Science For A Better Life

» COVER PICTURE

Annual Report 2013

Augmented Version

ABOUT THE INTEGRATED REPORT

This year's Annual Report combines our financial and our sustainability reporting for the first time. On page 28-29 you can find further information about this report and learn how to use it.

For direct access to a chapter, simply click on its name.

Bayer is a global enterprise with core competencies in the fields of health care, agriculture and high-tech polymer materials.

As an innovation company, we set trends in research-intensive areas. Our products and services are designed to benefit people and improve their quality of life. At the same time we aim to create value through innovation, growth and high earning power.

We are committed to the principles of sustainable development and to our social and ethical responsibilities as a corporate citizen.

Cover picture

Bayer and tumor centers worldwide are searching for new treatment options for cancer patients. Our cover picture shows Professor Mark Schrader, Medical Director of the Department of Urology at Ulm University Hospital, and assistant physician Kathi Adamczyk examining a CT scan for diagnosing bone metastases in a patient with prostate cancer.

Read more about what Bayer's researchers and the doctors at Ulm University Hospital are doing to improve the lives of people with cancer in the magazine section of this Annual Report beginning on page 10.

Key Data

[Table 1.1]

	2012	2013	Change
	€ million	€ million	%
Bayer Group			
Sales	39,741	40,157	+1.0
EBIT [1]	3,928	4,934	+25.6
EBIT before special items [2]	5,639	5,773	+2.4
EBITDA [3]	6,916	7,830	+13.2
EBITDA before special items [2]	8,280	8,401	+1.5
EBITDA margin before special items [4]	20.8%	20.9%	
Income before income taxes	3,176	4,207	+32.5
Net income	2,403	3,189	+32.7
Earnings per share (€) [5]	2.91	3.86	+32.6
Core earnings per share (€) [6]	5.30	5.61	+5.8
Gross cash flow [7]	4,556	5,832	+28.0
Net cash flow [8]	4,530	5,171	+14.2
Net financial debt	7,022	6,731	−4.1
Capital expenditures as per segment table	2,012	2,155	+7.1
Research and development expenses	3,013	3,190	+5.9
Dividend per Bayer AG share (€)	1.90	2.10	+10.5
HealthCare			
Sales	18,604	18,924	+1.7
EBIT	2,205	3,260	+47.8
EBIT before special items [2]	3,787	3,973	+4.9
EBITDA [3]	3,866	4,858	+25.7
EBITDA before special items [2]	5,119	5,334	+4.2
EBITDA margin before special items [4]	27.5%	28.2%	
Gross cash flow [7]	2,659	3,573	+34.4
Net cash flow [8]	3,546	2,980	−16.0
CropScience			
Sales	8,383	8,819	+5.2
EBIT	1,556	1,729	+11.1
EBIT before special items [2]	1,543	1,801	+16.7
EBITDA [3]	2,050	2,184	+6.5
EBITDA before special items [2]	2,025	2,248	+11.0
EBITDA margin before special items [4]	24.2%	25.5%	
Gross cash flow [7]	1,332	1,590	+19.4
Net cash flow [8]	899	682	−24.1
MaterialScience			
Sales	11,491	11,238	−2.2
EBIT	581	435	−25.1
EBIT before special items [2]	613	429	−30.0
EBITDA [3]	1,236	1,101	−10.9
EBITDA before special items [2]	1,263	1,072	−15.1
EBITDA margin before special items [4]	11.0%	9.5%	
Gross cash flow [7]	952	887	−6.8
Net cash flow [8]	735	977	+32.9

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[Table 1.1 (continued)]

	2012	2013	Change
			%
Employees			
Percentage of women in senior management	23	25	
Number of nationalities in the Group Leadership Circle	23	31	+34.8
Proportion of employees with health insurance (%)	94	95	
Proportion of employees covered by collective agreements on pay and conditions (%)	53	55	
Safety			
Recordable Incident Rate for Bayer employees (RIR)	0.49	0.47	−4.1
Lost Time Recordable Incident Rate for Bayer employees (LTRIR)	0.27	0.26	−3.7
Loss of Primary Containment Incident Rate (LoPC-IR) [9]	0.38	0.35	−7.9
Number of transport incidents	6	11	+83.3
Environmental Protection [10]			
Direct greenhouse gas emissions (CO_2 equivalents in million t) [11]	4.24	4.09	−3.6
Indirect greenhouse gas emissions (CO_2 equivalents in million t) [11]	4.12	4.29	+4.1
Volatile organic compounds (VOC) (thousand t/a) [12]	2.60	2.27	−12.9
Ozone-depleting substances (t/a) [13]	16.28	15.65	−3.9
Total organic carbon (TOC) (thousand t/a)	1.42	1.53	+7.7
Total phosphorus in wastewater (thousand t/a)	0.15	0.11	−24.8
Total nitrogen in wastewater (thousand t/a)	0.70	0.69	−2.1
Hazardous waste generated (thousand t/a)	603	467	−22.6
Hazardous waste landfilled (thousand t/a)	175	53	−69.5
Water use (million m^3/a)	384	361	−6.0
Primary energy consumption (petajoules [10^{15} joules]/a)	49.05	47.58	−3.0
Secondary energy consumption (petajoules [10^{15} joules]/a)	34.14	33.27	−2.6
Energy efficiency (MWh/t) [14]	3.50	3.44	−1.6

2012 figures restated

[1] EBIT = earnings before financial result and taxes

[2] EBIT before special items and EBITDA before special items are not defined in the International Financial Reporting Standards and should therefore be regarded only as supplementary information. EBITDA before special items is a meaningful indicator of operating performance since it is not affected by depreciation, amortization, impairments or special items. By reporting this indicator, the company aims to give readers a clear picture of the results of operations and ensure comparability of data over time. See also Combined Management Report, Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."

[3] EBITDA = EBIT plus amortization and impairment losses on intangible assets and depreciation and impairment losses on property, plant and equipment, minus impairment loss reversals. See also Combined Management Report, Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."

[4] The EBIT(DA) margin before special items is calculated by dividing EBIT(DA) before special items by sales.

[5] Earnings per share as defined in IAS 33 = net income divided by the average number of shares. For details see Note [16] to the consolidated financial statements.

[6] Core earnings per share are not defined in the International Financial Reporting Standards. By reporting this indicator, the company aims to give readers a clear picture of the results of operations and ensure comparability of data over time. The calculation of core earnings per share is explained in the Combined Management Report, Chapter 16.3 "Core Earnings Per Share."

[7] Gross cash flow = income after income taxes, plus income taxes, plus financial result, minus income taxes paid or accrued, plus depreciation, amortization and impairment losses, minus impairment loss reversals, plus/minus changes in pension provisions, minus gains/plus losses on retirements of noncurrent assets, minus gains from the remeasurement of already held assets in step acquisitions. The change in pension provisions includes the elimination of non-cash components of EBIT. It also contains benefit payments during the year. For details see Combined Management Report, Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

[8] Net cash flow = cash flow from operating activities according to IAS 7

[9] LoPC-IR: rate of incidents in which chemicals leak from their primary container, such as pipelines, pumps, tanks or drums, per 200,000 working hours in areas relevant to plant safety

[10] The changes indicated in percent were not calculated on the basis of rounded values.

[11] Portfolio-adjusted in accordance with the Greenhouse Gas Protocol

[12] Volatile organic compounds (VOC) excluding methane

[13] Ozone-depleting substances (ODS) in CFC-11 equivalents

[14] Energy efficiency: quotient of total energy consumption and manufactured sales volume. For MaterialScience, only manufactured sales volumes that also form the basis for calculating MaterialScience-specific emissions are taken into account.

Continuous growth in our Anniversary Year

Dear stockholders and friends of the company:

2013 was a special year for Bayer. The 150th anniversary of our company's founding prompted us to celebrate the benefits of Bayer innovations. These have helped millions of people around the world, including patients, customers, consumers, employees and shareholders. We not only celebrated Bayer's long-term successes with our stakeholders in 2013 but also added more innovative products to our portfolio and posted record financial results. And we are committed to continue with this approach. Our mission "Bayer: Science For A Better Life" remains our driving force.

Bayer's products help to overcome urgent societal needs. In 1863 the global population was 2.5 billion and life expectancy around 40 years; now there are over 7 billion people, and there are expected to be over 9 billion by 2050. Life expectancy has nearly doubled in many regions. This tremendous achievement by humankind is partly the result of improvements in healthcare and nutrition over the last 150 years.

Dr. Marijn Dekkers, Chairman of the Board of Management of Bayer AG

However, the growing and aging population now faces completely new challenges. Health care needs are increasing steadily, particularly due to age-related and new diseases, while at the same time health care has to remain affordable.

The amount of arable land is limited, which is why we need a considerable improvement in crop yields by 2050 to provide enough food for over 9 billion people. And we need to raise resource and energy efficiency to ensure the long-term availability of raw materials and energy sources. Bayer currently spends over €3 billion on R&D each year and we will continue to do our part in developing new products that truly address these urgent societal needs. In other words, we remain dedicated to our mission "Bayer: Science For A Better Life." But we depend on a societal and political environment that appreciates the contributions of science and supports innovation.

2013 was once again a record year for Bayer. Revenues increased to over €40 billion, which is more than 5 percent after adjusting for currency and portfolio effects. Reported EBIT improved by more than 25 percent to over €4.9 billion, while net income rose almost 33 percent to nearly €3.2 billion. Clean EBITDA increased by 1.5 percent to €8.4 billion and core earnings per share rose 5.8 percent to €5.61.

The continuing success of our business in 2013 was driven by the dynamic development in the Life Sciences. HealthCare achieved encouraging growth, largely due to strong sales of our recently launched pharma products. And in CropScience, too, sales continued to grow strongly, especially those of its Crop Protection products. We generated some 70 percent of total revenues and 90 percent of clean EBITDA in our Life Science businesses. However, the performance of MaterialScience created headwind for our company. In addition, significant negative currency effects held back clean EBITDA by almost €260 million compared to the previous year.

Our strong focus on not just developing new products but also successfully commercializing them is clearly paying off. As a result we have improved our competitive position in the Life Sciences. For instance, HealthCare made strong progress with five newer products. These include our anticoagulant Xarelto™ for stroke and

thrombosis prophylaxis as well as Eylea™ to treat age-related macular degeneration and macular edema. Authorizations were granted to Stivarga™ for the treatment of adult patients with advanced metastatic colorectal cancer, Xofigo™ for bone metastases in prostate cancer and Adempas™ for patients with pulmonary hypertension. Total sales for these five products reached €1.5 billion in 2013. We increased our estimate of their combined peak annual sales potential to at least €7.5 billion. In addition we are focusing on the accelerated development of five entirely new drug candidates in cardiology, oncology and gynecology. The common feature of these new drug candidates is that they are also new molecules with highly promising activity profiles. They are intended to improve and broaden treatment options for patients in a wide range of indications.

CropScience also had a successful year. Sales advanced substantially, helped by positive market conditions. This was largely due to successful business with our new Crop Protection products. Total sales of these new products rose to more than €1.5 billion in 2013. They include the fungicides Luna™ and Xpro™. We also have new biological products such as the insecticide Votivo™ and the fungicide Serenade™. We anticipate a combined peak annual sales potential of at least €4 billion for CropScience products with estimated launch dates between 2011 and 2016.

MaterialScience faced considerable challenges in 2013, in what remained a difficult market environment. Both volumes and prices were roughly unchanged compared with the prior year. However, clean EBITDA fell by about 15 percent. This was largely due to raw material cost increases that we were unable to share with our customers. In spite of this disappointing result in 2013, we are cautiously optimistic for the future. The expected increase in capacity utilization in our industry in the coming years should lead to an improving business climate.

Bayer's positive overall performance last year was supported by the commitment and expertise of our employees in the service companies and administrative functions.

In 2013 we continued to successfully pursue our strategy of augmenting organic growth in the Life Sciences with small and medium-sized bolt-on acquisitions. Such acquisitions improve our regional positioning, round out our product portfolio or give us access to major new technologies.

In HealthCare we broadened the product offering of our women's healthcare franchise by acquiring the U.S. company Conceptus: its Essure™ procedure is the only approved non-surgical permanent birth control method. And we acquired Steigerwald Arzneimittelwerk GmbH, which specializes in herbal medicines and represents a product line extension in our Consumer Care business. We also plan to further strengthen our oncology portfolio with the acquisition of Norwegian pharmaceutical company Algeta ASA, which would give us full control over Xofigo™. We are convinced of the potential of this drug and the underlying technology to provide prostate cancer patients with innovative treatment options.

Our CropScience portfolio was enhanced with the acquisition of companies such as Prophyta GmbH, a leading supplier of microbial crop protection products. This is an important step, after the acquisition of AgraQuest in 2012, towards building a leading biologics technology platform. We also acquired various seed companies in Latin America to strengthen our local capabilities there, including Wehrtec Tecnologia Agricola Ltda and Agricola Wehrmann Ltda in Brazil as well as FN Semillas SA in Argentina.

We enter 2014 with continued optimism. We intend to drive further growth from our new products in the Life Sciences, and we also aim to improve profitability at MaterialScience. To enable our innovations to flourish, we plan to invest over €18 billion in capital

expenditures and research and development in the period from 2014 through 2016. Bayer is very well positioned: we have identified our future growth opportunities and the challenges we face, and we have mapped out our strategy for continued success. It is also important to us that economic growth be achieved in harmony with environmental and social responsibility. We adhere to the fundamentals of sustainable development and the ten principles of the Global Compact of the United Nations.

