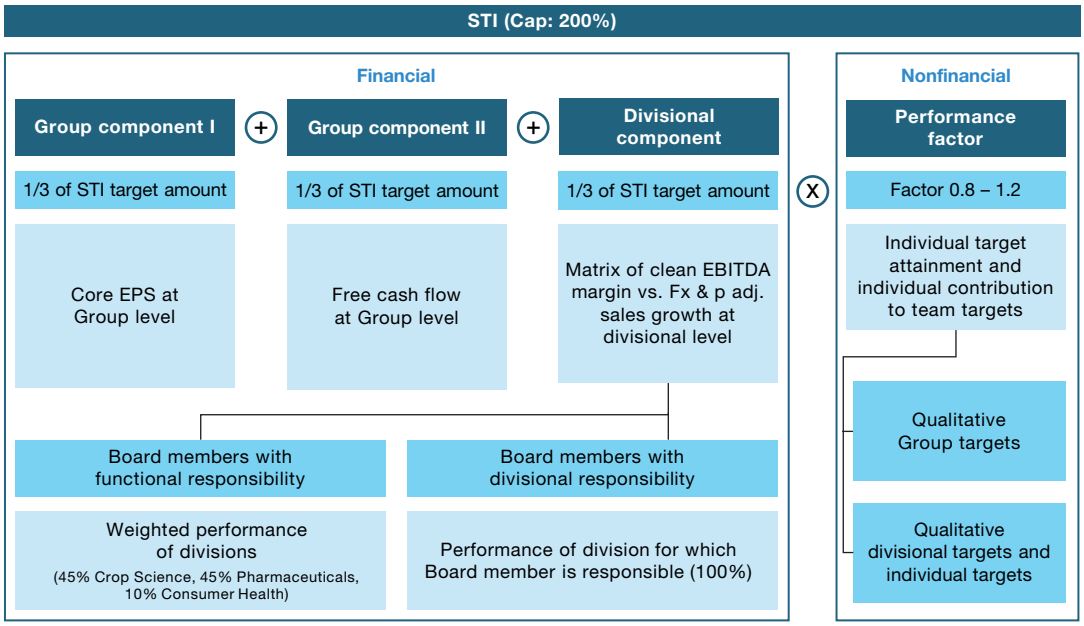
The base compensation is fixed, contractually agreed annual compensation that is paid out in monthly installments within a calendar year. The level of fixed compensation reflects the role on the Board of Management, the area of responsibility and market conditions.

3.3.2 Short-term variable cash compensation (STI) for 2022

The short-term variable cash compensation depends on the success of the business in the respective year. It incentivizes operational success and profitable growth within the defined strategic framework. It also sets targeted incentives to increase profitability (core EPS) and cash flow (free cash flow) development. In addition, the individual performance of the members of the Board of Management is evaluated using a performance factor that permits the establishment of further targets, particularly nonfinancial ones. The target attainment of the STI depends on the three equally weighted financial components and the individual performance factor. A cap of 200% is in place for the individual financial target components and for the STI overall. The components of the short-term variable cash compensation are shown in the graphic below.

C 3.3/1

Components of Short-Term Variable Cash Compensation (STI)



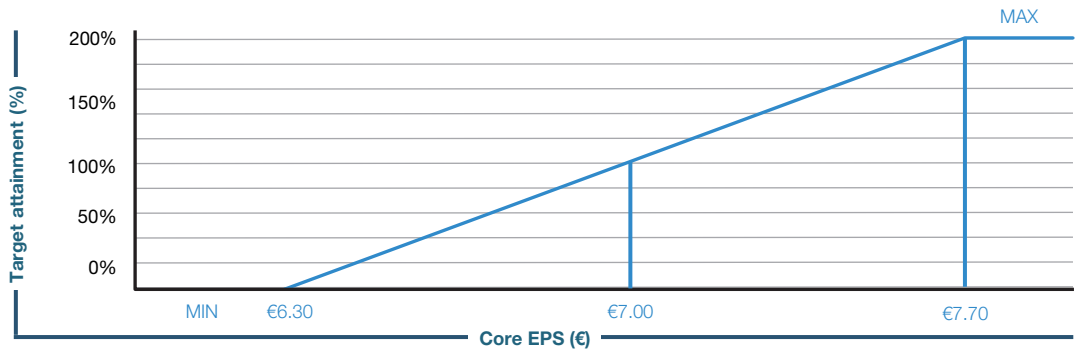
Group component I

Group component I is derived from core earnings per share (core EPS) at Group level, which forms the basis of our dividend policy. Using core EPS for this component therefore provides specific incentives to raise profitability in the Bayer Group while at the same time encouraging value creation for our stockholders.

The graphic below shows the minimum value, target value and maximum value for core EPS in 2022:

C 3.3/2

Target Attainment Function for Core EPS



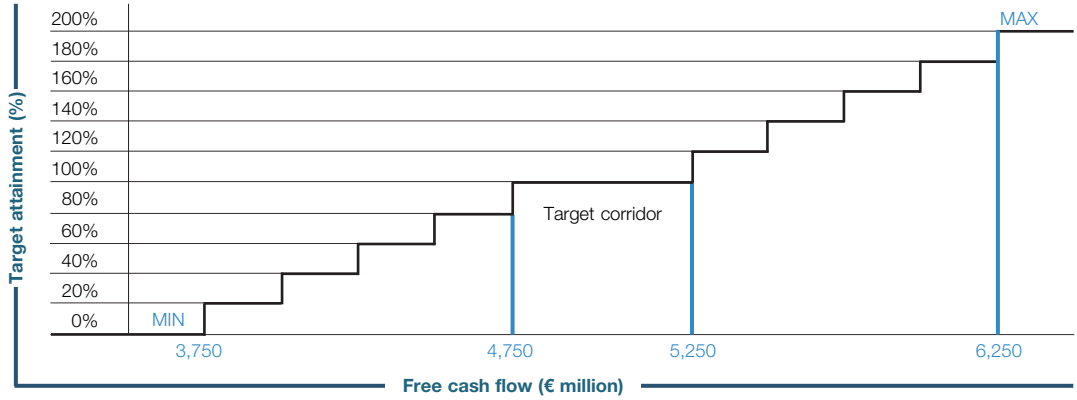
For fiscal 2022, the core EPS target for Group component I was set at €7.00. Actual core EPS came in at €7.94, corresponding to a target attainment level of 200%.

Group component II
Group component II is determined by the incentivized free cash flow at Group level. This component is aimed at incentivizing an increase in the cash flow available for paying dividends, reducing debt and making acquisitions, and ensures the Bayer Group's liquidity.

The graphic below shows the minimum value, target corridor and maximum value for the incentivized free cash flow in 2022:

C 3.3/3

Target Attainment Function for Free Cash Flow



Payments in connection with the ongoing liability litigations surrounding glyphosate, dicamba, PCBs and Essure™ are excluded from consideration for compensation purposes when the KPI for the incentivized free cash flow is defined, since the payments cannot be planned for reliably with respect to their timing and magnitude, and they could therefore completely skew operational performance in target attainment. These payments are therefore irrelevant for setting targets and measuring attainment. For 2022, the target corridor for the incentivized free cash flow was set at €4.75 billion to €5.25 billion.

Free cash flow for 2022 came in at €3,111 million. After adjusting for the payments in the ongoing liability litigations (€1,165 million), incentivized free cash flow amounted to €4,276 million, corresponding to a target attainment level of 60%.

Divisional component
This component is calculated for each division by setting the EBITDA margin before special items against currency- and portfolio-adjusted sales growth in a matrix. Members of the Board of Management with divisional responsibility are assessed solely based on the respective division's performance, while those with functional responsibility are assessed based on the weighted average performance of all divisions. This average performance is determined using the following weightings: 45% Crop Science, 45% Pharmaceuticals and 10% Consumer Health. This matrix serves to specifically incentivize profitable growth in each division. Growth should only be generated while maintaining profitability, and raising profitability in the short term should not be incentivized at the expense of growth. At the end of each year, the EBITDA margin before special items and the currency- and portfolio-adjusted sales growth actually achieved by the individual divisions are compared to the target matrix previously set for that year. Failure to meet one of the two minimum values results in a target attainment level of 0% for the divisional component.

C 3.3/4

STI Payout Matrix for the 2022 Financial Targets of the Divisions

					EBITDA margin before special items					
						Minimum value		Target corridor		Maximum value
					CS	25.0%	…	26.0–26.4%	…	28.4%
					PH	30.5%	…	31.5%	…	33.5%
					CH	21.5%	…	22.5%	…	24.5%
		CS	PH	CH						
	Minimum value	4.1%	0.2%	3.0%		0%	…	50%	…	150%
		…	…	…		…	…	…	…	…
Sales growth (Fx & p adj.)	Target corridor	6.6–8.1%	2.7%	5.5%		50%	…	100%	…	200%
		…	…	…		…	…	…	…	…
	Maximum value	13.1%	7.7%	10.5%		150%	…	200%	…	200%

Fx & p adj. = currency- and portfolio-adjusted; CS = Crop Science; PH = Pharmaceuticals; CH = Consumer Health

The currency- and portfolio-adjusted sales growth and the EBITDA margin before special items achieved by the divisions in 2022 are shown below.

Crop Science
// Sales growth vs. 2021 (Fx & portfolio adj.): Actual figure: +15.3%[2]
// EBITDA margin before special items: Actual figure: 27.3%
// Target attainment amounted to 200.0% (maximum level).

Pharmaceuticals
// Sales growth vs. 2021 (Fx & portfolio adj.): Actual figure +0.6%[2]
// EBITDA margin before special items: Actual figure 30.5%
// Target attainment amounted to 8.8%.

Consumer Health
// Sales growth vs. 2021 (Fx & portfolio adj.): Actual figure +7.4%[2]
// EBITDA margin before special items: Actual figure 22.5%
// Target attainment amounted to 138.3%.

This resulted in a target attainment level of 107.8% for Board of Management members with functional responsibility.

Performance factor
In addition, team targets are agreed to reflect the collective responsibility of the members of the Board of Management as a governance body. These team targets are based on the Group targets set by the Board of Management for 2022 and approved by the Supervisory Board. For 2022, the team targets were in many cases achieved. The table below provides an overview of the subject areas along with their specific targets and corresponding KPIs.

[2] Due to the hyperinflation-related growth in Argentina and Turkey, currency- and portfolio-adjusted sales growth was adjusted by minus 0.4 percentage points for Crop Science, minus 0.5 percentage points for Pharmaceuticals, and minus 1.0 percentage points for Consumer Health when determining target attainment.

C 3.3/5

Team Targets for 2022

Subject area	

Engage – for a successful performance culture	// Increase employee engagement and promote a performance culture
	// Improve engagement for employee health and safety, and ensure social acceptance (license to operate)
	// Promote inclusion and diversity, and implement the I&D plan

Shape – our business and our organizations to seize long-term opportunities	// Strengthen investors' trust and safeguard the company's reputation among key stakeholder groups
	// Pursue our company purpose by leveraging additional groundbreaking innovations and new technologies
	// Keep our sustainability pledge to achieve a lasting impact

Perform – and thus keep our pledge and lay the foundation for success	// Maintain a consistent growth narrative through our transformation agenda
	// Achieve success together with customers, consumers and patients, grow faster than the market and meet our delivery targets
	// Stabilize and simplify IT systems, and improve user experience

In addition, all members of the Board of Management are set individual targets tailored to their respective areas of responsibility. Target attainment is evaluated individually following the end of the fiscal year.