All of our achievements and our future success depend greatly on our highly talented and motivated workforce and the work environment we provide. I strongly believe that in this industry in particular, a robust framework of corporate values is crucial for sustainable success. Leadership, Integrity, Flexibility and Efficiency – represented by the word LIFE – are our corporate values and the cornerstones of our behavior and focus. These values are now firmly integrated into our global performance management system. In addition, continuous learning is a fundamental part of our organizational and talent development. Building specific skills, removing organizational obstacles and making improvements every day are important elements of Bayer's culture. For instance, all of our top 500 leaders took part in a two-day "Leading Innovation" course in 2013.

Last year's anniversary events provided a special opportunity for us to focus on our employees. After all, without their dedication, motivation and ingenuity, Bayer would not be the great company it is today. On behalf of the entire Bayer Group management team, I would like to thank them for their excellent work and their commitment to Bayer.

I would also like to thank you, our shareholders, for your ongoing support as we continue to pursue our mission and dedicate ourselves to innovation.

Sincerely,

Dr. Marijn Dekkers
Chairman of the Board of Management of Bayer AG

Bayer Annual Report 2013

Fighting cancer

Nicole Trackl, a nurse in the Department of Urology at Ulm University Hospital, prepares chemotherapy for 65-year-old Reinhold Härle.

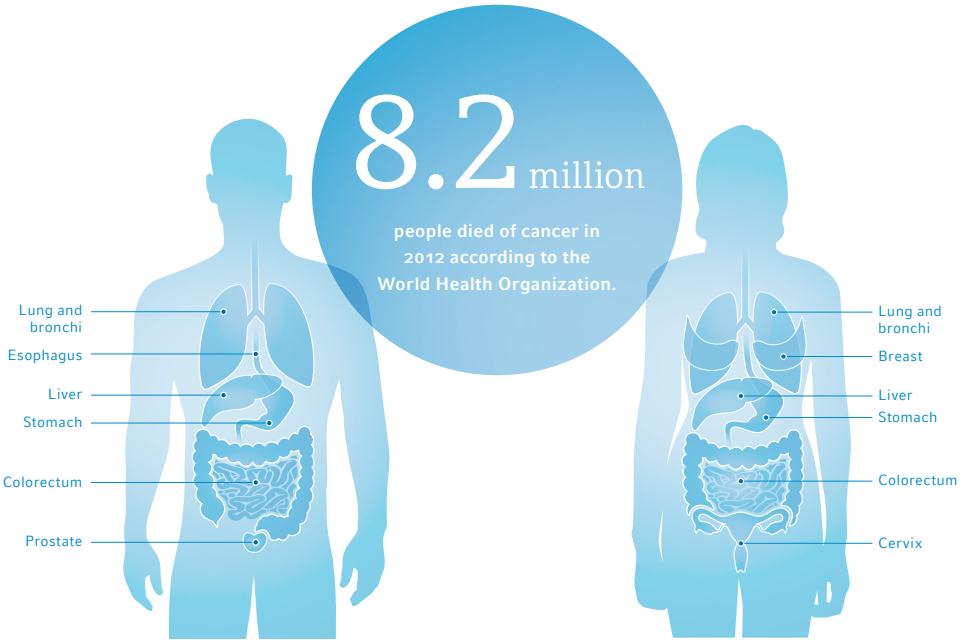
Bayer HealthCare // A diagnosis of cancer can be an enormous burden for patients and their families. How far has the tumor spread? What is the best treatment option? Research-based pharmaceutical companies like Bayer and tumor centers all over the world are working on ways to further improve patient care and identify new treatment options.

With its six tumor centers, Ulm University Hospital is among Germany's leaders in cancer therapy. An interdisciplinary team of acknowledged specialists aims to ensure that each of the 11,000 or so cancer patients the hospital treats every year benefits from the latest medical advances. Reinhold Härle is one of these patients. He has known since 2008 that he has prostate cancer. "It all happened very fast," says the 65-year-old, referring to the initial phase of his illness. His general practitioner couldn't find anything specific during Härle's yearly screening examination. The worrying findings turned up five months later. "The urologist had warned me that it could be cancer, yet the final diagnosis still hit me hard," he recalls.

It didn't take long for him and his wife Zita Lampharth to decide that he would use all the therapies available to get the cancer under control. Then, during surgery, it was found that the tumor had already spread beyond its initial site. So Härle didn't hesitate to undergo drug therapy. He and his wife agreed: "We want our life to be as normal as possible for as long as possible."

Many men with prostate cancer do in fact achieve this, according to Professor Mark Schrader, head of the prostate carcinoma center and Medical Director of the Department of Urology at Ulm University Hospital. "Surgery can cure many patients if the cancer is diagnosed at an early stage," Schrader explains. "But even if curative treatment is no longer possible, we have some effective therapeutic options that often enable patients to live much longer while preserving their quality of life," he adds. "Our options have recently been widened by the arrival of several innovative drugs that can slow the progression of the disease even in the later stages."

In Härle's case, too, the doctors repeatedly succeeded in halting the spread of the cancer. After surgery he underwent local radiotherapy and at the same time took medication to modify his male hormones. This procedure, known as hormone deprivation therapy, suppresses cancer growth. Härle's initial blood tests indicated a response to treatment and it appeared that switching to different drugs was successful. However, subsequent tests indicated possible progression.



FREQUENT AND FATAL TUMORS //

The types of cancer that most often prove fatal are those of the lung, stomach, liver, colorectum and breast. The incidence of these cancers varies between men and women.

(Source: American Cancer Society, Global Cancer Facts & Figures, GLOBOCAN 2012)

Reinhold Härle has known since 2008 that he has prostate cancer. He is a patient of Professor Mark Schrader (see cover) in the Department of Urology at Ulm University Hospital.

"Our therapeutic options have recently been widened by the arrival of several innovative drugs."

Professor Mark Schrader, head of the prostate carcinoma center and
Medical Director of the Department of Urology at Ulm University Hospital

In many patients the various hormone-suppressing drugs are able to counter the spread of cancer cells in the body for a long time.

However, when the cancer stops responding to hormone deprivation therapy, there is a very high risk of bone metastases developing. The cancer cells associated with prostate cancer tend to settle in the bones. The majority of patients with late-stage prostate cancer have bone metastases. Doctors refer to this condition as metastatic castration-resistant prostate cancer. The metastases can damage and weaken the bone, producing pain and increasing the risk of fractures and other complications that can seriously impact the patient's quality of life.

Until a few years ago, doctors' options for helping patients at this stage of their disease were limited to a few treatments designed mainly to relieve the symptoms. Effective chemotherapeutic agents capable of delaying disease progression have been available for about ten years. More recently, innovative medicines have appeared, among them radionuclides with a novel mechanism of action that target tumor cells in the bone while largely sparing the surrounding tissue.

"This generally relieves pain considerably," says prostate specialist Schrader. "What's more, a major randomized drug trial in patients with castration-resistant prostate cancer and bone metastases has shown that this therapy can

100%

was the average 5-year survival rate for prostate cancer in the period 1996 through 2002. (Source: EFPIA)

Above // Werner Diesch is chairman of the prostate cancer self-help group in Ulm. He was diagnosed with prostate cancer nine years ago.

Right // Prostate cancer can often be cured through surgery if it is diagnosed early. Prof. Mark Schrader of Ulm University Hospital operates using minimally invasive techniques where possible.

also prolong our patients' lives. From my point of view these are the most innovative of the new medicines," he adds. "The fact that the new substances have different mechanisms of action also gives doctors more combination options so that treatment can be better tailored to the needs of each patient."

Yet there is still a great need for further research, particularly into ways of extending survival. "This is where the research-based pharmaceutical industry is playing a significant role," Schrader explains. For many patients the opportunity to take part in a clinical trial can be a blessing in itself. "They receive optimal medical care," the doctor explains.

FOR A BETTER QUALITY OF LIFE

Bayer HealthCare is one of the trial partners working with doctors at Ulm University Hospital. "Our common goal is to develop effective therapies so that cancer patients survive for longer and enjoy a better quality of life. Although major progress has been made in cancer therapy in recent years, there is still a great need for innovative drugs," explains

Dr. Jörg Möller, Head of Global Development at Bayer HealthCare. The figures bear this out: according to the World Health Organization's International Agency for Research on Cancer, 8.2 million people died of cancer worldwide in 2012 alone, making malignant tumors one of the leading causes of death. Möller stresses that effective treatment options for many types of cancer are limited, particularly in the advanced stages of the disease.

Bayer HealthCare's research pipeline includes multiple therapeutic approaches for numerous types of cancer, such as prostate, breast, colorectal and lung cancer. The focus is on the development of chemical and biological molecules that specifically intervene in processes typically associated with cancer cells. The aim is to attack the "Achilles heel" of the cancer without harming healthy cells. This approach makes such drugs potentially more effective than traditional chemotherapies and at the same time less of a burden for patients. One group of molecules capable of providing targeted cancer therapy is the kinase inhibitors, some of which are used to treat metastatic colorectal cancer, for example.

IMMUNOTHERAPY FOR CANCER

Immunotherapies are another example of the many innovative approaches being pursued by Bayer's researchers. These involve proteins known as bispecific antibodies that dock onto cancer cells, enabling the body's immune system to identify them. It is believed that "killer cells" in the immune system also will bind to the antibody and destroy the cancer cell. The company is currently studying one of these innovative bispecific antibodies for the treatment of prostate cancer.

Dr. Thomas Schnöller, a specialist in drug therapy of tumors and a urologist at Ulm University Hospital, believes this and other approaches in immunotherapy represent the future of cancer treatment. He also expects to see progress with biomarker-guided therapies that enable treatment to be better tailored to the patient. "Ideally, in the future we will be able to use biomarker tests before we treat patients to predict their response to a particular therapy. In this way we can select the most suitable treatment option for each patient," he explains.

Nicole Trackl, a nurse in the Department of Urology in Ulm, would love to see her patients benefit from this approach. She looks after many people with cancer – including those who regularly attend the unit to receive out-patient chemotherapy. She inserts cannulas, changes infusion bottles, adjusts the flow rate of infusion pumps, documents every action, and observes her patients. Each receives individual treatment, usually consisting of several different medicines. "Chemotherapy has side effects for nearly everyone," she says. "It would be great if the therapy had less of an impact on their lives."

Werner Diesch, 67, chairman of the prostate cancer self-help group in Ulm, echoes her words. He was diagnosed with prostate cancer nine years ago. His mission is now to encourage people to share their experiences and to provide information and support to others affected by prostate cancer. The group's monthly meetings at the Weststadthaus community center in Ulm are regularly attended by around 80 men and their family members. He speaks for them all when he says, "We welcome progress of any kind and hope to see new drugs that are free of major side effects."

Dr. Olivier Brandicourt,
Chairman of the Executive Committee of
Bayer HealthCare, on the subgroup's strategy

"The value of innovation"

Developing innovative medicines and enabling better treatment options is our main task as a health care company. The ability to launch a series of new products, as we have recently done in our Pharmaceuticals Division, is the result of our long-standing commitment to innovation and our dedication to deliver tangible value to patients around the world.

The health care industry is often publicly urged to deliver more "breakthrough" innovation as opposed to merely "incremental" innovation. The true value of innovation, however, should be always seen in context. When looking at the very specific example of cancer, while a new medicine may not be able to cure the disease, it may still make a profound difference to the quality of life for patients and their families and impact positively on health systems as a whole. This is especially true in the field of oncology, where step-by-step improvements in treatment options can add up to substantial progress in addressing medical need. The same applies to other areas: the gradual "chronification" of severe or even life-threatening diseases, such as HIV or multiple sclerosis, is first and foremost the result of our industry's continuous efforts in research and development.

Bayer HealthCare is in a strong position today. In the future, we will continue to focus on improving people's lives by delivering true value through innovation – not only in Pharmaceuticals, but also in our Consumer Health segment.

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Safeguarding nutrition

Farmer Santos Tun Coc with members of his family during the snap pea harvest in Guatemala, with Lake Atitlan in the background. The 42-year-old has joined Bayer CropScience's food chain partnership.

Bayer CropScience // Innovative concepts from Bayer CropScience are helping to promote sustainable agriculture. Food chain partnerships are an important example. In this way Bayer supports all the partners from seed to shelf: farmers and food processors, importers and exporters, and wholesalers and retailers.

"The project is an enormous help to us," says Santos Tun Coc, a farmer who lives in the small village of Caserio San Francisco on the Guatemalan plateau. The 42-year-old is one of 2,000 farmers who have joined the local food chain partnership project of Bayer CropScience. In the past, pest infestation and disease infection regularly led to crop losses of around 25 percent. Thanks to the new crop protection products and especially to the training Bayer provides, he is now able to sell almost his entire harvest. That in turn means the farmer earns enough to send his six children to school – something he could only have dreamed of when he was a child. For neither Tun Coc nor any of his 11 siblings ever attended school.

"Our food chain teams operate worldwide with the aim of ensuring abundant harvests and reliable food supplies."