The attainment levels for the team and individual targets are evaluated by the Supervisory Board. The multiplier applied to the attainment of the financial targets can range from 0.8 to 1.2 for each individual Board of Management member. The table below shows the target attainment levels for 2022.

C 3.3/6

Individual Targets and Attainment for 2022

Board of Management member	Subject areas for individual targets	Target attainment – team and individual targets

Werner Baumann	// Implement the five-point plan for glyphosate
	// Advance the strategy and transformation agenda
	// Actively manage sustainable performance and capital market communication
	// Advance the sustainability strategy
		109%

Rodrigo Santos	// Increase business growth and sales
	// Develop the digital business model and central innovation projects
	// Advance a sustainable food system
	// Promote employee engagement and inclusion & diversity
		106%

Sarena Lin	// Fulfill role of a German Labor Director
	// Implement the transformation of the Human Resources function
	// Strengthen the performance culture through the new performance management program
	// Promote inclusion and diversity as well as integrated talent development programs
		100%

Wolfgang Nickl	// Steer operations to attain financial KPIs
	// Optimize refinancing activities
	// Improve business-critical areas in the business units and functions
	// Contribute to effective stockholder engagement and communication
		106%

Stefan Oelrich	// Effectively communicate the innovation and research portfolio
	// Successfully implement the goals of the "True North Now" strategy
	// Integrate new team members and strengthen the performance culture
	// Advance the market launch of new products
		115%

Heiko Schipper	// Successfully implement the "Fit to Win" program
	// Successfully expand the portfolio
	// Further enhance the growth potential
	// Integrate new team members and strengthen the performance culture
		107%

Payment of the short-term variable compensation (STI)
The STI is paid out in the following year at the earliest possible opportunity. For 2022, it is calculated as follows:

C 3.3/7

Short-Term Variable Compensation in 2022 at a Glance

				Target attainment			
	Target amount (€)	Group component I "cEPS"	Group component II "FCF"	Divisional component	Individual performance factor	Total	Payout amount (€)
Werner Baumann	1,597,500	200%	60.0%	107.8%	1.09–0.14	116.5%	1,861,088
Sarena Lin	810,000			107.8%	1.00	122.6%	993,060
Wolfgang Nickl	810,000			107.8%	1.06	130.0%	1,053,000
Stefan Oelrich	837,000			8.8%	1.15	103.0%	862,110
Rodrigo Santos	837,000			200.0%	1.06	162.5%	1,360,125
Heiko Schipper	810,000			138.3%	1.07	142.1%	1,151,010

In consultation with the Chairman of the Board of Management, the Supervisory Board reduced his individual performance factor by 14 percentage points. The Supervisory Board and Chairman of the Board of Management did so to take into account the stockholder feedback received during the governance roadshows held last year.

3.3.3 Long-term stock-based cash compensation (LTI) for 2022

Members of the Board of Management are eligible to participate in the annual tranches of the four-year stock-based compensation program Aspire on the condition that they purchase a certain number of Bayer shares – determined for each individual according to specific rules – as a personal investment within a four-year period and hold them until two years after their term of service ends. In the event of a Board of Management member stepping down before the end of his or her term of office, individual arrangements are usually agreed for the LTI tranches granted in that year and in preceding years.

LTI tranches are only paid out when they fall due at the end of the performance period. Bayer has not granted any early LTI payments, and will not do so moving forward either.

Aspire 2.0 tranches issued each year until 2019
The LTI target values for the Aspire 2.0 tranches issued each year until 2019 are based on a contractually agreed target rate of 150% of base compensation. The starting value is also multiplied by the individual STI payout factor for the Board of Management member concerned for the year prior to the issuance of the respective tranche. The LTI payout after four years corresponds to the LTI target value, adjusted to reflect the development of Bayer's share price and its performance relative to the EURO STOXX 50 along with the dividends paid in the meantime based on the virtually acquired number of shares (total shareholder return approach):

$$\text{LTI payout} = \text{LTI target value} \times \frac{\text{average share price on the last 30 trading days prior to expiration of the tranche}}{\text{average share price on the last 30 trading days prior to issuance of the tranche}} \times \text{performance relative to EURO STOXX 50} + \text{total dividend equivalents}$$

The relative comparison to the EURO STOXX 50 increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50 percentage points either way.

The following table provides an overview of target attainment levels for the 2019 and 2018 Aspire 2.0 tranches (expired in 2022 and 2021, respectively) including the starting and final values for Bayer stock and the EURO STOXX 50, which are the average prices/values on the 30 trading days preceding the respective reference date:

C 3.3/8

Aspire Payout Percentages

	2018 tranche[1]	2019 tranche
Bayer stock starting price	€104.91	€63.08
Bayer stock final price	€46.37	€52.15
Bayer stock performance	**– 55.80%**	**– 17.33%**
EURO STOXX 50 starting value	3,566.8	3,094.3
EURO STOXX 50 final value	4,207.8	3,901.6
EURO STOXX 50 performance	**+ 17.97%**	**+ 26.09%**
Dividend equivalent	**€10.36**	**€9.60**
Payout percentage	**31.97%**	**62.00%**

[1] The starting price for the 2018 tranche was modified by a factor of 0.98409496 due to the capital measure implemented on June 6, 2018.

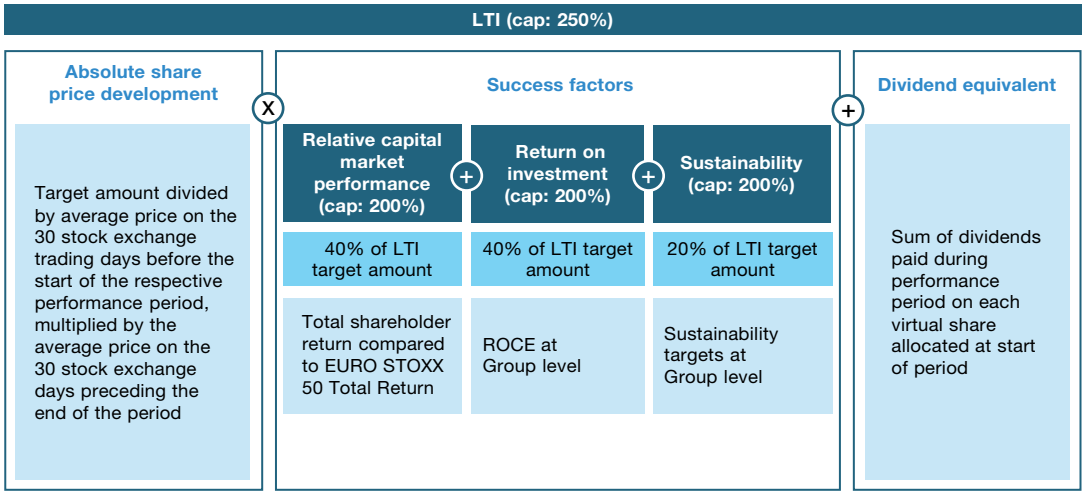
Aspire 3.0 tranches issued each year from 2020

The annual Aspire 3.0 tranches are allocated in the form of virtual shares with a performance period of four years for each tranche. The number of virtual shares conditionally allocated is calculated by multiplying base compensation by the contractually agreed target rate and then dividing by the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the start of the respective performance period.

The payout is calculated by multiplying the number of virtual shares allocated by the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the end of the performance period and by the performance target attainment. In addition, the participants receive a dividend equivalent based on the sum of the dividends paid on each conditionally allocated virtual share during the four-year period. The components of the long-term variable cash compensation (LTI) are shown in the graphic below.

C 3.3/9

Components of Long-Term Variable Cash Compensation (LTI)

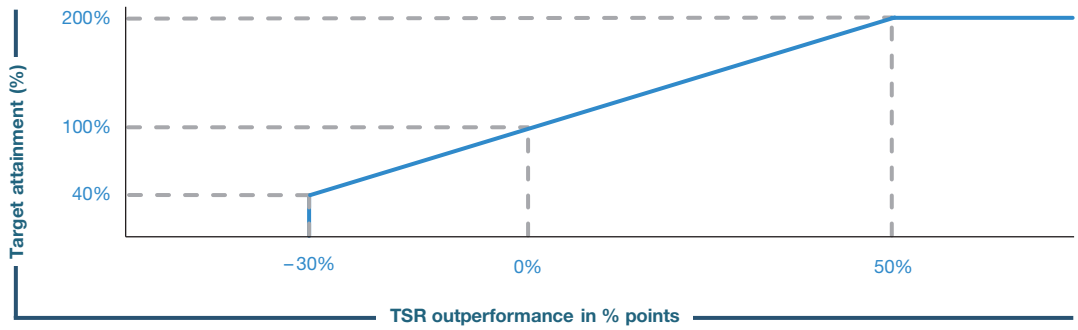


Relative capital market performance

Relative capital market performance is determined by the difference between Bayer's total shareholder return (TSR) and the EURO STOXX 50 Total Return, which serves as the benchmark index. The TSR shows how Bayer shares performed over the four-year performance period, including relative share price development and hypothetically reinvested gross dividends. This takes account of Bayer's capital market performance in relation to the EURO STOXX 50 Total Return. The initial and final values for calculating the TSR are based on the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the start and the end of the respective four-year performance period. The final value also includes the hypothetically reinvested gross dividends during that time. Target attainment is determined from the difference between Bayer's TSR over the period and that of the EURO STOXX 50 Total Return. If the difference is zero – i.e., performance is on a par with that of the index – target attainment is 100%. If the difference is more than –30 percentage points, target attainment is 0%. If the difference equals –30 percentage points, target attainment is 40%. If the difference is +50 percentage points or more, target attainment is 200%. The target attainment curve for the relative TSR target is given in the graphic below.

C 3.3/10

Target Attainment Function for Relative TSR



Return on investment

The return on investment is based on the return on capital employed (ROCE) at Group level. The annual comparison of the ROCE to the weighted average cost of capital indicates the value generated by the company. The ROCE is a metric that is applied as part of Bayer's corporate steering system. At the start of each tranche, the Supervisory Board sets a minimum value, a target corridor, a maximum value and additional benchmarks for ROCE. The minimum value is based on the weighted average cost of capital (WACC) on the date the respective tranche is issued. The target corridor for 100% target attainment is based on the WACC and an ambitious premium. At the end of the four-year performance period, the ROCE achieved in the final year of the performance period is compared to the target corridor set for that tranche of the LTI. If the target corridor has been achieved, target attainment is 100%. If the target attainment is above or below the target corridor, the target attainment corresponds to the target function within an interval of 0% to 200%.

In the event that the Supervisory Board makes an adjustment to ROCE target attainment, an explanation will be provided in the corresponding Compensation Report following the end of the four-year performance period (see Chapter 3.2.3).

Sustainability

Starting with the 2021 tranche, the Supervisory Board defines specific sustainability goals for the four-year performance period that are taken into account with a weighting of 20%. Sustainability goals at both divisional and Group level can be taken into account.

In setting the sustainability goals, the Supervisory Board took care to ensure that these are aligned with the Sustainable Development Goals (SDGs) of the United Nations as a minimum, and are also in step with international best practice, such as the Science Based Targets initiative (SBTi), with respect to how they are determined, measured and reviewed. All the sustainability goals below are given the same weighting. The Supervisory Board also set a minimum value, a target corridor and a maximum value for the individual sustainability goals. If target attainment is above or below the target corridor, the target attainment corresponds to a target function within an interval of 0% to 200%.

C 3.3/11

Nonfinancial Group Targets Through 2030

Target[1]	Target for 2030
Number of smallholder farmers in low- and middle-income countries (LMICs) supported by products, services and partnerships	100 million
Number of women in low- and middle-income countries (LMICs) who have their need for modern contraception satisfied due to interventions supported by Bayer	100 million
Number of people in underserved[2] communities whose self-care is supported by interventions from Bayer	100 million
Scope 1 and 2[3] greenhouse gas emissions	42% decrease[4, 6]
Scope 3 greenhouse gas emissions from relevant[7] categories	12.3% decrease[5, 6]
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions	100%

[1] A more detailed description of the calculation methodologies is published on our website www.bayer.com/en/sustainability.
[2] Economically or medically
[3] Covering Scope 1 and 2 emissions (market-based) of sites that have an energy consumption in excess of 1.5 TJ
[4] Corresponding to the sustainability target of limiting global temperature rise to 1.5°C above pre-industrial level
[5] Corresponding to the sustainability target of limiting global temperature rise below 2°C above pre-industrial level
[6] By the end of 2029
[7] In accordance with the criteria set out by the Science Based Targets initiative, the Scope 3 categories relevant for our goal include emissions in the following categories: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) (upstream) transportation and distribution, and (6) business travel.

The setting of the individual sustainability goals and the attainment thereof will be reported on in the corresponding Compensation Report following the end of the performance period. Where applicable, any adjustments the Supervisory Board makes to sustainability target values will also be explained, along with the reasoning behind those changes (see Chapter 3.2.3).

Ongoing tranches of long-term variable cash compensation (LTI)

The following table provides an overview of the ongoing tranches for the current members of the Board of Management of Bayer AG in 2022:

C 3.3/12

Overview of LTI Tranches for Board of Management Members Serving as of Dec. 31, 2022

Overview of LTI tranches allocated

		Target amount (€ thousand)	Bayer stock starting price (€)	No. of conditionally allocated virtual shares[1]	Target attainment for performance component[2]	Bayer stock final price (€)	Total dividends per virtual share (€)	Payout percentage	Payout amount[3] (€ thousand)
2019 Aspire 2.0 tranche (Jan. 1, 2019 - Dec. 31, 2022)	Werner Baumann	2,804	63.08	44,454	–43%	52.15	9.60	62.00%	1,739
	Wolfgang Nickl	1,319		20,912					818
	Stefan Oelrich	1,226		19,431					760
	Heiko Schipper	1,181		18,721					732
2020 Aspire 3.0 tranche (Jan. 1, 2020 - Dec. 31, 2023)	Werner Baumann	2,502	69.95	35,773	The performance period of the 2020 Aspire 3.0 tranche will end on Dec. 31, 2023				
	Wolfgang Nickl	1,194		17,069					
	Stefan Oelrich	1,274		18,206					
	Heiko Schipper	1,194		17,069					
2021 Aspire 3.0 tranche (Jan. 1, 2021 - Dec. 31, 2024)	Werner Baumann	2,513	47.99	52,352	The performance period of the 2021 Aspire 3.0 tranche will end on Dec. 31, 2024				
	Sarena Lin	1,174		24,460					
	Wolfgang Nickl	1,199		24,980					
	Stefan Oelrich	1,279		26,643					
	Heiko Schipper	1,199		24,980					
2022 Aspire 3.0 tranche (Jan. 1, 2022 - Dec. 31, 2025)	Werner Baumann	2,840	46.37	61,246	The performance period of the 2022 Aspire 3.0 tranche will end on Dec. 31, 2025				
	Sarena Lin	1,440		31,055					
	Wolfgang Nickl	1,440		31,055					
	Stefan Oelrich	1,488		32,090					
	Rodrigo Santos[4]	1,488		32,090					
	Heiko Schipper	1,440		31,055					

[1] The number of conditionally allocated virtual shares is determined by dividing the LTI target amount by the average share price over the preceding 30 stock exchange trading days before the tranche is issued.

[2] Target attainment for Aspire 2.0 is based on Bayer's stock performance relative to the EURO STOXX 50. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50 percentage points either way. Target attainment for Aspire 3.0 is based on weighted target attainment for the three performance criteria "Relative capital market performance", "Return on investment" and (since fiscal 2021) "Sustainability".

[3] Shown here is the amount actually paid out. Due to system-related rounding differences, the parameters shown here may result in a payout amount that deviates from the sum actually paid out.

[4] 2019-2021 LTI tranches granted to Rodrigo Santos prior to his appointment to the Board of Management are not shown. When each performance period comes to an end, the respective tranche will be shown in the "Compensation Awarded and Due" table.

In line with the recommendation of the German Corporate Governance Code, already allocated LTI tranches are paid out according to the originally agreed targets at the end of the contractually specified performance period should a Board of Management member's service contract be terminated. The following table shows the ongoing tranches for the former members of the Board of Management of Bayer AG:

C 3.3/13

Overview of LTI Tranches of Former Board of Management Members

Overview of LTI tranches allocated

		Target amount (€ thousand)	Bayer stock starting price (€)	No. of conditionally allocated virtual shares[1]	Target attainment for performance component[2]	Bayer stock final price (€)	Total dividends per virtual share (€)	Payout percentage	Payout amount[3] (€ thousand)
2019 Aspire 2.0 tranche (Jan. 1, 2019 - Dec. 31, 2022)	Liam Condon	1,841		29,187					1,141
	Dr. Hartmut Klusik	1,240	63.08	19,658	–43%	52.15	9.60	62.00%	769
	Kemal Malik	1,253		19,867					777
2020 Aspire 3.0 tranche (Jan. 1, 2020 - Dec. 31, 2023)	Liam Condon	1,441	69.95	20,597	The performance period of the 2020 Aspire 3.0 tranche will end on Dec. 31, 2023				
	Kemal Malik	1,190		17,008					
2021 Aspire 3.0 tranche (Jan. 1, 2021 - Dec. 31, 2024)	Liam Condon	1,446	47.99	30,141	The performance period of the 2021 Aspire 3.0 tranche will end on Dec. 31, 2024				
	Kemal Malik	1,285		26,775					

[1] The number of conditionally allocated virtual shares is determined by dividing the LTI target amount by the average share price over the preceding 30 stock exchange trading days before the tranche is issued.

[2] Target attainment for Aspire 2.0 is based on Bayer's stock performance relative to the EURO STOXX 50. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50 percentage points either way. Target attainment for Aspire 3.0 is based on weighted target attainment for the three performance criteria "Relative capital market performance", "Return on investment" and (since fiscal 2021) "Sustainability".

[3] Shown here is the amount actually paid out. Due to system-related rounding differences, the parameters shown here may result in a payout amount that deviates from the sum actually paid out.

3.3.4 Fringe benefits

Fringe benefits include costs assumed by the company for health screening and various work-related insurance policies. Each member of the Board of Management has access to a company car, including driver, for business and a reasonable amount of private use, or receives a corresponding budget. In addition, the company pays the cost of security installations at each member's private residence. Work-related moving expenses are either individually reimbursed or compensated in the form of a flat-rate allowance. Any indemnity payments to new members of the Board of Management for variable compensation forfeited on termination of previous employment also constitute fringe benefits.

3.3.5 Pension entitlement/installment

Members of the Board of Management appointed after January 1, 2020, are not entitled to a company pension plan but instead receive an earmarked amount known as a pension installment, which is paid out directly. The pension installment equals 40% of the respective base compensation. For the company, this avoids all the interest-rate and biometric risks involved in financing a pension entitlement. It also eliminates the complex actuarial calculations and administrative procedures involved. The members of the Board of Management are responsible for making their own pension arrangements.

Members of the Board of Management appointed prior to January 1, 2020, retain their contribution-based pension entitlements. Bayer makes company contributions to complement the personal contributions of 2% up to the ceiling for statutory pension contributions in Germany. The company contributions are currently set at 8% to Bayer-Pensionskasse or 2% to Rheinische Pensionskasse on fixed annual compensation up to the ceiling for statutory pension contributions in Germany. In addition, Bayer provides a hypothetical annual contribution equal to 42% of the amount by which the respective base compensation exceeds that ceiling. This percentage is comprised of a basic contribution of 6% and a matching contribution of 36%, which is four times the member's personal contribution of 9%. The total annual contribution is converted into a pension entitlement according to the annuity table for the applicable tariff of the Rheinische Pensionskasse VVaG pension fund. The annual pension entitlement upon retirement is the total amount of the accumulated pension entitlements including any investment bonus, the amount of which is determined annually based on the net return on the assets of the Rheinische Pensionskasse VVaG minus the minimum return on the contributions that is guaranteed under the tariff and approved by the German Financial Supervisory Authority (BaFin). Future pension payments are reviewed annually and adjusted in line with the respective entitlements.

If the contract of a member of the Board of Management is terminated due to permanent incapacity to work before he or she reaches the age of 60, an invalidity pension is granted.

In addition, the following arrangements are in place for members of the Board of Management appointed prior to January 1, 2020:

// Werner Baumann acquired rights to a fixed annual pension of €443,940 starting on his 60th birthday prior to his appointment as Chairman of the Board of Management. As of May 1, 2016, the day he was appointed Chairman of the Board of Management, his pension was switched over to a contribution-based entitlement. In connection with this, he received an additional, vested entitlement to an annual pension of €200 thousand starting on his 60th birthday.
// In view of his split contract, Heiko Schipper participates in pension plans in Germany (30%) – for his service on the Board of Management of Bayer AG – and in Switzerland (70%) – under his contract as head of Consumer Health at BCC AG in Basel – on a prorated basis. Schipper's pension entitlement in Switzerland arises from a defined benefit plan in which contributions accumulate in an account and are then disbursed as a retirement annuity.

Certain assets are administered by Bayer Pension Trust e. V. under a contractual trust arrangement (CTA) to cover pension entitlements resulting from direct commitments in Germany. This provides substantial additional security – beyond the benefits from the Pension Insurance Association – for the respective pension entitlements of the members of the Board of Management and other managerial employees in Germany.

The current service cost for the pension entitlements of the Board of Management members recognized in 2022 according to IFRS was €2,284 thousand (2021: €3,800 thousand). The following table shows the service cost according to IFRS and the settlement or present value of the pension obligations attributable to the individual members of the Board of Management.

C 3.3/14

Pension Entitlements According to IFRS

	Expense[1]		Present value of defined benefit pension obligation as of Dec. 31	
€ thousand	2021	2022	2021	2022
Serving Board of Management members as of Dec. 31, 2022				
Contribution-based pension entitlements				
Werner Baumann (Chairman)	2,088	1,547	26,654	18,554
Wolfgang Nickl	325	276	1,144	799
Stefan Oelrich	344	284	1,042	772
Heiko Schipper	259	177	7,243	5,817

[1] In the case of the contribution-based pension entitlements, the figures shown here pertain to the service cost for pension entitlements according to IFRS.