Liam Condon,
CEO of Bayer CropScience

Working closely with customers to ensure a better harvest is part of Bayer's corporate strategy. "Safeguarding global nutrition demands a holistic approach. We must all work together on sustainable ways to produce enough food to feed the steadily growing world population," says Bayer CropScience CEO Liam Condon. He explains that CropScience has already established "food chain partnerships" throughout the world in which farmers are offered seed, crop protection products and training. "Our food chain teams operate worldwide with the aim of ensuring abundant harvests and reliable food supplies."

Bayer launched its food chain partnership in Guatemala in 2008 together with the vegetable exporter SIESA. Farmer Tun Coc has been involved since the beginning. SIESA's aim in joining the partnership was not only to meet the new quality requirements of international import markets in the Americas and Europe, but also to raise standards for sustainability, user safety and environmental protection for its 2,000 suppliers – all of whom are small farmers like Tun Coc. Bayer CropScience has since offered nearly 100 training workshops in the villages. The farmers learn first-hand in their own language, Kaqchikel, what they have to do to keep their export certification and stay in business. This means good prospects for the future, because SIESA Production Head Edgar García is thrilled about the quality of the harvest: "Tun Coc and his colleagues produce the best snap peas in the world. That's what our customers tell us. We can depend on them because their harvests are good. And the steady incomes the farmers enjoy greatly improve their quality of life."

Many mud huts have now been replaced by stone houses. At the same time, the training programs have raised awareness for hygiene, leading to a decline in gastrointestinal disorders. And thanks to heightened environmental awareness, empty product containers are no longer simply thrown away, but collected and recycled. Last but not least, the success of this program has given the farmers a new self-esteem. "It makes us proud to think that somewhere in the world, people are buying vegetables from the same harvest as the food we are eating ourselves," says Tun Coc. The food chain team in Guatemala is dedicated to improving the quality of life for farmers. "That way we're aiding our country's development, too," says Juan Carlos Gonzalez from Bayer CropScience.

PROGRAM EXTENDED TO OTHER CROPS

Bayer CropScience food chain teams like those in Guatemala work with farmers in more than 30 countries around the world, providing them with a customized solution pack-

THE IMPORTANCE OF SMALL FARMS // Farms averaging five acres in size account for half of all agricultural production worldwide. Only 30 percent of production comes from large-scale enterprises.

(Source: World Bank)

The food chain partnership project in Guatemala was jointly initiated by Bayer CropScience and vegetable exporter SIESA. The picture shows SIESA worker Rolando Machan in the field.

Above // Devendra Singh Tomar (right) from basmati exporter LT Foods and farmer Anand Bhandari (center) check the quality of freshly cut rice that has been drying in the field for three days near the village of Bari in the Indian state of Madhya Pradesh.

Left // Yogesh Mishra (left), food chain manager for Bayer CropScience in India, and Vinit Wadhawan from LT Foods inspect new packages of Daawat brand rice.

age. The concept was devised eight years ago in response to the needs of the food industry. "At that time the industry was called upon to address the need for greater food security, with consumers increasingly placing importance on products being sustainably produced and traceable all the way back to the producer," says Silke Friebe, Head of Global Food Chain Management at Bayer CropScience. There are now some 240 food chain partnership projects. Initially the focus was on fruit and vegetables, and this successful model was recently expanded to include field crops such as rice – the staple food for half the world's population. With demand for this crop outstripping supply, the government of the Indian state of Madhya Pradesh decided several years ago to promote the growing of basmati rice. "The challenge then was to deliver a quality level that would satisfy the requirements of European and North American regulators," explains Surinder Kumar Arora, Co-Managing Director of LT Foods, one of India's leading basmati exporters. LT Foods therefore turned to the food chain team of Bayer CropScience in 2010 to fight diseases and pests and ensure that the import authorities' requirements would be met so that consumers could enjoy one of India's finest agri products.

Much has been achieved since then. "We have developed customized crop protection solutions and trained some 2,000 small farmers," says Yogesh Mishra, food chain manager for Bayer CropScience in central India. The training programs focused on identifying diseases and pests. Another topic was the correct use of crop protection products, spraying techniques and optimum user protection.

The crucial test takes place each fall to determine what has been achieved. The basmati stalks, which are up to 1.4 meters long, are then cut in bundles, laid out to dry, threshed by hand and transported to the collection point of LT Foods. "We have significantly improved quality and productivity over the past three years. Our rice can hold its own in the world's supermarkets, and consumers can enjoy it with a good conscience," says Arora. He explains that the farmers' yields have risen by 8 to 10 percent and their net incomes by 10 to 12 percent.

One of the rice growers whose crops received the highest marks from LT Foods is Anand Bhandari from the small village of Bharkachha Kalan. The cooperation with Bayer CropScience and LT Foods was a turning point in his farming career. "Our knowledge of pests, diseases and cultivation methods makes us more independent. We can now identify problems ourselves, and we know the right solutions. The knowledge I've gained has enabled me to increase yields by as much as 15 to 20 percent."

From Latin America to Europe to Asia, food chain partnerships are of long-term benefit to the participating farms and communities worldwide. The projects give farmers access to the latest scientific knowledge and to the expertise of a global research-based company. In this way, Bayer helps to improve people's lives and safeguard food supplies for a growing world population.

Liam Condon, Chairman of the Executive Committee of Bayer CropScience, on the subgroup's strategy

"Promoting sustainable agriculture"

Our planet will have more than nine billion people to feed by 2050. This presents a tremendous challenge for farmers. They need to produce more food, although their most important resources – arable land and water – cannot be increased indefinitely.

That is why we support farmers in sustainably raising their productivity: with stress-tolerant, high-yielding seed varieties for cotton, soybeans, canola, wheat and vegetables, and with state-of-the-art crop protection products that safeguard plants from diseases, insect pests and weeds. We offer farmers technology and expertise in the safe, responsible and environmentally compatible use of our products. In addition, we encourage sustainable agricultural practices through our food chain partnerships.

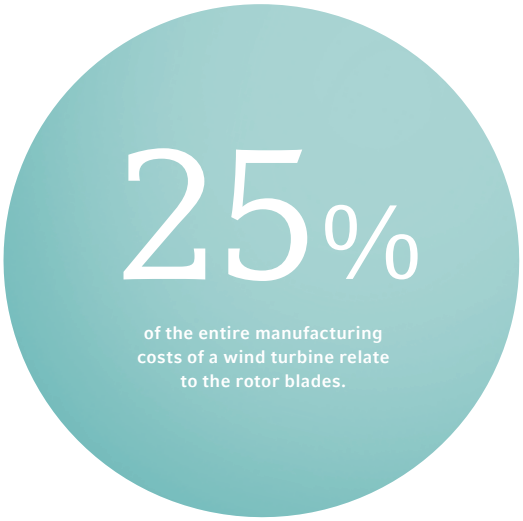
Feeding the global population is among this century's greatest challenges. We can only master it by working together to sustainably drive farming's future.

Bayer Annual Report 2013

Conserving resources

Bayer MaterialScience has developed a nine-meter-long rotor blade made of polyurethane in collaboration with the Huaye Wind Power Group, China. Dr. Marc Schütze (right), project manager at Bayer MaterialScience, and Kim Klausen (left), head of the new Wind Energy Competence and Development Center, take delivery of a rotor blade in Leverkusen.

Bayer MaterialScience // Sun, wind and water: energy from renewable sources is the way of the future. Bayer MaterialScience is supporting this trend with innovative products and continually developing new methods for conserving energy and resources.



Dr. Marc Schütze runs his hand over the shiny white surface. The rotor blade is smooth and compact, as if it were made from one piece. "The surface actually hides a complex interior," he explains. The innovative rotor blade comprises dozens of layers of thin glass fibers, a very stable core and a special plastic that holds everything together. The project manager from Bayer MaterialScience is proud of this material, a polyurethane resin that could give wind energy a real lift.

The nine-meter-long prototype that Schütze is inspecting highlights the many advantages of the newly developed plastic. It was built by a Chinese manufacturer in collaboration with Bayer MaterialScience. "The polyurethane rotor blade is more stable and durable than previous models made using epoxy resins as the infusion material," Schütze says. And stability and durability are the critical properties in wind power turbines, because the rotors are getting longer and heavier to boost energy yields, and this increases the forces acting on them. That makes high stability and low weight all-important. Weight reductions of up to 10 percent will be possible in the future.

However, this innovation from Bayer MaterialScience is useful for another reason: it greatly simplifies the manufacture of the rotor blades. The polyurethane resin flows more quickly through the fiber layers, is distributed more evenly and hardens more quickly. That saves manufacturers money. "Cutting costs is a crucial factor for wind power," Schütze says, "because the rotor blades account for about one-fourth of the total costs of a system."

It is with products like this new infusion resin that Bayer MaterialScience is helping to expand the use of renewable energy sources so that energy systems can be restructured. Whether in wind turbines or solar systems, raw materials and application solutions for polyurethane foams or coatings and high performance polycarbonate plastics make improvements possible in many areas.

"We also consider ourselves to be pioneers in the key field of energy efficiency and are constantly developing new ways to save electricity and conserve resources," says Dr. Tony Van Osselaer, the Bayer MaterialScience Management Board member responsible for production. "Products and processes – the plastics industry is an important leader in both of these areas as we advance toward a more sustainable future."

Bayer MaterialScience intends to work as closely as possible with other industries along the way. For example, the company established a global Wind Energy Competence and Development Center in Otterup, Denmark, in 2012 to steer the company's global wind energy activities. "We also want to share experience and collaborate with the major wind power companies in Denmark," explains the center's director, Kim Harnow Klausen.

The choice of location was deliberate. After all, Denmark has been the leader in this sector for decades and produces nearly half of all wind turbines worldwide. The field offers tremendous potential, with industry experts predicting wind energy production to triple in the next ten years alone. In other words, wind energy is a broad area of activity for the

Left // Bayer engineer Dirk Passmann examines the material and the production quality of a component for a new wind turbine rotor blade.

Below // The rotor blades of wind turbines are being steadily increased in length to raise electricity output. This makes it essential to improve the blades' stability and reduce their weight.

"Cutting costs is a crucial factor for wind power."

Dr. Marc Schütze, project manager at Bayer MaterialScience

The control room at the MDI plant in Caojing, Shanghai: Bayer employees Fanny Fan (front), Todd Huang (center) and Qi Wu use the STRUCTese™ management system to reduce the facility's energy consumption.

material experts at Bayer MaterialScience, who already are coming up with new ideas. "For example, we think rotor blade cores could be made from fiber-reinforced polyurethane rather than wood," says Klausen.

Another of the company's materials also is ideal for innovations in wind energy: polycarbonate, a lightweight but robust, high-performance plastic, can be used in the simple mass production of mini-rotor blades to generate electricity for individual homes in remote areas.

"We are constantly developing new ways to save electricity and conserve resources."

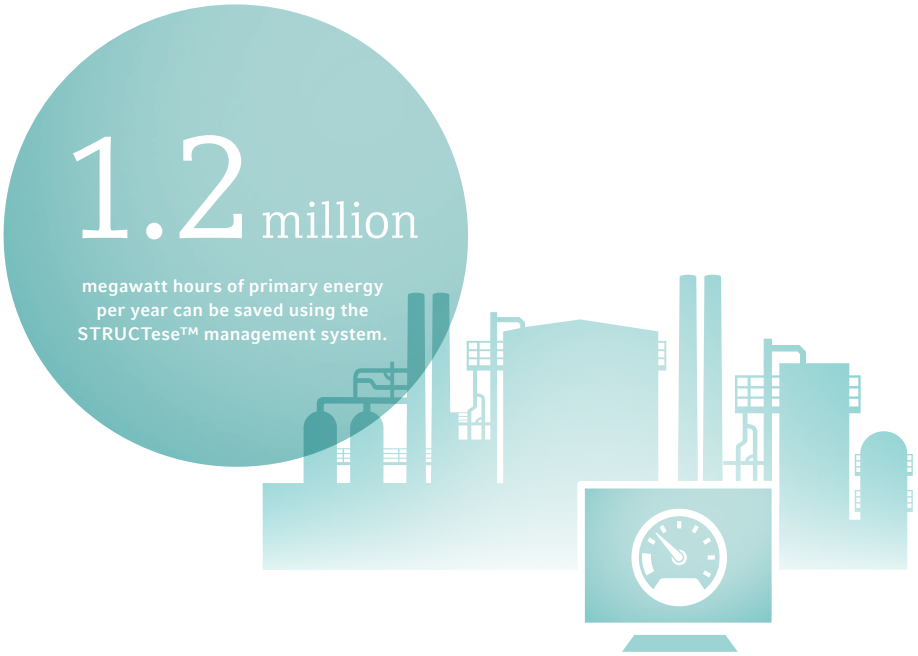
Dr. Tony Van Osselaer, member of the Board of Management of Bayer MaterialScience responsible for production

Bayer MaterialScience also is setting its sights on innovations for harnessing energy from the sun, such as with photovoltaic modules that can be directly integrated into the walls of a house. Solar cells of this kind currently have a glass cover. Engineers in the company are now working to provide them instead with a thin coating of polyurethane, thereby reducing weight, cutting costs, increasing design options and improving energy efficiency.

But Bayer MaterialScience does not just help others to use energy more efficiently, it is also constantly striving to reduce power, gas and steam inputs at its own production facilities. In fact, the company has set itself a new goal: "By 2020, we aim to increase energy efficiency by 30 percent compared to 2005," says Van Osselaer. At the same time, carbon dioxide emissions per metric ton of material sold are to be slashed by 40 percent.

Some of the most important conditions for achieving this goal are already in place, including the STRUCTese™ management system, which optimally controls the energy consumption of individual units, reducing it by an average of one tenth. Developed by Bayer MaterialScience, this method has been introduced in 60 plants worldwide since 2008, from Baytown in the United States to Leverkusen, Germany, and Caojing, China. As a result, a total of over 1.2 million megawatt hours of energy are now saved every year. "Accordingly, CO_2 emissions are falling by a good 360,000 metric tons annually," reports energy manager Matthias Böhm.

In addition to this comprehensive method, Bayer MaterialScience also uses numerous individual, innovative methods to manufacture its products in the most eco-friendly way possible. In the polyurethanes area, for example, the company has developed a technology that reduces the energy required to produce the TDI component by 60 percent. The fact that one critical chemical reaction no longer takes place in solution, but in the gaseous state, makes this possible.



OPTIMIZING ENERGY CONSUMPTION //

The STRUCTese™ management system developed by Bayer MaterialScience has been introduced at some 60 facilities worldwide since 2008. The system optimizes the energy consumption of individual units, reducing it by an average of one tenth. This lowers CO_2 emissions by more than 360,000 tons per year.

Known as gas-phase technology, it is already in use in Caojing and will soon also be introduced in Dormagen, where the company is building a new, large-scale TDI facility.

Chlorine, one of the most important base substances in the entire chemical industry, is needed for plastics precursors such as TDI, as well as for drugs and fertilizers. The production of chlorine uses enormous amounts of electricity, roughly two-thirds of total consumption at Bayer MaterialScience. But the company has found a way to reduce the power requirement here as well: using oxygen-depolarized cathode (ODC) technology that the company developed with a partner, chlorine can be produced with up to 30 percent less electricity compared to the standard process.

"Widespread use of this innovative electrolysis method could benefit some countries' entire economies," Van Osselaer points out. "If all manufacturers in Germany were to use it, we could save a quantity of electricity equal to the annual consumption of a major city like Cologne." Global marketing of the process began in 2013. However, it would seem that ODC technology can be used to produce more than just chlorine. Bayer MaterialScience currently is testing it for numerous other potential applications, such as fuel cells or zinc-air batteries that can store electricity produced from renewable sources.

Whether highly efficient processes or eco-friendly products: the innovative capability of Bayer MaterialScience continues to provide new solutions for a sustainable energy supply.

Patrick Thomas, Chairman of the Executive Committee of Bayer MaterialScience, on the subgroup's strategy

"For the needs of a changing world"

As the planet's population increases in size and wealth, demands on fossil-based resources are growing at an unprecedented level. Our modern world is characterized by major challenges. Bayer MaterialScience believes that innovation will be a major contributor to tackling these challenges and is focused on developing new processes, products and solutions for key areas such as the manufacturing, construction, automotive and electronics industries.

Our focus is on understanding the main issues that society faces and on satisfying the current and future needs of markets and consumers. We intend to focus our research, development and product portfolio through an agenda that meets the needs of our own sustainability targets and the future needs of society. Everything we do must benefit society, have no further adverse effect on the environment and deliver economic benefit. Our guide is the Group mission "Bayer: Science For A Better Life."

In line with this, we will continue to pursue long-term, profitable growth. We aim to maintain our leading position in the traditional markets of Europe and the Americas while continuing our program of expansion in the growth markets, particularly Asia. We will respond to the increasing competitive pressure by, among other things, expanding our technical excellence and continually improving our processes.

Integrated Annual Report

This year's Annual Report combines our financial and our sustainability reporting for the first time. Our aim in integrating the two previous publications is to elucidate the interactions between financial, ecological and societal factors and underline their influence on our company's long-term development. In this Annual Report we document our business achievements and explain how sustainability is contributing to our future success.

For further details see "Reporting Principles" on page 350.

How to use this report

The sales, earnings and other financial data for the Bayer Group can be found in the Report on Economic Position, which is color-coded in the table of contents.

Our Annual Report is available in a print and an online version. The online Annual Report at WWW.BAYER.COM/AR13 is the "Annual Report 2013 – Augmented Version," which contains supplementary material. The print version refers the reader to numbered "Online annexes" featuring this additional information. You can enter these numbers in a search mask on any page of the online Annual Report to directly access the annexes.

Information regarding the external audits of the print and augmented versions can be found under "Reporting Principles" on page 350.

PDF files of the print version ("Annual Report 2013") and the online version ("Annual Report 2013 – Augmented Version") are available for download from the Bayer website.

Online annexes

Cross-references within the Annual Report

References to internet sites

The Annual Report 2013 – Augmented Version can be found at WWW.BAYER.COM/AR13.

The Annual Report 2013 (print version) is also available as an app from the appstore under "Bayer Annual Report."

Bayer Annual Report 2013

Executive Council

The Executive Council, chaired by the Group CEO and comprising the members of the Bayer AG Board of Management and the CEOs of the three subgroups Bayer HealthCare, Bayer CropScience and Bayer MaterialScience

PROF. WOLFGANG PLISCHKE[1]
Technology · Innovation · Sustainability · Asia/Pacific region

Wolfgang Plischke studied biology at Hohenheim University. Having gained a Ph. D., Plischke began his career with Bayer at the subsidiary Miles in 1980. After holding a number of positions in Germany and abroad, he became Head of the Pharmaceuticals Business Group in North America and subsequently worldwide. Plischke was appointed to the Board of Management in March 2006.

DR. MARIJN DEKKERS
Chief Executive Officer of Bayer

Marijn Dekkers studied chemistry and chemical engineering in Nijmegen and Eindhoven. After gaining a Ph. D., he began a career in research with General Electric in the United States. Having held various positions in the United States, latterly as Chief Executive Officer and President of Thermo Fisher Scientific Inc., Dekkers took over as Bayer Chief Executive Officer in October 2010.

DR. OLIVIER BRANDICOURT
Chief Executive Officer, Bayer HealthCare

Olivier Brandicourt studied medicine and biology in Paris and has worked as a practicing physician. Having begun his industrial career in 1987 at Parke-Davis/Warner-Lambert, he subsequently joined Pfizer, where he held positions of increasing responsibility, becoming a member of its Executive Leadership Team in 2010. Brandicourt took over as Chief Executive Officer of Bayer HealthCare in November 2013.

LIAM CONDON
Chief Executive Officer, Bayer CropScience

Liam Condon studied International Business at Dublin City University and the Technical University of Berlin. He held various positions of increasing responsibility with the former Schering AG, Berlin, Germany, and with Bayer HealthCare in Europe and Asia, including Managing Director of Bayer HealthCare China and Head of Bayer HealthCare in Germany. Condon took over as Chief Executive Officer of Bayer CropScience in December 2012.

PATRICK THOMAS
Chief Executive Officer, Bayer MaterialScience

Patrick Thomas studied engineering at Oxford University. He began his career with Imperial Chemical Industries (ICI). Positions held by Thomas include that of CEO of ICI Polyurethanes and Corporate Executive Vice President of Huntsman Matlin Patterson. Thomas took over as Chief Executive Officer of Bayer MaterialScience in January 2007.

WERNER BAUMANN[1]
Finance · Europe and North America regions

Werner Baumann studied economics in Aachen and Cologne. He joined Bayer AG in 1988, where his first duties were in the Corporate Finance Department. After holding positions of increasing responsibility in Spain and the United States, he became a member of the Board of Management of Bayer HealthCare and its Labor Director. Baumann was appointed Chief Financial Officer of Bayer in May 2010.

KEMAL MALIK[1]

Kemal Malik studied medicine and worked in a London hospital. After holding different positions of increasing responsibility at Bristol-Myers Squibb, he joined Bayer in 1995. In 2007 Malik became a member of the Executive Committee, Head of Global Development and Chief Medical Officer of Bayer HealthCare. He was appointed to the Bayer Board of Management in February 2014.

MICHAEL KÖNIG[1/2]
Human Resources · Latin America/Africa/Middle East region

Michael König studied chemical process engineering in Dortmund, joining Bayer in 1990. After holding positions of increasing responsibility, he transferred to China in 2000 as a General Manager. In 2007 König became Senior Bayer Representative, and from 2011 he headed up the Polycarbonates Business Unit of Bayer MaterialScience in Shanghai. He was appointed to the Bayer Board of Management in April 2013.

[2] Labor Director

[1] Prof. Wolfgang Plischke retires on April 29, 2014. He will be succeeded as of that date by Kemal Malik, who already joined the Board of Management in February. Malik then assumes responsibility for Innovation and the North America and Latin America regions. Responsibility for Technology, Sustainability and the Asia/Pacific region will be transferred to Michael König effective April 30, 2014.

Report of the Supervisory Board

During 2013 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 and the Chairman of the Board of Management maintained a constant exchange of information. 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 as a whole.

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 individual organizational units and the principal affiliated companies in Germany and abroad.

Four meetings of the Supervisory Board took place during 2013. No member of the Supervisory Board attended fewer than half of its meetings. The average attendance rate by Supervisory Board members at the meetings held in 2013 was 95 percent.

The members of the Board of Management regularly attended the meetings of the Supervisory Board.

PRINCIPAL TOPICS DISCUSSED BY THE SUPERVISORY BOARD

The deliberations of the Supervisory Board focused on questions relating to the strategies and business activities of the Group as a whole and of the subgroups. The discussions at the respective meetings in 2013 centered on various topics. At the February meeting, the Supervisory Board discussed the 2012 Annual Report and the agenda for the 2013 Annual Stockholders' Meeting. It also dealt at length with the Bayer Group's risk management system and matters relating to the Board of Management's compensation.

Werner Wenning, Chairman of the Supervisory Board of Bayer AG

At its meeting in April, the Supervisory Board reviewed the development of the business in the first quarter and discussed the imminent Annual Stockholders' Meeting. It also adopted resolutions on the projects to acquire Conceptus, Inc. and Steigerwald Arzneimittelwerk GmbH.

The discussions at the September meeting of the Supervisory Board focused on the situation of the Group, including developments concerning its strategy and competitive position. The main areas of research in the HealthCare and CropScience subgroups were also discussed along with the compensation of the Board of Management and the changes to the German Corporate Governance Code. Finally, the Supervisory Board adopted a resolution on a formal amendment to the Articles of Incorporation.

At its meeting in December 2013, the Supervisory Board appointed Mr. Kemal Malik to the Board of Management effective February 1, 2014 and extended the term of office of Prof. Wolfgang Plischke as a member of the Board of Management until April 29, 2014, the date of the Annual Stockholders'

Meeting. The Supervisory Board determined ceilings for the compensation of the Board of Management and discussed the latest recommendations of the German Corporate Governance Code. It also undertook the routine review of the fixed compensation of the members of the Board of Management and the pensions of the former members of the Board of Management. Another major focus was on the planned acquisition of Algeta ASA. Also at this meeting, the Board of Management presented its planning for the business operations, the finances and the asset and liability structure of the Bayer Group in the years 2014 through 2016. In addition, the Supervisory Board resolved on the declaration concerning the German Corporate Governance Code. Following the meeting, an information and discussion forum was held on the management of risks associated with legal disputes.

COMMITTEES OF THE SUPERVISORY BOARD

The Supervisory Board has a Presidial Committee, an Audit Committee, a Human Resources Committee and a Nominations Committee. The current membership of the committees is shown on page 339.

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 Chairman 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 meeting of the full Supervisory Board. Certain decision-making powers in connection with capital measures, including the power to amend the Articles of Incorporation accordingly, are also delegated to this committee. The Presidial Committee may also undertake preparatory work for full meetings of the Supervisory Board.

In 2013 the Presidial Committee was not required to convene in its capacity as the mediation committee or for any other purpose.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of the Audit Committee in 2013, Dr. Klaus Sturany, satisfies the statutory requirements concerning the independence and the expertise in the field of accounting or auditing that a member of the Supervisory Board and the Audit Committee is required to possess. The Audit Committee meets regularly four times a year.

Its tasks include examining the company's financial reporting along with the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group, the combined management report, the proposal for the use of the distributable profit of Bayer AG, and the interim financial statements and management reports of the Bayer Group, all of which are prepared by the Board of Management. On the basis of the auditor's report on the audit of the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report, the Audit Committee develops proposals concerning the approval of the statements by the full Supervisory Board. The Audit Committee is also responsible for the company's relationship with the external auditor. The Audit Committee submits a proposal to the full Supervisory Board concerning the auditor's appointment, prepares the awarding of the audit contract to the audit firm appointed by the Annual Stockholders' Meeting, suggests areas of focus for the audit and determines the audit fees. It also monitors the independence, qualifications, rotation and efficiency of the auditor. In addition, the Audit Committee oversees the company's internal control system – along with the procedures used to identify, track and manage risk – and the internal audit system. It also deals with corporate compliance issues and discusses developments in this area at each of its meetings.

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 interim financial statements.

The meetings focused on a number of topics. At the February meeting, the Audit Committee discussed the consolidated financial statements and the Group's tax strategy. It also carefully considered the risk report, which covered the risk management system, planning and market risks, legal risks, corporate compliance, the report on process and organizational risks and the internal control system, and the report by Corporate Auditing. At this meeting it also submitted a recommendation to the full Supervisory Board concerning the resolution to be put before the Annual Stockholders' Meeting on the appointment of the auditor of the financial statements.