The service cost according to IFRS is calculated based on contractual obligations and actuarial assumptions. It reflects the amount, calculated actuarially, that was earned by the respective Board of Management member in the respective year through their work and that was recognized through profit or loss. It corresponds to the present value of the newly earned future pension payments, and is impacted by updated actuarial adjustments. The service cost does not reflect a payout amount or payments currently being made to Board of Management members. A lower discount rate at the start of the year, higher anticipated salary and pension increases and a shorter vesting period in years are factors that result in a higher service cost.

The service cost according to IFRS can therefore fluctuate from one year to the next. The existing pension entitlements of a Board of Management member cannot legally be unilaterally adjusted by Bayer.

3.3.6 Caps on variable compensation components and total compensation

If targets are not attained, variable compensation can fall to as low as zero. However, if targets are clearly exceeded, the payout is limited to 200% (STI cap) or 250% (LTI cap) of the individual target amount.

The Supervisory Board has set an absolute amount in euros for the maximum total compensation granted in a fiscal year pursuant to Section 87a, Paragraph 1, Sentence 2, No.1 of the German Stock Corporation Act. The maximum total annual compensation is €12 million for the Chairman of the Board of Management and €7.5 million for the other members of the Board of Management. The maximum total compensation for a fiscal year includes all fixed and variable compensation components:

// Base compensation
// Fringe benefits
// Short-term variable cash compensation (STI)
// Long-term variable cash compensation (LTI)
// Pension installment or service cost according to IFRS for pension entitlement

Compliance with the specified thresholds for the maximum total compensation of Board of Management members cannot be reported on conclusively until all compensation components granted for a given fiscal year have been paid out. This means that for fiscal years 2020 to 2022, this can only be reported on after expiration of the respective LTI four-year performance periods.

The respective actual compensation levels for the 2019 reference year were significantly below the established maximum compensation levels for all Board of Management members.

3.3.7 Malus and clawback provisions for variable compensation

In the event of gross misconduct or misrepresentation in financial reporting, the Supervisory Board has the discretion to withhold the STI and LTI for fiscal years from 2020 onward (malus) or – if these have already been paid out – to require that they be repaid to the company (clawback).

In the event that a member of the Board of Management violates a substantial duty of care, significant obligations under his or her service contract or other important operating principles such as those prescribed by the Code of Conduct for Members of the Board of Management or the Corporate Compliance Policy, the Supervisory Board in the proper exercise of its discretion may reduce or cancel the portion of the variable compensation that has not yet been paid out (malus). The Supervisory Board in the proper exercise of its discretion may also require that all or part of any gross amount that has already been paid out be repaid to the company (clawback).

Moreover, the members of the Board of Management are obligated to repay variable compensation already paid out if it is subsequently established that the audited and approved consolidated financial statements on which the calculation of the payout for fiscal years from 2020 onward was based were defective, with the amount to be repaid reflecting the corrections to be made. This applies even if the defectiveness of the consolidated financial statements is not attributable to any fault on the part of the members of the Board of Management. Irrespective of the above, a legal basis also exists for payment reductions or regress in the event of a damaging breach of duty by members of the Board of Management.

In 2022, the Supervisory Board did not see any cause to reduce any variable compensation that had not yet been paid out (malus) or reclaim variable compensation that had already been paid out (clawback).

3.3.8 Share Ownership Guidelines

The Bayer Share Ownership Guidelines are also an integral factor in the compensation system. They serve to further align the interests of the Board of Management with those of our stockholders and to strengthen sustainable development. Under the Bayer Share Ownership Guidelines, members of the Board of Management are required to build substantial positions in Bayer shares within four years of joining the Board. They must purchase shares to the value of 200% of base compensation in the case of the Chairman and 100% in the case of the other members of the Board of Management, and retain them for the remainder of their service on the Board of Management and for two years thereafter. If they cannot provide evidence of this share ownership, they have no claim to payment of the LTI. The virtual shares allocated as part of the LTI program do not count toward the number of Bayer shares to be purchased under the Share Ownership Guidelines.

An overview of the current Share Ownership Guidelines can be found below:

C 3.3/15

Share Ownership Guidelines – Status

Serving Board of Management members as of Dec. 31, 2022

Board of Management member	Target (% of base compensation)	End of position-building phase	Status
Werner Baumann[1]	200%	March 31, 2021	Fulfilled
Sarena Lin	100%	January 31, 2025	In progress
Wolfgang Nickl	100%	April 25, 2022	Fulfilled
Stefan Oelrich	100%	October 31, 2022	Fulfilled
Rodrigo Santos	100%	December 31, 2025	In progress
Heiko Schipper	100%	February 28, 2022	Fulfilled

[1] The end date for the position-building phase was redefined after the targets within the Share Ownership Guidelines were updated in 2020.

3.3.9 Entitlements upon termination of service on the Board of Management

If the service contract of a member of the Board of Management is terminated before the end of the term of office – other than for cause – at the company's instigation, his or her entitlements under the service contract are fulfilled until the termination date.

Payments of variable compensation are made on the dates and at the conditions originally agreed, and are not brought forward. In doing so, Bayer observes the principles of good corporate governance: LTI allocations already granted are paid out to departing Board of Management members according to the original payment plans and calculated according to the previously agreed rules.

In line with the recommendations of the German Corporate Governance Code, the service contracts of the members of the Board of Management contain the provision that payments upon termination of service shall not exceed twice the annual compensation or the compensation amount for the remaining term of the contract if this is lower.

Change of control

To ensure their independence, members of the Board of Management are also entitled to a severance payment in the event of a change of control as defined in the German Securities Acquisition and Takeover Act, provided certain narrow conditions are met. The claim to a severance payment only arises if the service contract is terminated by mutual agreement at the company's instigation or if the position of the Board of Management member is significantly affected by the change of control and he or she gives notice of termination within 12 months of the date of the change of control. The position of the Board of Management member is significantly affected if, in particular, one of the following conditions is fulfilled:

// Significant changes in the company's strategy
// Significant changes in his or her own area of activity
// Significant changes in the company's legal form

In these cases, members of the Board of Management are entitled to a severance payment of 250% of annual base compensation, though this must not exceed the compensation for the remaining term of the respective contract. Board of Management members appointed in 2010 or earlier are entitled to a severance payment of 200% of annual cash compensation (base compensation, target STI and target LTI), though this must not exceed the compensation for the remaining term of the respective contract. This entitlement does not exist if termination takes place for cause as defined in Section 626 of the German Civil Code.

Post-contractual noncompete agreements

Post-contractual noncompete agreements exist with the members of the Board of Management, providing for indemnity payments to be made by the company for the two-year duration of these agreements. The indemnity payment for each of the two years amounts to 100% of a member's average base compensation for the 12 months preceding his or her departure. In the event a service contract is terminated early, any severance payment for the remaining part of the original term of the contract is deducted from the indemnity payment. Upon contract termination, the company may waive the post-contractual noncompete agreement, in which case no indemnity is paid.

Unfitness for work

In the event of temporary unfitness for work, members of the Board of Management continue to receive the contractually agreed compensation. If a Board of Management member has been continuously unfit for work for at least 18 months and is likely to be permanently incapable of fully performing his or her duties (permanent incapacity to work), the Supervisory Board may terminate his or her service contract early.

3.3.10 Payment for service on governance bodies and third-party compensation

Any compensation a member of the Board of Management receives for service on the supervisory board of a Bayer Group company is deducted from his or her base compensation. Any membership in a supervisory board of a company outside the Bayer Group must be approved in advance by the Supervisory Board. Where a member of the Board of Management serves on the supervisory board of a company outside the Bayer Group, the Supervisory Board of Bayer Aktiengesellschaft decides whether and to what extent a deduction is to be made. No deductions are being made for Board of Management members currently serving on external supervisory boards.

No member of the Board of Management received compensation from a third party in 2022 for serving on their management and/or supervisory boards.

3.4 Individual Board of Management compensation levels in 2022

3.4.1 Target compensation

The following tables show the individual target values, along with the minimum and maximum values, for the compensation components contractually agreed in 2022, including expenses for fringe benefits and pension entitlements, along with the relative shares of the individual compensation components.

C 3.4/1

Target Compensation (Part I)

	Serving Board of Management members as of Dec. 31, 2022									
	Werner Baumann (Chairman)					Sarena Lin[2] (Labor Director)				
	Joined Jan. 1, 2010					Joined Feb. 1, 2021				
	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)
Base compensation	1,775	22.7	1,775	1,775	1,733	900	19.9	900	900	758
Fringe benefits	65	0.8	65	65	99	1,006	22.3	1,006	1,006	1,282
Pension installment	–	–	–	–	–	360	8.0	360	360	303
Short-term variable cash compensation										
STI 2021	–	–	–	–	1,775	–	–	–	–	825
STI 2022	1,598	20.4	0	3,195	–	810	17.9	0	1,620	–
Long-term stock-based cash compensation										
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	–	–	–	–	2,513	–	–	–	–	1,174
Aspire 3.0 2022 (Jan. 1, 2022 – Dec. 31, 2025)	2,840	36.3	0	7,100	–	1,440	31.9	0	3,600	–
Service cost/benefit expense (IFRS)	1,547	19.8	1,547	1,547	2,088	–	–	–	–	–
Total compensation	**7,825**	**100.0**	**3,387**	**13,682**	**8,208**	**4,516**	**100.0**	**2,266**	**7,486**	**4,342**

C 3.4/2

Target Compensation (Part II)

	Serving Board of Management members as of Dec. 31, 2022									
	Wolfgang Nickl (Finance)					Stefan Oelrich[3] (Pharmaceuticals)				
	Joined April 26, 2018					Joined Nov. 1, 2018				
	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)
Base compensation	900	25.3	900	900	824	930	26.0	930	930	872
Fringe benefits	137	3.8	137	137	202	32	0.9	32	32	861
Pension installment	–	–	–	–	–	–	–	–	–	–
Short-term variable cash compensation										
STI 2021	–	–	–	–	900	–	–	–	–	930
STI 2022	810	22.7	0	1,620	–	837	23.4	0	1,674	–
Long-term stock-based cash compensation										
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	–	–	–	–	1,199	–	–	–	–	1,279
Aspire 3.0 2022 (Jan. 1, 2022 – Dec. 31, 2025)	1,440	40.5	0	3,600	–	1,488	41.7	0	3,720	–
Service cost/benefit expense (IFRS)	276	7.7	276	276	325	284	8.0	284	284	344
Total compensation	**3,563**	**100.0**	**1,313**	**6,533**	**3,450**	**3,571**	**100.0**	**1,246**	**6,640**	**4,286**

C 3.4/3

Target Compensation (Part III)