The April meeting mainly dealt with the yearly report of the Group Compliance Officer and with determining the main areas of focus for the audit of the 2013 financial statements. The July meeting was devoted to the audit being conducted by the German Financial Reporting Enforcement Panel (DPR). At its meeting in October, the Audit Committee discussed the ongoing reorganization of the accounting function, the status of the DPR audit and the intended integration of the Sustainable Development Report into the management report.

Human Resources Committee: On this committee, too, there is parity of representation between stockholders and employees. It consists of the Chairman of the Supervisory Board and three other members. The Human Resources Committee prepares the personnel decisions of the full Supervisory Board, which resolves on appointments or dismissals of members of the Board of Management. The Human Resources 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 and the respective compensation components, as well as to regularly review the compensation system on the basis of recommendations submitted by the Human Resources Committee. The Human Resources Committee also discusses the long-term succession planning for the Board of Management.

The Human Resources Committee convened on three occasions in 2013. The matters discussed at these meetings concerned the compensation and contracts of the members of the Board of Management, the appointment of Mr. Kemal Malik to the Board of Management and the extension of Prof. Wolfgang Plischke's term of office as a member of the Board of Management.

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 Nominations Committee comprises the Chairman of the Supervisory Board and the other stockholder representative on the Presidial Committee.

At one meeting and on several other occasions in 2013, the Nominations Committee discussed possible candidates for election to the Supervisory Board as stockholder representatives at the 2014 Annual Stockholders' Meeting. The committee also discussed the mid-term planning for the next regular elections.

CORPORATE GOVERNANCE

The Supervisory Board dealt with the ongoing development of corporate governance at Bayer, taking into account the May 13, 2013 version of the German Corporate Governance Code. In December the Board of Management and the Supervisory Board issued a new declaration concerning the German Corporate Governance Code, which is reproduced on page 185 of the Annual Report.

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 German Commercial Code and the International Financial Reporting Standards (IFRS). The combined management report was prepared according to the German Commercial Code. The auditor, PricewaterhouseCoopers Aktiengesellschaft, Wirtschaftsprüfungsgesellschaft, Essen, has audited the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. 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 and the consolidated financial statements of the Bayer Group. 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 for the use of the distributable profit, the consolidated financial statements of the Bayer Group and the combined management report. 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 for distribution of the profit, which provides for payment of a dividend of €2.10 per share.

The Supervisory Board would like to thank the Board of Management and all employees for their dedication and hard work in 2013.

Leverkusen, February 26, 2014
For the Supervisory Board:

WERNER WENNING
Chairman

Investor Information

Performance of Bayer Stock in 2013 [Graphic 2.1]

(indexed; 100 = Xetra closing price on December 31, 2012; source: Bloomberg)

// 2013: Bayer stock clearly outperforms DAX with yield of 45 percent

// Share price above €100 for the first time

// Board of Management and Supervisory Board propose dividend increase to €2.10 per share for 2013

The stock market in 2013

INTERNATIONAL EQUITY MARKETS PERFORMED POSITIVELY

2013 was a good year for the international equity markets thanks to favorable economic prospects and the expansionary monetary policies of the European Central Bank and the U.S. Federal Reserve. After the DAX had topped 8,000 points in March, a brief downturn in April pushed it back below 7,500 and thus to a lower level than at the start of the year. In October, however, the DAX exceeded 9,000 points for the first time in its 25-year history. It closed 2013 at 9,552 points for a gain of about 25 percent on the year.

The European equities index EURO STOXX 50 (performance index) rose by about 22 percent, ending the year at 5,625 points. Market trends in the United States and Japan were also very positive, with the S&P 500 gaining around 30 percent and the Nikkei 225 nearly 57 percent.

BAYER SHARES ABOVE €100 FOR THE FIRST TIME

Bayer stock posted another excellent performance in 2013, appreciating by 41.8 percent and thus outperforming the benchmark sector indices. The EURO STOXX Health Care Index (performance index) rose by 14 percent in 2013, while the EURO STOXX Chemicals Index (performance index) climbed by 19 percent.

Bayer's share price developed especially positively in the first and fourth quarters. Including the dividend of €1.90 per share paid at the end of April 2013, the return for the year was 45.2 percent. Bayer shares closed 2013 in triple digits at €101.95, close to the annual and all-time high of €103.05.

Our company's market capitalization more than doubled over the two-year period from year end 2011 to year end 2013. At the end of 2013 Bayer had the highest weighting in the DAX index, at over 10 percent.

More than 90 percent of the roughly 30 equity analysts who regularly rate our company had a buy or hold recommendation on the stock at the end of last year.

Bayer Stock Data [Table 2.1]

		2012	2013
Earnings per share	€	2.91	3.86
Core earnings per share*	€	5.30	5.61
Gross cash flow per share	€	5.51	7.05
Equity per share	€	22.43	25.16
Dividend per share	€	1.90	2.10
Year-end price**	€	71.89	101.95
High for the year**	€	72.95	103.05
Low for the year**	€	47.97	69.01
Total dividend payment	€ million	1,571	1,737
Number of shares entitled to the dividend (Dec. 31)	million	826.95	826.95
Market capitalization (Dec. 31)	€ billion	59.4	84.3
Average daily share turnover on German stock exchanges	million	2.7	2.1
Price/EPS**		24.7	26.4
Price/core EPS**		13.6	18.2
Price/cash flow**		13.0	14.5
Dividend yield	%	2.6	2.1

2012 figures restated
* For details on the calculation of core earnings per share, see Combined Management Report, Chapter 16.3.
** Xetra closing prices (source: Bloomberg)

BAYER RETAINS GOOD REFINANCING OPPORTUNITIES ON THE BOND MARKET

Issue volume on the corporate bond market in 2013 continued at the high level of the previous year, with interest coupons at a historic low. There was excellent investor interest in corporate bonds, partly because these continued to offer higher yields than government bonds, for example, and partly because of particularly strong demand for the debt of German issuers with diversified global operations. Subordinated debt benefited especially in 2013 following a further significant drop in risk premiums.

The development of risk premiums is apparent from the trend in credit default swaps (CDS). On the derivatives market, the price of these tradable insurance contracts, which are used to hedge against default of a borrower, show how market participants rate a company's credit standing. As can be seen from Graphic 2.2, CDS volatility was relatively low in 2013. From an overall cost point of view, however, the slight drop in risk premiums during the year was more than offset by higher costs resulting from the rise in interest rates.

In April 2013, Bayer used this favorable environment to issue a three-year bond with a nominal volume of €200 million and a floating-rate coupon on attractive terms. In May, we placed a six-year bond with a nominal volume of JPY 10 billion and a fixed-rate coupon of 0.594 percent. The financing situation in 2013 was also marked by the maturing of a €1 billion bond we had issued in 2006 to partially finance the acquisition of Schering, Berlin, Germany. Redemption took place out of operational liquidity without any direct follow-on financing. Further details of outstanding bonds are given in Note [27] to the consolidated financial statements.

Consolidated Financial Statements Note [27]

Rates for Five-Year Credit Default Swaps (CDS) 2013 [Graphic 2.2]

[1] source: Bloomberg
[2] iTraxx Europe is a CDS index comprising the CDS of 125 companies (including financial institutions) with investment-grade ratings.

LONG-TERM RETURN ON BAYER STOCK WELL AHEAD OF THE MARKET

A long-term investor who purchased Bayer shares for €10,000 five years ago and reinvested all dividends would have seen the value of the position grow to €28,392 as of December 31, 2013, giving an average annual return of 23.2 percent.

Long-Term Returns on Bayer Stock in % p.a. (Dividends Reinvested) [Table 2.2]

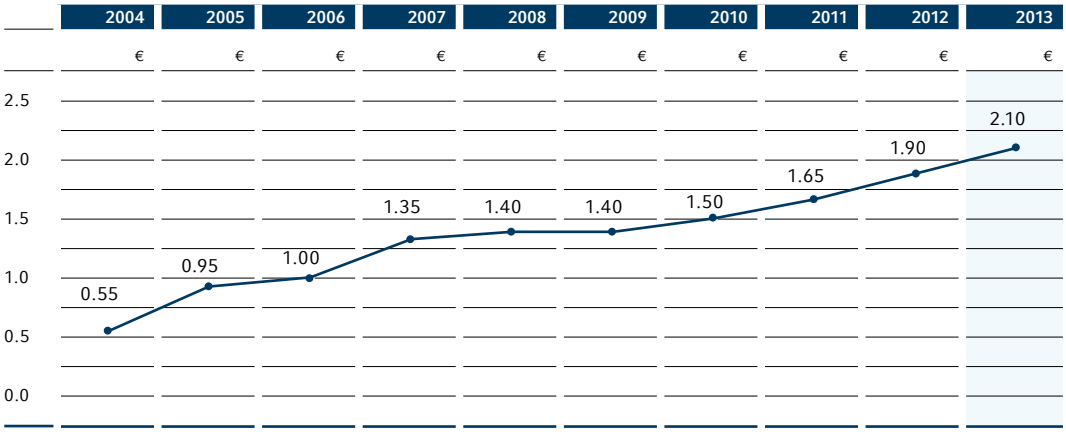
Annual returns	1 year 2013	3 years 2011–2013	5 years 2009–2013
	%	%	%
Bayer	+45.2	+25.9	+23.2
DAX	+25.5	+11.4	+14.7
DJ EURO STOXX 50	+21.5	+7.2	+8.5

DIVIDEND INCREASE TO €2.10 PER SHARE

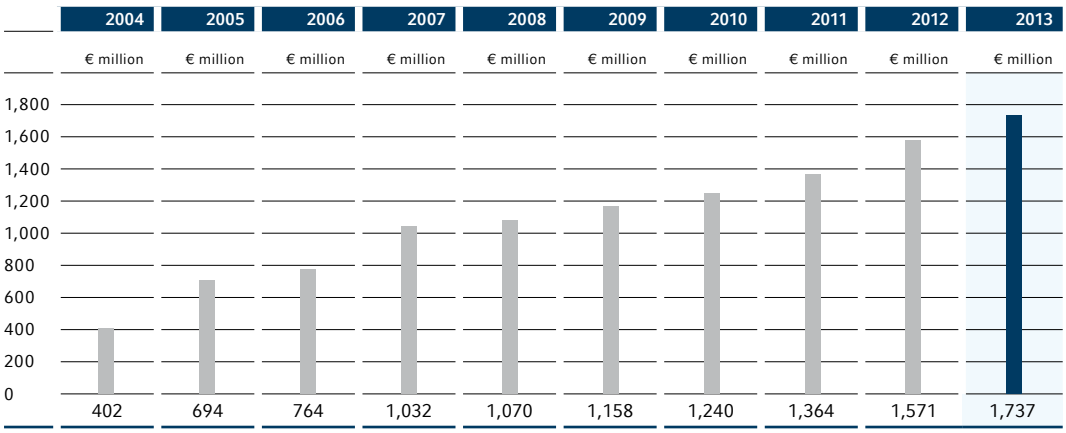
The Board of Management and the Supervisory Board will propose to the Annual Stockholders' Meeting that the dividend be increased by €0.20 to €2.10 per share. Thus we once again intend that our stockholders should participate in last year's positive business performance. The resulting payout ratio of 37 percent calculated on core earnings per share is within our target corridor of 30 to 40 percent (for details on the calculation of core earnings per share, see Chapter 16.3 of the Combined Management Report).

The dividend yield calculated on the share price of €101.95 at year end 2013 amounts to 2.1 percent and the total dividend payment to €1,737 million.

Dividends Per Share [Graphic 2.3]



Total Dividend Payment [Graphic 2.4]



A SUSTAINABLE INVESTMENT

In 2013 Bayer again qualified for inclusion in major sustainability indices that assess companies on the basis of environmental, social and governance (ESG) criteria. Bayer was listed in the FTSE4Good Global and Europe and the Dow Jones Sustainability World indices last year. Following Bayer's first-time classification as a pharmaceutical company, we were no longer included in the Dow Jones Sustainability Index Europe. Bayer was featured in the Climate Disclosure Leadership Index for the ninth consecutive year. In 2013 we continued our dialogue with current and potential investors who base their investment decisions on ESG criteria.

ONLINE ANNEX: 2-1

Sustainability Indices Featuring Bayer Stock in 2013 [Graphic 2.4-1]

Dow Jones Sustainability Index World	
FTSE4Good Global Index	
FTSE4Good Europe Index	
Climate Disclosure Leadership Index*	
Access to Medicine Index*/**	

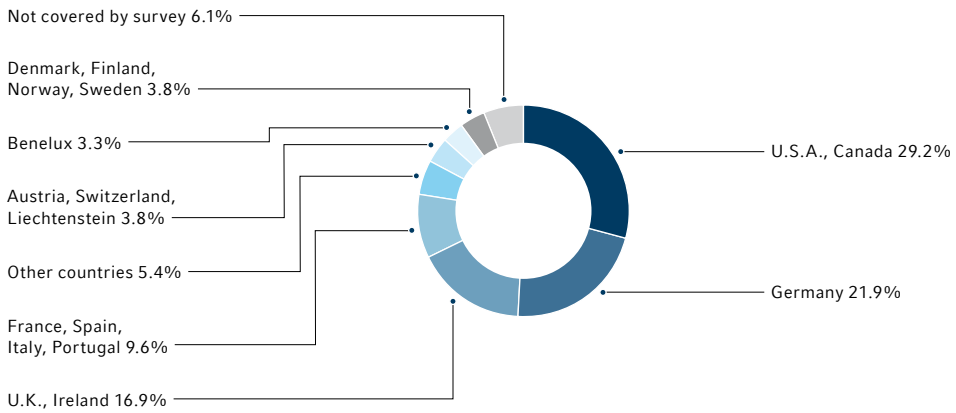
* The Climate Disclosure Leadership Index and the Access to Medicine Index are not trading indices.
** not re-assessed in 2013

INTERNATIONAL OWNERSHIP STRUCTURE

At the end of 2013, approximately 270,000 stockholders were listed in our share register. Bayer has a 100 percent free float as defined by Deutsche Börse, the operator of the Frankfurt Stock Exchange.

An analysis of our ownership structure carried out in the fourth quarter of 2013 shows the international distribution of our capital stock. The highest proportion of our outstanding shares, almost 30 percent, is held by investors in the U.S. and Canada. Bayer has a stable ownership structure that has altered only marginally in recent years.

Ownership Structure by Country [Graphic 2.5]



source: IPREO

ACCOLADES FOR CAPITAL MARKET DIALOGUE

www.investor.bayer.com

In 2013 Bayer received several awards for its communications with the capital markets.

We were awarded first place in the IR Magazine Award in the Best Analyst/Investor Meetings category for our regular "Meet Management" conferences. We have garnered first place three times in the Thomson Reuters Extel IR Rankings for the best IR work in the Chemicals category. According to a report published by the German Investor Relations Association (DIRK) and the German business magazine *Wirtschaftswoche*, Bayer is among the best of the DAX 30 companies in terms of its investor relations activities. Here we gained second place. Bayer's IR website was judged the world's best in the health care sector in the IR Global Rankings 2013 (MZ-Consult, U.S.A.). At the end of the year we relaunched our IR website for stockholders and analysts in light of the growing importance of mobile devices. The new responsively designed site automatically adapts to different formats for PCs, laptops and mobile devices.

We continued to step up our IR activities in 2013, attending 22 broker conferences, holding 22 roadshows and participating in several field trips. These activities took place in a total of 25 financial centers. Last year we held "Meet Management" conferences in New York, Leverkusen, and – for the first time – London. This conference format enables small groups of investors and analysts to meet with members of the management boards of Bayer AG and the subgroups for detailed discussions on Bayer's corporate and business development. As in previous years, private investors had an opportunity to find out about our company and our mission "Bayer: Science For A Better Life" at a number of stockholder forums at which the Investor Relations team was represented.

01

Combined Management Report

of the Bayer Group and Bayer AG as of December 31, 2013

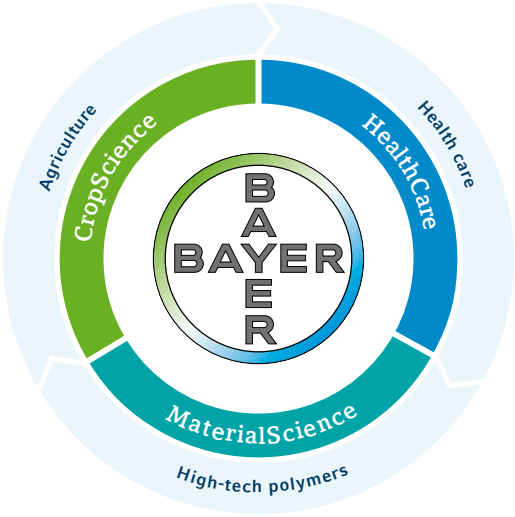
For direct access to a chapter, simply click on its name.

Fundamental Information About the Group

1. Bayer at a Glance

1.1 Corporate Profile

The Bayer Group [Graphic 3.1.0]



Bayer is a global enterprise with core competencies in the areas of health care, agriculture and high-tech polymer materials.

Bayer AG, Leverkusen, Germany, acts as a strategic management holding company. It defines the values, goals and strategies of the entire Group. It is also responsible for resource allocation and managerial appointments. Led by Bayer AG, the HealthCare, CropScience and MaterialScience subgroups independently manage their business operations in line with preset objectives.

Bayer HealthCare is one of the leading companies in the area of prescription medicines and consumer products. This subgroup researches, develops, manufactures and markets products to improve the health of people and animals.

Bayer CropScience is one of the world's leading research-intensive companies in the agricultural industry, offering a broad range of innovative chemical and biological products for improving plant health, along with high-value seeds. It also provides extensive customer service to support modern, sustainable agriculture. A further focus is on non-agricultural applications.

Bayer MaterialScience is a renowned supplier of high-tech polymers and develops innovative product solutions for a wide variety of everyday uses. Products holding leading positions on the world market account for a large proportion of its sales.

The holding company and subgroups are supported in their activities by the three service companies Bayer Business Services, Bayer Technology Services and Currenta.

The Bayer Group in 2013 [Graphic 3.1.1]

Total	Sales	Employees	R&D expenditures	Bayer AG and no. of fully consolidated companies
	40,157 (39,741) (€ million)	**113,200** (110,000)	**3,190** (3,013) (€ million)	**289** (290)

North America
- **9,680** (9,576) (€ million)
- **15,200** (15,300)
- **812** (588) (€ million)
- **40** (46)

Europe
- **15,086** (14,722) (€ million)
- **53,600** (52,300)
- **2,153** (2,198) (€ million)
- **150** (144)

Latin America/Africa/Middle East
- **6,768** (6,684) (€ million)
- **16,400** (16,200)
- **51** (41) (€ million)
- **44** (45)

Asia/Pacific
- **8,623** (8,759) (€ million)
- **28,000** (26,200)
- **174** (186) (€ million)
- **55** (55)

2012 in parentheses

Today, the Bayer Group comprises around 290 consolidated companies in 73 countries throughout the world. We have corporate locations in close proximity to our customers and markets worldwide, invest locally and offer attractive jobs.

Our Mission

"BAYER: SCIENCE FOR A BETTER LIFE"

Bayer is a world-class innovation company. Our scientific successes are intended to help improve people's lives. At the same time, our innovations form the basis for sustainable and profitable business activity.

Our products are helping to address some of today's biggest challenges, including global population growth, an aging society and the need to make efficient – and, wherever possible, sustainable – use of natural resources.

- We are improving people's quality of life by preventing, alleviating or curing diseases.
- We are helping to provide an adequate supply of high-quality food, feed and renewable plant-based raw materials.
- And our high-tech polymer materials are making significant contributions to factors such as energy and resource efficiency in the areas of mobility, construction and home living.

We have laid the foundations for achieving these goals in over more than 150 years of successful business activity, and are the only global company to combine expertise in human, animal and plant health and in high-tech polymer materials. Our focus on innovation is the key to maintaining or achieving leadership positions in all of our markets.

Our Values

A central role is played by our LIFE values, which guide us in fulfilling our mission "Bayer: Science For A Better Life." **LIFE** stands for **L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency.

These values apply to everyone at Bayer and are firmly integrated into our global performance management system for managerial employees. Our value culture ensures a common identity within the enterprise across national boundaries, management hierarchies and cultural differences.

1.2 Group Strategy

In line with our mission "Bayer: Science For A Better Life," we aim to improve people's quality of life. For this endeavor, we focus on our core competency of developing and successfully commercializing innovative products and solutions based on scientific knowledge.

OUR OBJECTIVE: PROFITABLE GROWTH

Our corporate strategy is aligned toward profitable growth that will sustainably increase corporate value. We place special importance on developing new products and solutions that create significant value for customers and patients, and on serving the Emerging Markets, particularly those of Asia and Latin America. In this way we are giving more and more customers access to our products and establishing a solid basis for further growth.

OUR SUCCESS IS BASED ON INNOVATION

Bayer is a world-class innovation company that is steadily opening up new, attractive market segments in fast-growing and research-driven areas. Apart from the Life Sciences – the health care and agriculture businesses –, a further focus of our activities is on high-tech polymer materials. Our success is based on the development of new molecules, technologies, processes and business models. In the long term we expect additional growth impetus to come from interdisciplinary research at the interfaces between human, animal and plant health. We are convinced that such research can leverage significant synergies.

We plan to continue playing leading roles in our business areas and to reinforce the strong positions we already hold. A strategic focus of our investment is on expansion in the Life Sciences. We aim to drive organic growth in these businesses through investment in research and development and through targeted acquisitions and collaborations. At MaterialScience we intend to defend the leading positions we hold in our market segments. We are also continuing to adjust business processes to changing market conditions in order to improve profitability. We are investing heavily to deliver organic growth in all areas of activity. Bayer plans to spend a total of some €18 billion for research and development and for property, plant and equipment between 2014 and 2016.

ACTING SUSTAINABLY

Sustainable business practices are essential to the Group's future viability. We therefore endeavor to balance our economic objectives with social and ecological requirements in the development, manufacturing and marketing of our products. We aim to gain broad social acceptance for our activities through responsible business practices and by taking into account the expectations of relevant stakeholders.

OUR EMPLOYEES ARE OUR MOST CRUCIAL RESOURCE

Motivated employees are especially important for the successful development of our business. Bayer embraces a performance- and development-oriented corporate culture, coupled with a pronounced sense of social responsibility. We encourage human and cultural diversity within the company, placing special importance on pleasant work environments, flexible working conditions and excellent vocational and advanced training opportunities. We offer attractive career prospects and aim to continue attracting the most talented people to support our company's successful and sustainable development.

1.3 Targets and Performance Indicators

To consistently implement our strategy, we have set ambitious economic, social and ecological targets and measure their attainment in terms of selected performance indicators.

Bayer Business Targets [Graphic 3.1.2]

// Profitable Growth
Approx. 5% increase in Group sales (Fx & portfolio adj.) in 2014 to approx. €41 billion – €42 billion (expected negative currency effects of approx. 2%)
Low- to mid-single-digit percentage increase in EBITDA before special items in 2014 (expected negative currency effects of approx. 5%, approx. minus €450 million)
Mid-single-digit percentage increase in core earnings per share in 2014 (expected negative currency effects of approx. 6%)
// Innovation
Group: Increase in R&D investment for the Bayer Group to approx. €3.5 billion in 2014
HealthCare: Transition of more than 10 new molecular entities (NMEs) into development in 2014
CropScience: Transfer of at least six new molecular entities (NMEs) or traits into confirmatory technical proof-of-concept field studies in 2014
MaterialScience: Improvement of production process technology to achieve better energy efficiency
// Sustainability
Supplier management Evaluation of all strategic suppliers by 2017 and of all potential high-risk suppliers with significant Bayer spend by 2020, and development and establishment of a new sustainability standard for our supply base by 2020
Resource efficiency Improvement in Group-wide energy efficiency of 10% and reduction in Group-wide specific greenhouse gas emissions of 20% by 2020 (based on 2012), and establishment of a water management system at all sites in water-scarce areas by 2017
Safety Reduction in occupational safety incidents of 35% and in transport incidents and incidents relevant to process and plant safety of 30% (all by 2020 based on 2012)
Product stewardship Conclusion of assessment of hazard potential for substances used in quantities exceeding one metric ton per annum by 2020
Compliance Conducting of precautionary risk assessments in all three subgroups by 2015 and annual compliance training for all Bayer managers from 2015
// Employees
Continuous improvement in employee engagement; increase in the proportion of women in senior management to 30% and in the proportion of managers from outside the European Union, the United States or Canada to 25% by 2015

The new non-financial targets replace the existing set of sustainability targets for 2015 and are explained in detail in the online annex, which also includes definitions and KPIs. The forecast for further key financial data is given in Chapter 20 "Future Perspectives."

See Chapter 20

ONLINE ANNEX: 3-1.3-1

NEW NON-FINANCIAL TARGETS

With the first integrated Annual Report, we have adopted a new program of non-financial targets based on the Group strategy. This enables us to highlight the challenges we see in our core business within the context of sustainable development and identify the continuous improvements we are endeavoring to make throughout the Group. This is achieved through clearly defined targets and indicators along the value chain. These are used to monitor our progress in Innovation, Supplier Management, Resource Efficiency, Safety, Product Stewardship, Compliance and Employees.

The targets are largely based on the old "Targets 2015" program. We have also conducted our own materiality analyses on the basis of stakeholder expectations and benchmarks. Table 3.1.0-1 shows all the new target categories and definitions in detail.

PREVIOUS TARGETS FOR 2015

In 2010 the Bayer Group set ambitious non-financial targets with "Targets 2015." We have reported on annual progress in achieving the targets as part of our sustainability communications.

At the end of 2013 we met the targets in the categories Product Stewardship and Process and Plant Safety in full. We have defined new targets for both categories. Our previous Research & Development target is being continued with an absolute value. In the categories Compliance, Supplier Management, Diversity, Safety and Climate Protection, we have – for the most part – made good progress over the last few years. The definitions of targets for these categories are being continued with a partial change of focus in the new target program. However, despite good reduction results, our emission reduction targets for volatile organic compounds (VOC) and ozone depleting substances (ODS) will no longer be part of the new program as, due to reasons of materiality, we will be focusing on the areas of Water and Energy in the future. This is the case for the Waste category as well. We will still be continuing to report on the indicators for waste, ODS and VOC. Spending and projects in the area Social Commitment also remain part of our reporting.