	Serving Board of Management members as of Dec. 31, 2022									
	Rodrigo Santos (Crop Science)					Heiko Schipper[4] (Consumer Health)				
	Joined Jan. 1, 2022					Joined Mar. 1, 2018				
	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	Min. 2022 (€ thousand)	Max.[1] 2022 (€ thousand)	2021 (€ thousand)
Base compensation	930	25.5	930	930	–	900	26.8	900	900	824
Fringe benefits	26	0.7	26	26	–	30	0.9	30	30	443
Pension installment	372	10.2	372	372	–	–	–	–	–	–
Short-term variable cash compensation										
STI 2021	–	–	–	–	–	–	–	–	–	900
STI 2022	837	22.9	0	1,674	–	810	24.1	0	1,620	–
Long-term stock-based cash compensation										
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	–	–	–	–	–	–	–	–	–	1,199
Aspire 3.0 2022 (Jan. 1, 2022 – Dec. 31, 2025)	1,488	40.7	0	3,720	–	1,440	42.9	0	3,600	–
Service cost/benefit expense (IFRS)	–	–	–	–	–	177	5.3	177	177	259
Total compensation	3,653	100.0	1,328	6,722	–	3,357	100.0	1,107	6,327	3,625

[1] The maximum figures shown here do not yet take into account the total caps applicable (see C 3.2/3).
[2] The fringe benefits for Sarena Lin include indemnity payments of €959 thousand for both 2021 and 2022 for variable compensation components granted to her by her former employer that lapsed due to her joining Bayer, and, for 2021, the reimbursement of costs incurred for selling her home in the United States, which was capped.
[3] The fringe benefits for Stefan Oelrich contained an indemnity payment of €808 thousand for 2021 for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.
[4] The fringe benefits for Heiko Schipper contained an indemnity payment of €431 thousand for 2021 for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

3.4.2 Compensation awarded and due

The tables below show all fixed and variable compensation components along with their respective relative shares for each member of the Board of Management. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends, even though actual payment will not be made until the subsequent fiscal year. Due compensation comprises compensation that is legally due but has not yet actually been paid out to the Board of Management member.

The way compensation is allocated can be illustrated using the examples of short-term cash compensation (STI) and long-term stock-based cash compensation (LTI):

// The payout amounts for the 2022 STI and the Aspire 2.0 tranche issued in 2019 are included in the 2022 column for compensation awarded and due, since the respective Board of Management member had fully rendered the services on which the respective compensation is based during the one- and four-year periods. The fact that the payouts will not actually be made until the subsequent year is overlooked in order to present the link between the compensation and performance of the Board of Management in the same period.
// For Board of Management members who step down by mutual consent, Aspire commitments already granted in the past are paid out after four years in accordance with the program conditions. They therefore do not receive an early payout when stepping down (accelerated vesting). Where the duties required to be performed to qualify for the Aspire tranche are performed in full in a given year, the tranche is granted. The tranche is therefore granted for the year in which a Board of Management member steps down if an agreement to this effect has been reached. The fair value of the tranche at the time the Board of Management member steps down is presented under “Other” in the tables below. The amount actually paid out will

deviate from this figure. The fluctuations in value that occur up until payout after the Board of Management member steps down are shown in the tables below, especially the “Development of Compensation and Financial Performance – Comparative Overview” table.

The service cost according to IFRS is additionally shown as a part of Board of Management compensation, even though it does not constitute awarded or due compensation within the meaning of Section 162 of the Stock Corporation Act (AktG).

C 3.4/4

Compensation Awarded and Due (Part I)

	Serving Board of Management members as of Dec. 31, 2022					
	Werner Baumann (Chairman) Joined Jan. 1, 2010			Sarena Lin[1] (Labor Director) Joined Feb. 1, 2021		
	2022 (€ thousand)	2022 (%)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	2021 (€ thousand)
Base compensation	1,775	32.6	1,733	900	27.6	758
Fringe benefits	65	1.2	99	1,006	30.9	1,282
Pension installment	–	–	–	360	11.0	303
Short-term variable cash compensation						
STI 2021	–	–	3,218	–	–	1,366
STI 2022	1,861	34.2	–	993	30.5	–
Long-term stock-based cash compensation						
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	–	–	652	–	–	–
Aspire 2.0 2019 (Jan. 1, 2019 – Dec. 31, 2022)	1,739	32.0	–	–	–	–
Other	–	–	–	–	–	–
Total compensation awarded and due	**5,440**	**100.0**	**5,702**	**3,259**	**100.0**	**3,709**
Service cost/benefit expense (IFRS)	1,547		2,088	–		–
Total compensation	**6,987**		**7,790**	**3,259**		**3,709**

C 3.4/5

Compensation Awarded and Due (Part II)

	Serving Board of Management members as of Dec. 31, 2022					
	Wolfgang Nickl (Finance) Joined April 26, 2018			Stefan Oelrich[2] (Pharmaceuticals) Joined Nov. 1, 2018		
	2022 (€ thousand)	2022 (%)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	2021 (€ thousand)
Base compensation	900	30.9	824	930	36.0	872
Fringe benefits	137	4.7	202	32	1.2	861
Pension installment	–	–	–	–	–	–
Short-term variable cash compensation						
STI 2021	–	–	1,632	–	–	1,600
STI 2022	1,053	36.2	–	862	33.4	–
Long-term stock-based cash compensation						
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	–	–	338	–	–	311
Aspire 2.0 2019 (Jan. 1, 2019 – Dec. 31, 2022)	818	28.2	–	760	29.4	–
Other	–	–	–	–	–	–
Total compensation awarded and due	**2,908**	**100.0**	**2,996**	**2,584**	**100.0**	**3,644**
Service cost/benefit expense (IFRS)	276		325	284	–	344
Total compensation	**3,184**		**3,321**	**2,868**		**3,988**

C 3.4/6

Compensation Awarded and Due (Part III)

	Serving Board of Management members as of Dec. 31, 2022					
			Rodrigo Santos[3] (Crop Science) Joined Jan. 1, 2022			Heiko Schipper[4] (Consumer Health) Joined Mar. 1, 2018
	2022 (€ thousand)	2022 (%)	2021 (€ thousand)	2022 (€ thousand)	2022 (%)	2021 (€ thousand)
Base compensation	930	32.8	–	900	32.0	824
Fringe benefits	26	0.9	–	30	1.1	443
Pension installment	372	13.1	–	–	–	–
Short-term variable cash compensation						
STI 2021	–	–	–	–	–	1,553
STI 2022	1,360	48.0	–	1,151	40.9	–
Long-term stock-based cash compensation						
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	–	–	–	–	–	353
Aspire 2.0 2019 (Jan. 1, 2019 – Dec. 31, 2022)	148	5.2	–	732	26.0	–
Other	–	–	–	–	–	–
Total compensation awarded and due	2,836	100.0	–	2,813	100.0	3,173
Service cost/benefit expense (IFRS)	–		–	177		259
Total compensation	2,836		–	2,990		3,432

[1] The fringe benefits for Sarena Lin include indemnity payments of €959 thousand for both 2021 and 2022 for variable compensation components granted to her by her former employer that lapsed due to her joining Bayer, and, for 2021, the reimbursement of costs incurred for selling her home in the United States, which was capped.

[2] The fringe benefits for Stefan Oelrich contained an indemnity payment of €808 thousand for 2021 for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

[3] The 2019 tranche granted to Rodrigo Santos prior to his appointment to the Board of Management is included in awarded compensation.

[4] The fringe benefits for Heiko Schipper contained an indemnity payment of €431 thousand for 2021 for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

C 3.4/7

Compensation Awarded and Due to Former Board of Management Members (Part I)

	Dr. Hartmut Klusik[2] Stepped down: Dec 31, 2019		Kemal Malik Stepped down: Dec 31, 2019	
	2022 (€ thousand)	2022 (%)	2022 (€ thousand)	2022 (%)
Long-term stock-based cash compensation[1]	(208)	152.9	(223)	100.0
Pension payments	72	–52.9	–	–
Other compensation	–	–	–	–
Total compensation awarded and due	(136)	100.0	(223)	100.0

C 3.4/8

Compensation Awarded and Due to Former Board of Management Members (Part II)

	Johannes Dietsch Stepped down: May 31, 2018		Erica Mann Stepped down: March 31, 2018		Dieter Weinand Stepped down: Oct. 31, 2018	
	2022 (€ thousand)	2022 (%)	2022 (€ thousand)	2022 (%)	2022 (€ thousand)	2022 (%)
Long-term stock-based cash compensation[1]	(98)	–816.7	(131)	100.0	(234)	100.0
Pension payments	110	916.7	–	–	–	–
Other compensation	–	–	–	–	–	–
Total compensation awarded and due	12	100.0	(131)	100.0	(234)	100.0

C 3.4/9

Compensation Awarded and Due to Former Board of Management Members (Part III)

	Dr. Marijn Dekkers Stepped down: April 30, 2016		Prof. Dr. Wolfgang Plischke[2] Stepped down: April 29, 2014		Dr. Richard Pott[2] Stepped down: May 31, 2013	
	2022 (€ thousand)	2022 (%)	2022 (€ thousand)	2022 (%)	2022 (€ thousand)	2022 (%)
Long-term stock-based cash compensation[1]	–	–	–	–	–	–
Pension payments	664	100.0	448	100.0	625	100.0
Other compensation	–	–	–	–	–	–
Total compensation awarded and due	**664**	**100.0**	**448**	**100.0**	**625**	**100.0**

[1] The figure shown here is the difference between the fair value of the long-term stock-based cash compensation that was originally fully awarded to the Board of Management member when he stepped down, and the actual payout amount in the year in which payment is made.
[2] Includes pension payments from Bayer-Pensionskasse VVaG

4. Compensation of the Supervisory Board

The Supervisory Board is compensated based on the relevant provisions of the Articles of Incorporation, which were last amended by the resolution adopted at the Annual Stockholders' Meeting on April 27, 2021.

4.1 Principles applied for Supervisory Board compensation

A company's Supervisory Board is tasked with advising and supervising the Board of Management, which directs the company and its business on its own responsibility. Pursuant to Section 113, Paragraph 1, Sentence 3 of the German Stock Corporation Act (AktG), the compensation of Supervisory Board members should bear a reasonable relation to their tasks and the company's situation. In setting Supervisory Board compensation, consideration should be given to the demands of the office of the Supervisory Board member, the time involved and the responsibility borne by the Supervisory Board members for the company. Appropriate Supervisory Board compensation ensures that a company will remain able to attract outstandingly qualified domestic and international candidates as Supervisory Board members. Supervisory Board compensation thus contributes sustainably to advancing a company's business strategy and to its long-term development.

4.2 Design of Supervisory Board compensation

The members of the Supervisory Board receive fixed annual compensation and additional compensation for chairing and membership of Supervisory Board committees, plus reimbursement of their expenses. In accordance with the recommendations of the German Corporate Governance Code, additional compensation is paid to the Chairman and Vice Chairman of the Supervisory Board and for chairing and membership of committees. In addition, Supervisory Board members receive an attendance fee each time they take part in a meeting of the Supervisory Board or of a committee.

C 4.2/1

Design of Supervisory Board Compensation

Compensation element	From April 28, 2021
Fixed compensation	• Chairman: €480,000 • Vice Chairman: €320,000 • Ordinary member: €160,000
Compensation for committee duties	• Chairman and Vice Chairman of the Supervisory Board do not receive any additional compensation for membership or chairing of committees • Compensation for committee duties is paid for a maximum of three committees (highest-paying functions taken into account)
Audit Committee	• Chairman: €120,000 • Member: €60,000
Presidial Committee	• Chairman: €40,000 • Member: €20,000
Nominations Committee	• Chairman: €40,000 • Member: €20,000
Other committees	• Chairman: €60,000 • Member: €30,000
Attendance fees	• €1,500 (for each meeting attended in person, by phone or virtually)[1]

[1] If multiple meetings are held on one day, only one attendance fee is paid.