In Table 3.1.0-2, we give a detailed overview of the completed "Targets 2015" program.

New Non-Financial Target Program [Table 3.1.0-1]

Definition of target	Target value	Target year	Explanations of target
INNOVATION			
Group Increase in R&D investment	€3.5 billion	2014	R&D investments include expenditures for research and development in the HealthCare, CropScience and MaterialScience subgroups and at Bayer Technology Services.
HealthCare Transition of more than 10 new molecular entities (NMEs) into development	>10 new molecular entities	2014	A new molecular entity is a chemical or biological substance that has not yet been developed at Bayer for a specific indication.
CropScience Transfer of at least six new molecular entities (NMEs) or traits into confirmatory technical proof-of-concept field studies	≥6 new molecular entities or plant traits	2014	A new molecular entity is a chemical or biological substance that has not yet been developed at Bayer for a specific indication. A new plant trait is a specific characteristic that has not yet been available or offered at Bayer for the crop plant in question.
MaterialScience Improvement of production process technology to achieve better energy efficiency			This innovation target supports the achievement of the resource efficiency targets.

New Non-Financial Target Program [Table 3.1.0-1]

Definition of target	Target value	Target year	Explanations of target
SUPPLIER MANAGEMENT			
Increase in evaluation coverage of strategic suppliers	100% Reference year: 2013*	2017	Strategic suppliers for Bayer are those with a major influence on business in terms of procurement spend, sales and long-term collaboration prospects (3–5 years). Sustainability performance is evaluated in assessments and audits.
Increase in evaluation coverage of potential high-risk suppliers with significant Bayer spend	100% Reference year: 2013*	2020	Risk definition is based on a country- and material-based approach. We define significant procurement spend as >€1 million p.a.
Development and establishment of a new sustainability standard for our supply base		2020	The sustainability standard for our suppliers is to be driven forward in tandem with relevant industry initiatives. We are currently working with the "Together for Sustainability" initiative and the Pharmaceutical Supply Chain Initiative. Among other objectives, the goal is to standardize and share sustainability assessments of suppliers in the same industry.
RESOURCE EFFICIENCY			
Improvement in Group-wide energy efficiency	+10% Reference year: 2012 Reference value: 3.50 MWh/t	2020	Energy efficiency at Bayer is defined as the quotient of energy consumption in MWh per t manufactured sales volume.
Reduction in Group-wide specific greenhouse gas emissions	–20% Reference year: 2012 Reference value: 0.98 t CO_2/t	2020	Specific greenhouse gas emissions: measured in CO_2 equivalents per t manufactured sales volume
Establishment of a water management system at all sites in water-scarce areas	100%	2017	We define water management as part of environmental management systems as specified in ISO 14001, for example. We use the WBCSD Global Water Tool™ to define water-scarce areas and differentiate activity levels and local targets.
SAFETY			
Reduction in occupational safety incident rate among the Bayer workforce	–35% Reference year: 2012 Reference value: RIR of 0.49	2020	The basis is the number of injuries with and without lost workdays per 200,000 working hours, summarized as RIR (Recordable Incident Rate). Until the end of 2015, we will continue reporting on our success in achieving our LTRIR (Lost Time Recordable Incident Rate) target, which covers only occupational injuries with lost workdays per 200,000 working hours. The 2015 target is an LTRIR of 0.21.
Reduction in transport incidents	–30% Reference year: 2012 Reference value: 6	2020	Transport incidents relate to both our own transports and those we commission and pay third parties to perform on our behalf.
Reduction in process and plant safety incidents	–30% Reference year: 2012 Reference value: 0.38	2020	The key indicator is the number of incidents in which chemicals leak from their primary container, such as pipelines, pumps, tanks or drums, designated as LoPC (Loss of Primary Containment). We use the associated rate (LoPC Incident Rate) to determine the number of LoPC incidents per 200,000 working hours in areas relevant to plant safety.

New Non-Financial Target Program [Table 3.1.0-1 (continued)]

Definition of target	Target value	Target year	Explanations of target
PRODUCT STEWARDSHIP			
Completion of assessment of hazard potential for substances used in quantities exceeding one metric ton p.a.	>99% Reference year: 2013*	2020	This globally harmonized Bayer standard also covers assessment of such substances that are not subject to the REACH Regulation (No. 1907/2006). If no relevant datasets are generated within the scope of REACH, substance information and the ability to provide data on key substance properties are to be determined to ensure and document responsible handling of the substances (including substance characteristics, purity, intended use, toxicological data).
COMPLIANCE			
Conducting of precautionary risk assessments in all three subgroups	100%	2015	Risk assessments are based on the integrated compliance management method developed by Ernst & Young.
From 2015 compliance training for all Bayer managerial staff	> 99%	annually	Managers will participate in specific training courses depending on the risk area.
EMPLOYEES			
Continuous increase in employee engagement (determined using an employee survey)	Current reference year: 2012 Current reference value: 85%	every two years	We measure employee engagement in line with the Towers Watson engagement system. Engagement looks at how strongly an employee identifies with/feels attached to his/her company by supporting corporate values and objectives, for example.
Increase in the proportion of women in senior management	30% Reference year: 2010 Reference value: 21%	2015	Senior managers are managers in the five highest management grade levels.
Increase in the proportion of senior managers who do not come from the E.U., the United States or Canada	25% Reference year: 2013*	2015	Senior managers are managers in the five highest management grade levels.

* reference value will be specified in 2014; calculation of values for 2013 not yet complete

Targets 2015*: Development of Targets since the Start of the Program and Final Documentation [Table 3.1.0-2]

	2010 (Start)	2011	2012	2013	Final documentation
MANAGEMENT & CORPORATE GOVERNANCE					
Compliance Extend compliance training to 100% of all Bayer managers	61% of all Bayer managers	90% of all Bayer managers	From 2012 focus on new Bayer managers; >90% of all Bayer managers trained	Continued focus on new Bayer managers; >90% of all Bayer managers trained	From 2012 the focus was on new Bayer managers to continually increase the coverage rate and come closer to the target. We are extending the previous target as part of the new target program.
Supplier Management Inform all suppliers with purchase-order-relevant volumes about Bayer Supplier Code of Conduct	Launch of the Supplier Code of Conduct at the end of 2009 – gradual integration into all electronic ordering systems	As a fixed element of our supplier selection and evaluation process, the Supplier Code of Conduct is legally binding and integrated into all electronic ordering systems and contracts throughout the Group.	As a fixed element of our supplier selection and evaluation process, the Supplier Code of Conduct is legally binding and integrated into all electronic ordering systems and contracts throughout the Group.	As a fixed element of our supplier selection and evaluation process, the Supplier Code of Conduct is legally binding and integrated into all electronic ordering systems and contracts throughout the Group.	Target achieved. The Bayer Supplier Code of Conduct is an established part of the supplier selection and evaluation process and is contractually integrated into electronic ordering systems and agreements throughout the Group.
Assess the sustainability performance of suppliers representing ≥75% of the total procurement volume and ≥75% of the procurement volume from risk areas	Approx. 50% coverage of the procurement volume in risk countries, proportion of total procurement volume not yet assessed completely at this stage	25% of the total procurement volume and 56% of the procurement volume from risk areas covered	Focus on process quality and efficiency. Nonetheless, approx. 25% of the total procurement volume and a good 50% of the procurement volume from risk areas are covered.	34% of the total procurement volume and 51% of the procurement volume from risk areas are covered.	Checking of suppliers' sustainability performance has been expanded considerably in the last few years. The "Together for Sustainability" initiative and the Pharmaceutical Supply Chain Initiative have contributed to this. The lower coverage in risk areas in 2013 compared to previous years is explained by the increased procurement from non-OECD countries, resulting in a changed ratio in the database. These targets are being incorporated into the new target program in a slightly modified form, and the target achievement level increased.
Annually audit the sustainability performance of at least 10% of the suppliers from risk areas or at least 15 suppliers	Initial pilot audits	15 suppliers	17 suppliers	41 suppliers	Target achieved. The number of audits has risen continuously in the last few years.

Targets 2015*: Development of Targets since the Start of the Program and Final Documentation [Table 3.1.0-2 (continued)]

	2010 (Start)	2011	2012	2013	Final documentation
INNOVATION & PRODUCT STEWARDSHIP					
Research & Development Maintain or increase R&D spending in relation to sales	€3 billion (8.7%)	€2.9 billion (8.0%)	€3.0 billion (7.6%)	€3.2 billion (7.9%)	The level of R&D spending was maintained at around the same level in the evaluation period. This target is being continued with an absolute target value.
Product Stewardship Roll out Global Product Strategy (GPS) in another 10 countries with different national languages	Implementation started	In five countries in the relevant national languages	In 10 countries in three other languages (via new "Product Safety First" website)	Target already achieved in 2012	Target achieved. GPS is available via the "Product Safety First" website in the E.U. and 14 other countries and in seven languages.
EMPLOYEES					
Diversity Increase the proportion of women in senior management to approaching 30%	21%	22%	23%	25%	Positive upward trend in the proportion of women in senior management. The target will remain part of the new target program until 2015.
Occupational Safety Reduce the number of occupational injuries with lost workdays to ≤ 0.21 LTRIR**	0.34	0.31	0.27	0.26	The target has been raised once again and remains part of the new target program.

Targets 2015*: Development of Targets since the Start of the Program and Final Documentation [Table 3.1.0-2 (continued)]

	2010 (Start)	2011	2012	2013	Final documentation
ECOLOGY					
Climate Protection Reduce specific greenhouse gas emissions*** in the Group by 35% (direct and indirect emissions in relation to manufactured sales volume in t) between 2005 and 2020; target based on figures defined in 2005: 0.79 t CO_2 equivalents per t manufactured sales volume	1.09 t CO_2e per t manufactured sales volume	0.95 t CO_2e per t manufactured sales volume	0.98 t CO_2e per t manufactured sales volume	1.00 t CO_2e per t manufactured sales volume	In 2013 greenhouse gas emissions Group-wide remained at around the same level as in the previous years at approx. one t CO_2e per t manufactured sales volume. We are incorporating the reduction target into the new target program.
Emissions Reduce other relevant emissions: ozone depleting substances (ODS) –70%, ODS target based on 2010: 6.2 t; volatile organic compounds (VOC) –50%; VOC target based on 2010: 0.1218 kg/t manufactured sales volume	ODS: 20.77 t; VOC: 0.2436 kg/t	ODS: 16.32 t; VOC: 0.2457 kg/t	ODS: 16.28 t; VOC: 0.2316 kg/t	ODS: 15.65 t; VOC: 0.2047 kg/t	Reductions were achieved in both categories in the last few reporting years. Since 2010 ODS have fallen by almost 25% and VOC by around 16%. The ODS/VOC targets are not being continued, but the relevant figures will continue to be reported.
Waste Reduce specific hazardous waste from production to 2.5% in relation to manufactured sales volume	3.12%	3.23%	3.54%	3.77%	This target is not being achieved. Due to changes in process steps, mainly in the CropScience subgroup, additional “hazardous” production waste is being generated, for example during synthesis of active ingredients in the form of by-products that do not allow further processing or use. Reducing hazardous production waste remains a key factor for our product and process development. We will be reporting further on the relevant quantities. Because of a change in essential relevance, the previous target will no longer be part of the new target program.

Targets 2015*: Development of Targets since the Start of the Program and Final Documentation [Table 3.1.0-2 (continued)]

	2010 (Start)	2011	2012	2013	Final documentation
Process and Plant Safety					
Implement the Bayer-wide initiative to increase process and plant safety; systematic process and plant safety training for approx. 26,000 employees worldwide by the end of 2012	Start of implementation of initiative; staging of the first Process and Plant Safety Symposium with 100 Bayer experts from 14 countries	Pilot training programs at the sites in Wuppertal-Elberfeld, Germany (HealthCare), Hürth-Knapsack, Germany (CropScience) and Map Ta Phut, Thailand (MaterialScience); 3,700 employees trained; training materials developed in around 20 languages	26,000 employees trained; further development of the Group Regulation "Process and Plant Safety"	Further development of teaching materials for the long-term continuation of the training programs using both traditional and web-based training; anchoring of the training program in the HSEQ management systems of the subgroups	A large number of measures (training courses, symposia, Group regulations, standardized risk assessments etc.) raised awareness of process and plant safety worldwide. The target has been achieved. The initiative is being continued and remains part of our reporting on safety.
SOCIAL COMMITMENT					
Focus our global commitment further on scientific education, fostering talent, cutting-edge research, health care and, in Germany, additionally on recreational, youth and disabled sports	Analysis of global commitment in terms of our core business areas; review of funding programs to check support of business strategy	Further internationalization and alignment of scholarship awards to the company's mission; allocation of funds on an even greater multinational basis, focusing on core areas, and sponsoring programs that consistently support the business strategy	In the selection of projects, the focus was on those countries in which Bayer is represented and on issues that are of relevance to our subgroups and their areas of business.	Further concentration on countries in which Bayer is represented and on areas that are of relevance to the Group's business strategy	In the selection of projects, the focus was continuously on those countries in which Bayer is represented and on issues that are of relevance to our subgroups and their areas of business. This target is not part of the new target program. We will be reporting further on sponsorship spending and fields.