The members of the Supervisory Board have given a voluntary pledge that in the first five years of their Supervisory Board membership they will each purchase Bayer shares for 25% of their pretax fixed compensation, including any additional compensation for committee membership, and hold these shares for as long as they remain members.

The tables below show the components of the compensation awarded and due to each Supervisory Board member as well as the relative shares of the respective components in overall compensation. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends.

4.3 Compensation awarded and due

C 4.3/1

Compensation Awarded and Due (Part I)

	Fixed compensation			Compensation for committee duties		
	2022		2021	2022		2021
Serving Supervisory Board members as of Dec. 31, 2022	**€ thousand**	**%**	**€ thousand**	**€ thousand**	**%**	**€ thousand**
Dr. Paul Achleitner	160	66.1	151	59	24.4	75
Dr. Simone Bagel-Trah	160	71.4	151	40	17.9	14
Horst Baier	160	52.1	151	121	39.4	154
Dr. Norbert W. Bischofberger	160	76.2	151	30	14.3	30
André van Broich	160	58.4	151	90	32.8	82
Ertharin Cousin	160	58.4	151	90	32.8	20
Yasmin Fahimi[1]	32	91.4	–	1	2.9	–
Dr. Barbara Gansewendt[2]	108	65.5	–	40	24.2	–
Colleen A. Goggins	160	67.8	151	50	21.2	45
Francesco Grioli[3]	108	81.8	–	13	9.8	–
Heike Hausfeld (Vice Chairwoman)[4]	268	86.5	151	19	6.1	31
Frank Löllgen	160	59.0	151	90	33.2	83
Kimberly Mathisen[5]	53	89.8	–	–	0.0	–
Andrea Sacher	160	68.4	151	50	21.4	–
Claudia Schade[6]	108	90.8	–	–	0.0	–
Heinz Georg Webers[7]	108	76.6	–	21	14.9	–
Alberto Weisser	160	62.5	109	73	28.5	41
Michael Westmeier[8]	108	90.8	–	–	0.0	–
Prof. Dr. Otmar D. Wiestler	160	66.7	151	60	25.0	51
Prof. Dr. Norbert Winkeljohann (Chairman)	480	94.1	453	–	0.0	–
Individuals who ceased to be members of the Supervisory Board in 2021 and 2022						
Dr. Thomas Elsner[9]	52	64.2	151	20	24.7	92
Johanna W. (Hanneke) Faber[10]	–	0.0	42	–	0.0	–
Robert Gundlach[11]	52	75.4	151	9	13.0	30
Reiner Hoffmann[12]	117	79.1	151	13	8.8	–
Dr. Fei-Fei Li[13]	107	100.0	109	–	0.0	–
Prof. Dr. Wolfgang Plischke[14]	–	0.0	42	–	0.0	43
Petra Reinbold-Knape[15]	52	76.5	151	7	10.3	55
Michael Schmidt-Kießling[16]	52	85.2	151	–	0.0	–
Oliver Zühlke[17]	104	90.4	302	–	0.0	–

C 4.3/2

Compensation Awarded and Due (Part II)

	Attendance fees[18]			Total compensation	
	2022		2021	2022	2021
Serving Supervisory Board members as of Dec. 31, 2022	**€ thousand**	**%**	**€ thousand**	**€ thousand**	**€ thousand**
Dr. Paul Achleitner	23	9.5	11	242	237
Dr. Simone Bagel-Trah	24	10.7	9	224	174
Horst Baier	26	8.5	17	307	322
Dr. Norbert W. Bischofberger	20	9.5	11	210	192
André van Broich	24	8.8	14	274	247
Ertharin Cousin	24	8.8	11	274	182
Yasmin Fahimi[1]	2	5.7	–	35	–
Dr. Barbara Gansewendt[2]	17	10.3	–	165	–
Colleen A. Goggins	26	11.0	12	236	208
Francesco Grioli[3]	11	8.3	–	132	–
Heike Hausfeld (Vice Chairwoman)[4]	23	7.4	9	310	191
Frank Löllgen	21	7.7	12	271	246
Kimberly Mathisen[5]	6	10.2	–	59	–
Andrea Sacher	24	10.3	9	234	160
Claudia Schade[6]	11	9.2	–	119	–
Heinz Georg Webers[7]	12	8.5	–	141	–
Alberto Weisser	23	9.0	14	256	164
Michael Westmeier[8]	11	9.2	–	119	–
Prof. Dr. Otmar D. Wiestler	20	8.3	11	240	213
Prof. Dr. Norbert Winkeljohann (Chairman)	30	5.9	20	510	473
Individuals who ceased to be members of the Supervisory Board in 2021 and 2022					
Dr. Thomas Elsner[9]	9	11.1	17	81	260
Johanna W. (Hanneke) Faber[10]	–	0.0	–	–	42
Robert Gundlach[11]	8	11.6	11	69	192
Reiner Hoffmann[12]	18	12.2	9	148	160
Dr. Fei-Fei Li[13]	–	0.0	8	107	117
Prof. Dr. Wolfgang Plischke[14]	–	0.0	–	–	85
Petra Reinbold-Knape[15]	9	13.2	14	68	220
Michael Schmidt-Kießling[16]	9	14.8	9	61	160
Oliver Zühlke[17]	11	9.6	17	115	319

[1] Member of the Supervisory Board since October 21, 2022
[2] Member of the Supervisory Board since April 29, 2022
[3] Member of the Supervisory Board since April 29, 2022
[4] Vice Chairwoman of the Supervisory Board since April 29, 2022
[5] Member of the Supervisory Board since September 1, 2022
[6] Member of the Supervisory Board since April 29, 2022
[7] Member of the Supervisory Board since April 29, 2022
[8] Member of the Supervisory Board since April 29, 2022
[9] Member of the Supervisory Board until April 29, 2022
[10] Member of the Supervisory Board until April 27, 2021
[11] Member of the Supervisory Board until April 29, 2022
[12] Member of the Supervisory Board until September 25, 2022
[13] Member of the Supervisory Board between April 27, 2021, and August 31, 2022
[14] Member of the Supervisory Board until April 27, 2021
[15] Member of the Supervisory Board until April 29, 2022
[16] Member of the Supervisory Board until April 29, 2022
[17] Member of the Supervisory Board until April 29, 2022
[18] The individual figures in the table are rounded. Total unrounded attendance fees amount to €435 thousand.

No compensation was paid or benefits granted to members of the Supervisory Board for personally performed services such as consultancy or agency services. The company has purchased insurance for the members of the Supervisory Board to cover their personal liability arising from their service on the Supervisory Board.

5. Development of Financial Performance and Annual Change in Compensation – Comparative Overview

The table below provides an overview of the development of the compensation awarded and due to current and former members of the Board of Management and Supervisory Board, the development of the average compensation of the employees, and the development of selected financial performance indicators of the Bayer Group and Bayer AG over the past five years.

The former Board of Management members included in the table are those who stepped down in the last 10 years. The former Supervisory Board members shown in the table are those to whom compensation was awarded or due in 2022.

The compensation shown below for the employees, nonmanagerial employees and overall workforce in Germany includes the employees of Bayer AG, Leverkusen, Bayer Intellectual Property GmbH, Monheim am Rhein, and Pallas Versicherung Aktiengesellschaft, Leverkusen. From 2018, the figures do not include Animal Health employees. The employees of Bayer Business Services (BBS) GmbH, Leverkusen are accounted for within Bayer AG, Leverkusen, from January 1, 2020.

C 5/1

Development of Compensation and Financial Performance – Comparative Overview

€ thousand	2018	Δ (%)	2019	Δ (%)	2020	Δ (%)	2021	Δ (%)	2022
Serving Board of Management members as of Dec. 31, 2022									
Werner Baumann (Chairman)[1]	3,250	+13.4	3,687	+7.9	3,978	+43.3	5,702	−4.6	5,440
Sarena Lin	–	–	–	–	–	–	3,709	−12.1	3,259
Wolfgang Nickl	1,135	+51.0	1,714	−23.3	1,315	+127.8	2,996	−2.9	2,908
Stefan Oelrich	277	+866.1	2,676	−20.4	2,129	+71.2	3,644	−29.1	2,584
Rodrigo Santos	–	–	–	–	–	–	–	–	2,836
Heiko Schipper	1,816	+22.7	2,228	−3.9	2,141	+48.2	3,173	−11.3	2,813
Former members									
Liam Condon[1, 2]	1,921	+31.3	2,523	−16.6	2,104	+292.1	8,249	–	–
Dr. Marijn Dekkers[1]	220	−35.9	141	−626.2	(742)	−187.6	650	+2.2	664
Johannes Dietsch[1, 2]	3,937	−108.6	(338)	−56.5	(147)	+134.7	(345)	−103.5	12
Dr. Hartmut Klusik[1, 2]	1,612	+220.0	5,158	−98.6	72	−505.6	(292)	−53.4	(136)
Michael König[1]	(334)	−0.9	(331)	−29.9	(232)	–	–	–	–
Kemal Malik[1, 2]	1,633	+632.2	11,957	–	–	–	(363)	−38.6	(223)
Erica Mann[1, 2]	7,600	–	–	–	(49)	+475.5	(282)	−53.5	(131)
Prof. Dr. Wolfgang Plischke[1]	332	+29.8	431	+1.2	436	+0.7	439	+2.1	448
Dr. Richard Pott	586	+2.6	601	+1.0	607	+0.8	612	+2.1	625
Dieter Weinand[1, 2]	3,815	–	–	–	(52)	+765.4	(450)	−48.0	(234)
Serving Supervisory Board members as of Dec. 31, 2022									
Dr. Paul Achleitner	204	–	204	−2.5	199	+19.1	237	+2.1	242
Dr. Simone Bagel-Trah	137	–	137	−2.9	133	+30.8	174	+28.7	224
Horst Baier	–	–	–	–	201	+60.2	322	−4.7	307
Dr. Norbert W. Bischofberger	170	+0.6	171	−2.9	166	+15.7	192	+9.4	210
André van Broich	205	–	205	−2.4	200	+23.5	247	+10.9	274
Ertharin Cousin	–	–	34	+291.2	133	+36.8	182	+50.5	274
Yasmin Fahimi	–	–	–	–	–	–	–	–	35
Dr. Barbara Gansewendt	–	–	–	–	–	–	–	–	165
Colleen A. Goggins	136	+13.2	154	+7.1	165	+26.1	208	+13.5	236
Francesco Grioli	–	–	–	–	–	–	–	–	132
Heike Hausfeld (Vice Chairwoman)	172	–	172	−2.9	167	+14.4	191	+62.3	310

C 5/1 (continued)

Development of Compensation and Financial Performance – Comparative Overview

€ thousand	2018	Δ (%)	2019	Δ (%)	2020	Δ (%)	2021	Δ (%)	2022
Frank Löllgen	208	–	208	–3.8	200	+23.0	246	+10.2	271
Kimberly Mathisen	–	–	–	–	–	–	–	–	59
Andrea Sacher	–	–	–	–	41	+290.2	160	+46.3	234
Claudia Schade	–	–	–	–	–	–	–	–	119
Heinz Georg Webers	–	–	–	–	–	–	–	–	141
Alberto Weisser	–	–	–	–	–	–	164	+56.1	256
Michael Westmeier	–	–	–	–	–	–	–	–	119
Prof. Dr. Otmar D. Wiestler	170	+0.6	171	–2.9	166	+28.3	213	+12.7	240
Prof. Dr. Norbert Winkeljohann (Chairman)	165	+75.8	290	+26.6	367	+28.9	473	+7.8	510
Former Supervisory Board members[3]									
Dr. Thomas Elsner (until April 29, 2022)	208	+8.2	225	+3.6	233	+11.6	260	–68.8	81
Robert Gundlach (until April 29, 2022)	–	–	5	+2,600.0	135	+42.2	192	–64.1	69
Reiner Hoffmann (until Sept. 25, 2022)	136	–0.7	135	–1.5	133	+20.3	160	–7.5	148
Dr. Fei-Fei Li (until Aug. 31, 2022)	–	–	–	–	–	–	117	–8.5	107
Petra Reinbold-Knape (until April 29, 2022)	204	+0.5	205	–2.9	199	+10.6	220	–69.1	68
Michael Schmidt-Kießling (until April 29, 2022)	138	–0.7	137	–2.9	133	+20.3	160	–61.9	61
Oliver Zühlke (Vice Chairman until April 29, 2022)	273	–1.1	270	–1.5	266	+19.9	319	–63.9	115
Employees									
Average compensation for employees[4]	101	+6.9	108	–1.9	106	–1.9	104	+17.3	122
Financial performance									
EBITDA before special items (€ million) (Bayer Group)[5]	9,547	+20.5	11,503	–0.4	11,461	–2.5	11,179	+20.9	13,513
Core earnings per share (in €)[6]	5.94	+7.7	6.40	–0.2	6.39	+1.9	6.51	+22.0	7.94
Net income/loss (Bayer AG)	2,117	+115.3	4,557	–155.9	(2,547)	–261.4	4,110	+15.9	4,764

[1] There is always a difference between the compensation awarded in previous years (due to a Board of Management member having fully performed their work duties up until their departure) and the actual payout effected years later under an LTI program. If the actual payout is lower than the awarded compensation shown for the previous years, it results in a negative amount being presented. If the payout is higher than the awarded compensation originally shown, it results in a positive amount being presented. Since the payout is only ever effected in the year after the four-year performance period ends, the above difference is not shown as awarded until the year of the payout in the case of departed Board of Management members. For serving Board of Management members, however, this takes place in the fourth year of the performance period. As such, pursuant to Section 162 of the Stock Corporation Act, no awarded compensation is usually shown for former Board of Management members in the year after they step down.

[2] During their last year of service on the Board of Management, members may potentially be awarded various severance and indemnity payments under a termination agreement. The severance payments comprise, for example, base compensation, STI and LTI and pension entitlements granted to them under their original Board of Management contract until its termination.

[3] Supervisory Board members who stepped down in 2022

[4] The average compensation of managerial and nonmanagerial employees (based on full-time equivalents) comprises base compensation (for nonmanagerial employees under collective bargaining agreements: annual salary plus any shift bonuses and allowances depending on the position; for other employee groups: annual functional income), the annual bonus paid out in the fiscal year (short-term incentive (STI) payout based on actual target attainment in prior year), and the four-year stock-based compensation paid out in the fiscal year (where the respective employee groups are eligible to participate). For nonmanagerial employees, the 13th monthly salary and the contractually agreed vacation bonus were taken into account. Fringe benefits taken into account comprised employer contributions to social insurance and, for eligible employee groups, the budget provided for a company car. Expenditures for fringe benefits (such as home security equipment, indemnity payments for lapsed variable compensation components granted by former employers) were not taken into account due to their irregular nature.

[5] 2018-2021 as originally reported, forming basis for compensation

[6] Core earnings per share from continuing operations, 2018-2021 as originally reported, forming basis for compensation

The following voluntary overview shows the development of the target direct compensation of the Board of Management in relation to both the compensation of all employees in Germany and that of nonmanagerial employees under collective bargaining agreements in Germany. The aim of this approach is to enhance comparability in the development of compensation. It is calculated based on contractually agreed target compensation levels with respect to base compensation, short-term variable cash compensation and the four-year long-term stock-based cash compensation (where the respective employee groups are eligible to participate). For nonmanagerial employees in Germany, the 13th monthly salary and the contractually agreed vacation bonus were taken into account. Variable compensation components for both the Board of Management and the other employee groups were based on the assumption of 100% target attainment. Expenditures for

fringe benefits (such as home security equipment, indemnity payments for lapsed variable compensation components granted by former employers) were not taken into account due to their irregular nature. Expenditures for pensions were also disregarded in view of the interest sensitivity of the expenses. Changes in the target direct compensation shown for each year may be largely due to restructuring measures, M&A activities and changes to the Board of Management composition.

C 5/2

Development of Average Target Direct Compensation[1] of the Board of Management and Employees

€	2018	Change (%)	2019	Change (%)	2020	Change (%)	2021	Change (%)	2022
Board of Management	3,123,600	+5.9	3,307,600	+7.3	3,548,790	+4.7	3,715,425	–0.5	3,695,417
All employees[2] in Germany	93,678	+4.0	97,445	+0.6	98,014	+1.4	99,390	+4.7	104,101
Nonmanagerial employees in Germany	62,351	+4.4	65,123	–0.6	64,763	+1.3	65,623	+2.3	67,162

[1] Base compensation, STI and LTI (not taking into account individual STI payout factor), excluding pensions and fringe benefits; calculated on the basis of full-time equivalents (FTEs). The relative changes in average target direct compensation can be influenced by a range of factors and can vary both over time and across the Board of Management, the overall workforce and nonmanagerial employees. These factors include changes in the composition of the workforce, various salary adjustments within and outside of collective bargaining agreements, the integration and carving out of business entities, or measures relating to HR policy. In connection with the implementation of Section 162 of the German Stock Corporation Act (AktG), compensation data was redetermined to achieve consistency between the existing vertical analysis and the comparative overview shown in table C 5/1.

[2] Excluding the Board of Management

In 2022, the ratio between the average compensation of a Board of Management member and that of all employees in Germany stood at 35:1 (2021: 37:1), while the ratio between the average compensation of a Board of Management member and that of nonmanagerial employees in Germany was 55:1 (2021: 57:1). For the Chairman of the Board of Management, the ratios were 60:1 (2021: 63:1) in relation to all employees in Germany and 93:1 (2021: 95:1) in relation to nonmanagerial employees in Germany.

Report of the Independent Auditor on the Audit of the Compensation Report

To Bayer Aktiengesellschaft, Leverkusen/Germany

We have audited the accompanying compensation report of Bayer Aktiengesellschaft, Leverkusen/Germany, ("the Company") for the financial year from January 1 to December 31, 2022, including the related disclosures, which has been prepared to comply with Section 162 German Stock Corporation Act (AktG). We have not audited such content of the foreword by the chairman of the supervisory board that goes beyond the scope of Section 162 AktG nor the section "Overview of Compensation in 2022".

Responsibilities of the Executive Directors and of the Supervisory Board

The executive directors and the supervisory board of Bayer Aktiengesellschaft, Leverkusen/Germany, are responsible for the preparation of the compensation report, including the related disclosures, that complies with the requirements of Section 162 AktG. The executive directors and the supervisory board are also responsible for such internal control as they consider necessary to enable the preparation of a compensation report, including the related disclosures, that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities

Our responsibility is to express an opinion on this compensation report, including the related disclosures, based on our audit. We conducted our audit in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW). These Standards require that we fulfill the professional responsibilities and that we plan and perform the audit so that we obtain reasonable assurance as to whether the compensation report, including the related disclosures, is free from material misstatements.

An audit involves performing audit procedures in order to obtain audit evidence for the amounts stated in the compensation report, including the related disclosures. The choice of the audit procedures is subject to the auditor's professional judgment. This includes assessing the risk of material misstatements, whether due to fraud or error, in the compensation report. In assessing these risks, the auditor considers the system of internal control, which is relevant to preparing the compensation report, including the related disclosures. Our objective is to plan and perform audit procedures that are appropriate in the circumstances, but not to express an audit opinion on the effectiveness of the Company's system of internal control. An audit also comprises an evaluation of the accounting policies used, of the reasonableness of accounting estimates made by the executive directors and the supervisory board as well as an evaluation of the overall presentation of the compensation report, including the related disclosures.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Audit Opinion

In our opinion, on the basis of the knowledge obtained in the audit, the compensation report for the financial year from January 1 to December 31, 2022, including the related disclosures, complies, in all material respects, with the accounting principles of Section 162 AktG. Our audit opinion on the compensation report does not cover the content of the above-mentioned foreword by the chairman of the supervisory board that goes beyond the scope of Section 162 AktG nor the section "Overview of Compensation in 2022".

Other Matter – Formal Audit of the Compensation Report

The content audit of the compensation report described in this report comprises the formal audit required under Section 162 (3) AktG including the issuance of a report on this audit. Since our audit opinion on the content audit is unmodified, this audit opinion includes that the disclosures required under Section 162 (1) and (2) AktG are contained, in all material respects, in the compensation report.

Other Information

The supervisory board is responsible for the other information. The other information comprises the foreword by the chairman of the supervisory board on the compensation report and the section “Overview of Compensation in 2022”.

Our audit opinion on the compensation report does not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information identified above and, in doing so, to consider whether the other information

- is materially inconsistent with the compensation report or our knowledge obtained in the audit of the compensation report, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Intended Use of the Report

We issue this report as stipulated in the engagement letter agreed with the Company. The audit has been performed for the purposes of the Company and the report is solely intended to inform the Company about the result of the audit.

Liability

This report is not intended to be used by third parties as a basis for any (asset) decision. We are liable solely to Bayer Aktiengesellschaft, Leverkusen/Germany, and our liability is also governed by the engagement letter dated December 9/15, 2022 agreed with the Company as well as the “General Engagement Terms for Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften (German Public Auditors and Public Audit Firms)” promulgated by the Institut der Wirtschaftsprüfer (IDW) in the version dated January 1, 2017 (IDW-AAB). However, we do not accept or assume liability to third parties.

Munich/Germany, February 20, 2023

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed:
Andreas Wermelt
Wirtschaftsprüfer
(German Public Auditor)

Signed:
Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

D Further Information

Governance Bodies

Supervisory Board

Members of the Supervisory Board held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as of December 31, 2022, or the date on which they ceased to be members of the Supervisory Board of Bayer AG) and as shown attended the meetings of the Supervisory Board and committees to which he or she belonged.

Prof. Dr. Norbert Winkeljohann*
Osnabrück, Germany
(born November 5, 1957)

Chairman of the Supervisory Board effective April 2020

Member of the Supervisory Board effective May 2018

Independent management consultant

Memberships on other supervisory boards:

- Bohnenkamp AG (Chairman)
- Deutsche Bank AG (Vice Chairman effective July 2022)
- Georgsmarienhütte Holding GmbH
- Sievert SE (Chairman)

Attendance at Supervisory Board and committee meetings: 28 of 28

Oliver Zühlke
Solingen, Germany
(born December 11, 1968)

Vice Chairman of the Supervisory Board until April 2022

Member of the Supervisory Board until April 2022

Chairman of the Bayer Central Works Council (until April 2022)

Attendance at Supervisory Board and committee meetings: 9 of 9

Heike Hausfeld
Leverkusen, Germany
(born September 19, 1965)

Vice Chairwoman of the Supervisory Board effective April 2022

Member of the Supervisory Board effective April 2017

Chairwoman of the Bayer Central Works Council (effective April 2022)

Chairwoman of the Works Council of the Leverkusen site (until May 2022)

Attendance at Supervisory Board and committee meetings: 17 of 21

Dr. Paul Achleitner
Munich, Germany
(born September 28, 1956)

Member of the Supervisory Board effective April 2002

Chairman of the Supervisory Board of Deutsche Bank AG (until May 2022)

Investor (effective June 2022)

Memberships on other supervisory boards:

- Deutsche Bank AG (Chairman) (until May 2022)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 16 of 17

Dr. rer. nat. Simone Bagel-Trah
Düsseldorf, Germany
(born January 10, 1969)

Member of the Supervisory Board effective April 2014

Chairwoman of the Supervisory Board of Henkel AG & Co. KGaA and Henkel Management AG and of the Shareholders' Committee of Henkel AG & Co. KGaA

Memberships on other supervisory boards:

- Henkel AG & Co. KGaA (Chairwoman)
- Henkel Management AG (Chairwoman)
- Heraeus Holding GmbH

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee, Chairwoman)

Attendance at Supervisory Board and committee meetings: 18 of 18

Horst Baier**
Hanover, Germany
(born October 20, 1956)

Member of the Supervisory Board effective April 2020

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- DIAKOVERE gGmbH
- Ecclesia Holding GmbH
- Whitbread PLC (Board of Directors)

Attendance at Supervisory Board and committee meetings: 18 of 18

Dr. Norbert W. Bischofberger
Hillsborough, USA
(born January 10, 1956)

Member of the Supervisory Board effective April 2017

President and Chief Executive Officer of Kronos Bio, Inc.

Memberships in comparable supervising bodies of German or foreign corporations:

- Morphic Holding, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 14 of 15

André van Broich
Dormagen, Germany
(born June 19, 1970)

Member of the Supervisory Board effective April 2012

Chairman of the Bayer Group Works Council

Chairman of the Works Council of the Dormagen site

Attendance at Supervisory Board and committee meetings: 19 of 21

Ertharin Cousin
Chicago, USA
(born May 12, 1957)

Member of the Supervisory Board effective October 2019

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- Camelot North America (Board of Directors)
- Mondelez International, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 17 of 17

Dr. Thomas Elsner
Düsseldorf, Germany
(born April 24, 1958)

Member of the Supervisory Board until April 2022

Chairman of the Bayer Group Executives' Committee (until April 2022)

Chairman of the Executives' Committee of Bayer AG Leverkusen (until April 2022)

Attendance at Supervisory Board and committee meetings: 7 of 7

Yasmin Fahimi
Hanover, Germany
(born December 25, 1967)

Member of the Supervisory Board effective October 2022

Chairwoman of the German Trade Union Confederation

Attendance at Supervisory Board and committee meetings: 1 of 1

Dr. Barbara Gansewendt
Essen, Germany
(born September 29, 1963)

Member of the Supervisory Board effective April 2022

Chairwoman of the Bayer Group Executives' Committee (effective April 2022)

Chairwoman of the Executives' Committee of Bayer AG Wuppertal

Attendance at Supervisory Board and committee meetings: 11 of 11

Colleen A. Goggins
Princeton, USA
(born September 9, 1954)

Member of the Supervisory Board effective April 2017

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- The Toronto-Dominion Bank (Board of Directors)
- IQVIA Holdings, Inc. (Board of Directors)
- SIG Combibloc Group AG (Board of Directors)

Attendance at Supervisory Board and committee meetings: 17 of 17

Francesco Grioli
Ronnenberg, Germany
(born April 22, 1972)

Member of the Supervisory Board effective April 2022

Member of the Executive Main Board of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Continental AG
- Gerresheimer AG (Vice Chairman)

Attendance at Supervisory Board and committee meetings: 7 of 7

Robert Gundlach
Velten, Germany
(born November 23, 1957)

Member of the Supervisory Board until April 2022

Vice Chairman of the Works Council of the Berlin site

Attendance at Supervisory Board and committee meetings: 6 of 7

Reiner Hoffmann
Wuppertal, Germany
(born May 30, 1955)

Member of the Supervisory Board until September 2022

Chairman of the German Trade Union Confederation (until May 2022)

Member of the European Economic and Social Committee of the European Union

Attendance at Supervisory Board and committee meetings: 12 of 13

Dr. Fei-Fei Li
Palo Alto, USA
(born July 3, 1976)

Member of the Supervisory Board until August 2022

Professor in the Computer Science Department at Stanford University and Co-Director of Stanford's Human-Centered Artificial Intelligence Institute

Memberships in comparable supervising bodies of German or foreign corporations:

- Nimble Robotics, Inc. (Board of Directors)
- Twitter, Inc. (Board of Directors)

Attendance at Supervisory Board meetings: 0 of 9

Frank Löllgen
Cologne, Germany
(born June 14, 1961)

Member of the Supervisory Board effective November 2015

North Rhine District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Evonik Industries AG (until May 2022)
- Covestro AG (effective April 2022)
- Covestro Deutschland AG (effective April 2022)

Attendance at Supervisory Board and committee meetings: 16 of 20

Kimberly Mathisen
Oslo, Norway
(born May 24, 1972)

Member of the Supervisory Board effective September 2022

Chief Executive Officer of HUB Ocean

Memberships in comparable supervising bodies of German or foreign corporations:

- Aker BioMarine ASA (Board of Directors)
- Aize AS (Board of Directors)

Attendance at Supervisory Board meetings: 4 of 4

Petra Reinbold-Knape
Gladbeck, Germany
(born April 16, 1959)

Member of the Supervisory Board until April 2022

Trade Union Secretary at the German Mining, Chemical and Energy Industrial Union, board division 1, overall management

Memberships on other supervisory boards:

- Covestro AG
- Covestro Deutschland AG

Attendance at Supervisory Board and committee meetings: 6 of 6

Andrea Sacher
Berlin, Germany
(born May 8, 1981)

Member of the Supervisory Board effective September 2020

Chairwoman of the Works Council of the Berlin site

Vice Chairwoman of the Bayer Central Works Council

Attendance at Supervisory Board and committee meetings: 18 of 18

Claudia Schade
Leverkusen, Germany
(born December 20, 1978)

Member of the Supervisory Board effective April 2022

Vice Chairwoman of the Works Council of the Leverkusen site (until May 2022)

Chairwoman of the Works Council of the Leverkusen site (effective May 2022)

Attendance at Supervisory Board meetings: 7 of 7

Michael Schmidt-Kießling
Schwelm, Germany
(born March 24, 1959)

Member of the Supervisory Board until April 2022

Chairman of the Works Council of the Elberfeld site

Attendance at Supervisory Board meetings: 6 of 6

Heinz Georg Webers
Bergkamen, Germany
(born December 27, 1959)

Member of the Supervisory Board effective April 2022

Chairman of the Works Council of the Bergkamen site

Attendance at Supervisory Board and committee meetings: 8 of 8

Alberto Weisser
Igrejinha, Portugal
(born June 26, 1955)

Member of the Supervisory Board effective April 2021

Senior Consultant at Temasek International Pte. Ltd.

Memberships in comparable supervising bodies of German or foreign corporations:

- Linde plc (Board of Directors)
- PepsiCo, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 16 of 19

Michael Westmeier
Leverkusen, Germany
(born August 3, 1972)

Member of the Supervisory Board effective April 2022

Chairman of the Works Council of Bayer Vital GmbH

Vice Chairman of the Bayer Group Works Council

Memberships on other supervisory boards:

- Bayer Vital GmbH

Attendance at Supervisory Board meetings: 7 of 7

Prof. Dr. med. Dr. h. c. mult. Otmar D. Wiestler
Berlin, Germany
(born November 6, 1956)

Member of the Supervisory Board effective October 2014

President of the Hermann von Helmholtz Association of German Research Centers e. V.

Attendance at Supervisory Board and committee meetings: 14 of 15

* Expert member in the field of auditing pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

** Expert member in the field of accounting pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

Standing committees of the Supervisory Board of Bayer AG (as of December 31, 2022)

Presidial Committee / Mediation Committee
Winkeljohann* (Chairman), Achleitner, Grioli, Hausfeld

Audit Committee
Baier** (Chairman), Gansewendt, Hausfeld, Löllgen, Weisser, Winkeljohann*

Human Resources and Compensation Committee
Winkeljohann* (Chairman), Bagel-Trah, Baier**, van Broich, Hausfeld, Sacher

Nomination Committee
Winkeljohann* (Chairman), Bagel-Trah, Goggins, Weisser

Innovation Committee
Wiestler (Chairman), Bischofberger, van Broich, Cousin, Hausfeld, Löllgen, Sacher, Winkeljohann*

ESG Committee
Cousin (Chairwoman), Achleitner, van Broich, Fahimi, Goggins, Hausfeld, Webers, Winkeljohann*

Board of Management

Members of the Board of Management held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as of February 17, 2023):

Werner Baumann
(born October 6, 1962)

Member of the Board of Management effective January 1, 2010, appointed until May 31, 2023

Chairman

Sarena Lin
(born January 9, 1971)

Member of the Board of Management effective February 1, 2021, appointed until January 31, 2024

Transformation and Talent

Labor Director

- Siemens Healthineers AG (effective February 2023)

Wolfgang Nickl
(born May 9, 1969)

Member of the Board of Management effective April 26, 2018, appointed until April 25, 2025

Finance

Stefan Oelrich
(born June 1, 1968)

Member of the Board of Management effective November 1, 2018, appointed until October 31, 2025

Pharmaceuticals

- InforMed Data Systems, Inc. (Board of Directors)

Rodrigo Santos
(born May 28, 1973)

Member of the Board of Management effective January 1, 2022, appointed until December 31, 2024

Crop Science

Heiko Schipper
(born August 21, 1969)

Member of the Board of Management effective March 1, 2018, appointed until February 28, 2025

Consumer Health

- Royal FrieslandCampina N.V.

Financial Calendar

Annual Stockholders' Meeting 2023	*April 28, 2023*
Planned dividend payment day	*May 4, 2023*
Q1 2023 Quarterly Statement	*May 11, 2023*
2023 Half-Year Report	*August 8, 2023*
Q3 2023 Quarterly Statement	*November 8, 2023*
2023 Annual Report	*March 5, 2024*
Annual Stockholders' Meeting 2024	*April 26, 2024*
Q1 2024 Quarterly Statement	*May 14, 2024*

Masthead

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Forward-Looking Statements
This Annual Report may contain forward-looking statements based on current assumptions and forecasts made by Bayer management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

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