* unless indicated otherwise
** LTRIR = Lost Time Recordable Incident Rate
*** Specific Group emissions are calculated from the total volume of direct and indirect emissions of the subgroups, including from the vehicle fleet, divided by the manufactured sales volume of the three subgroups. Quantities attributable to the supply of energy to external companies are deducted from the direct and indirect emissions. At MaterialScience the by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the production volume as they will occur in much smaller amounts in the future, thanks to measures aimed at enhancing energy efficiency. Trade products are also not included.

1.4 Internal Management System

The economic planning and steering for the business units is carried out within a framework laid down by the Board of Management that is refined during the strategic planning process. Operational planning then translates this framework into specific, measurable targets. Continuous monitoring of business developments complements the planning and management process, and key management and performance indicators are regularly updated. This process also involves tracking the implementation of the strategic objectives and adopting countermeasures in the event of deviations from the budget.

KEY INDICATORS

One of the prime objectives of the Bayer Group is to steadily increase enterprise value. We use the following steering parameters to plan, steer and monitor the development of our business:

The key performance indicators at the strategic level are cash value added (CVA), which is a value-based steering parameter, and cash flow return on investment (CFROI). These indicators support management in its decision-making, especially in the areas of strategic portfolio optimization and the allocation of resources for acquisitions and capital expenditures. (See Chapter 16.4 "Value Management" for further details.)

See Chapter 16.4

The principal economic steering parameters within the Bayer Group at the operational level are sales and earnings figures. With regard to earnings, special attention is paid to EBITDA (earnings before financial result, taxes, depreciation and amortization) before special items. The EBITDA margin before special items, which is the ratio of EBITDA before special items to sales, serves as a relative indicator for the internal and external comparison of operational earning power. (See Chapter 16.2 "Calculation of EBIT(DA) Before Special Items" for further details.)

See Chapter 16.2

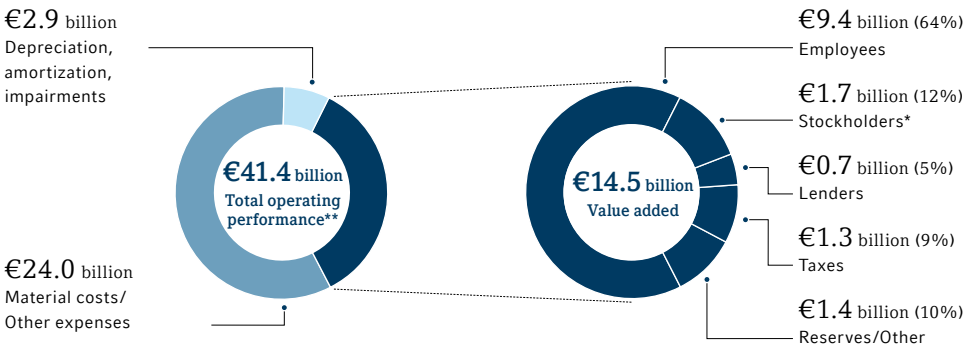
Targets and performance indicators are defined and established in areas such as supplier management, safety and product stewardship to align the Group toward sustainability. Working closely with the subgroups, Bayer AG has implemented management systems to steer the Group's sustainable development.

1.5 Value Creation

The value added statement shows Bayer's contribution to public and private incomes and is a measure of the value the company's business activities create for its stakeholders. We define value added as the company's total operating performance in the previous fiscal year less the costs of procured and consumed goods and services, depreciation and amortization.

The total operating performance of the Bayer Group in 2013 was €41.4 billion. Value added increased by 9% to €14.5 billion. Of the value added, €9.4 billion (64%) was distributed to employees, €1.7 billion (12%) to stockholders, €0.7 billion (5%) to lenders and €1.3 billion (9%) to governments. The remainder was allocated to reserves.

Bayer Group Value Added [Graphic 3.1.3]



* Bayer AG dividend proposal for 2013
** total operating performance = sales + other operating income + financial income/equity-method income (loss)

In addition to direct cash flows, the company creates value for its stakeholders in various ways, focusing on innovative products and solutions that add value to our core businesses. We operate production sites throughout the world, invest locally in research and development, work with international and local suppliers and contribute to the economic development of our target markets. As an employer, we provide jobs in industrialized, emerging and developing economies and create purchasing power through the salaries we pay. We also support public infrastructure through regional taxes.

1.6 Corporate Environment

Bayer's business activities are impacted by economic and social conditions. At the same time, Bayer contributes to shaping these conditions.

ECONOMIC ENVIRONMENT

Global economic growth in 2013 was at the previous year's level. The crisis in a number of European countries continued to hamper development, especially as a result of ongoing national budget consolidation and high unemployment. However, the trend was positive – over the course of the year, the European economy grew slightly again after several quarters of recession. Economic output continued to increase in the United States, albeit at a slower pace than in the previous year. The biggest contribution to global growth again came from the emerging markets. The global economy also received a positive stimulus from the highly expansionary monetary policy that continued in the industrialized countries.

Economic Environment [Table 3.1.1]

	Growth* in 2012	Growth* in 2013
World	+2.6%	+2.5%
European Union	–0.3%**	+0.1%
of which Germany	+0.7%	+0.4%
United States	+2.8%**	+1.9%
Emerging markets***	+4.8%**	+4.7%

* real GDP growth, source: Global Insight; source for Germany: Federal Statistical Office
** revised
*** including about 50 countries defined by Global Insight as emerging markets in line with the World Bank as of February 2014

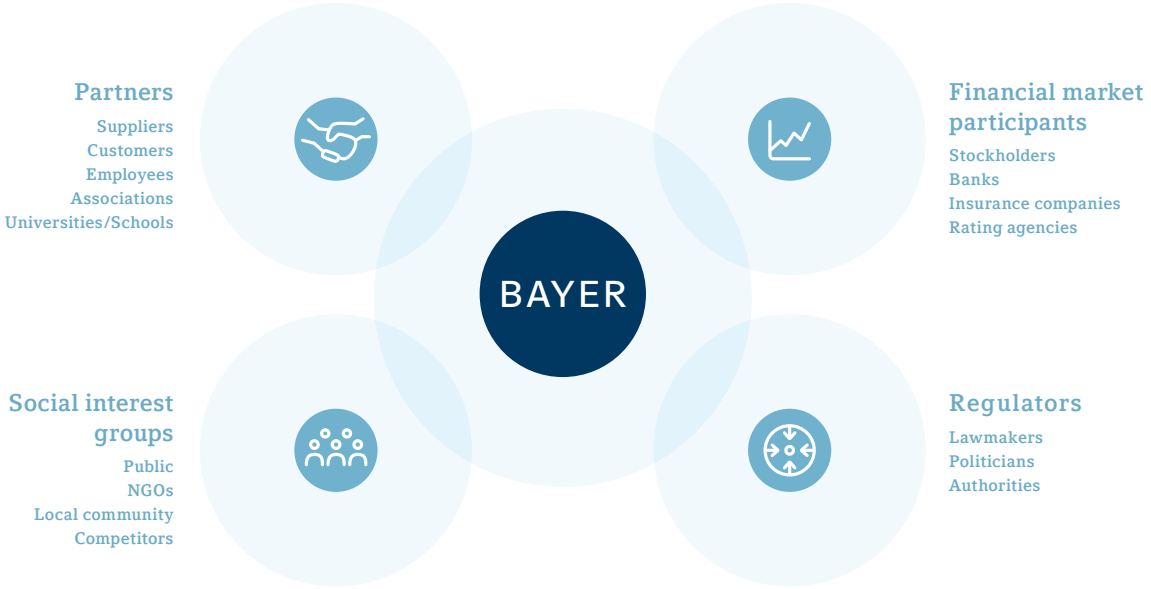
See Chapter 4

See Chapter 4 for more information on the business environments of our subgroups.

SOCIAL ENVIRONMENT

As a commercial enterprise, Bayer is part of society, and the company's business activity is therefore closely linked to the social environment. The influence of stakeholders on our business activity has steadily increased in recent years. Their expectations regarding sustainable development affect public acceptance of the company and thus our commercial success. We take the wide-ranging requirements of our stakeholders seriously and consider them wherever possible in our business activities. Evaluating these expectations and requirements provides significant impetus for the continued development of our activities, our risk management and our reporting. At the same time, open dialogue with our stakeholders gives us an opportunity to demonstrate the value that our products and services hold for society. This is of growing importance for the success of our business model.

Stakeholder Dialogue at Bayer: Our Most Important Interest Groups [Graphic 3.1.4]



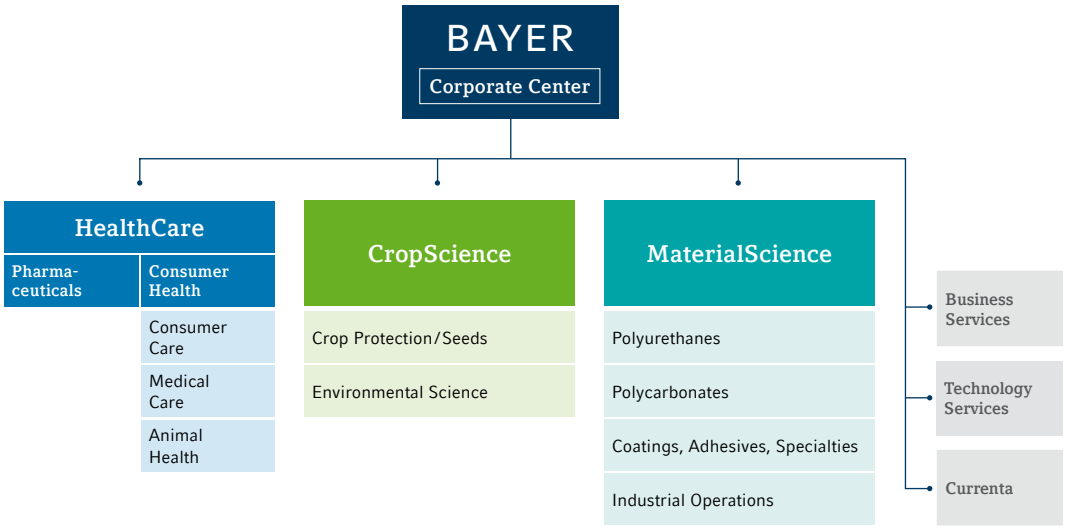
Read more about Bayer's commitment to its stakeholders in Chapter 6 "Sustainability."

See Chapter 6

2. Corporate Structure

Bayer AG, headquartered in Leverkusen, Germany, is the strategic management holding company for the Bayer Group. Business operations are conducted by the HealthCare, CropScience and MaterialScience subgroups, supported by our three service companies.

Bayer Group Structure [Graphic 3.2.1]

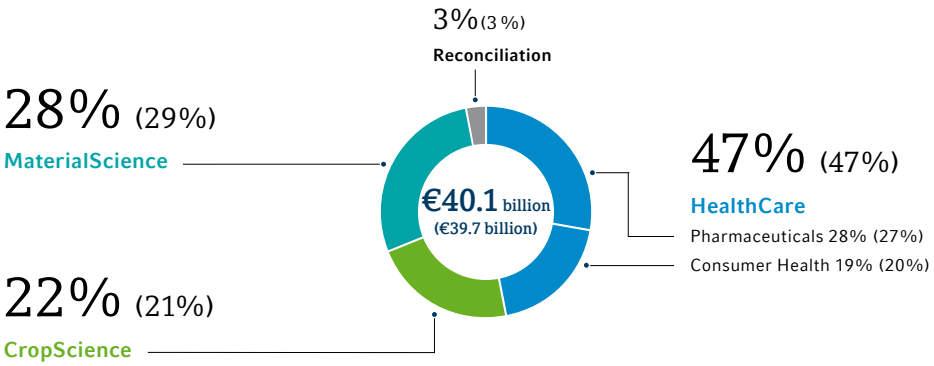


The globally operating **HealthCare** subgroup is divided into two reporting segments: Pharmaceuticals and Consumer Health. The **Pharmaceuticals** segment focuses on prescription products, especially for women's healthcare and cardiology and also on specialty therapeutics in the fields of oncology, hematology and ophthalmology. Our **Consumer Health** segment includes the Consumer Care, Medical Care and Animal Health divisions. The main focus of the Consumer Care Division is on non-prescription medicines, dietary supplements and dermatology products. The Medical Care Division comprises the Diabetes Care business unit, which markets blood glucose monitoring systems, and the Radiology & Interventional business unit, which offers contrast-enhanced diagnostic imaging equipment along with the necessary contrast agents, as well as mechanical systems for treating constricted or blocked blood vessels. The products of the Animal Health Division are destined for use in farm and companion animals.

CropScience has businesses in seeds, crop protection and non-agricultural pest control. It is organized into two operating segments: Crop Protection/Seeds and Environmental Science. Crop Protection/Seeds markets a portfolio of high-value seeds and traits along with chemical and biological pest management solutions, at the same time providing extensive customer service to the agriculture industry. Environmental Science focuses on non-agricultural applications, with a broad portfolio of pest control products and services for areas ranging from the home and garden sector to forestry.

MaterialScience develops, manufactures and markets high-tech polymer materials including polyurethane raw materials, polycarbonates, coating and adhesive raw materials and functional films. This subgroup also manufactures and markets selected inorganic basic chemicals. MaterialScience is organized into the Polyurethanes, Polycarbonates, and Coatings, Adhesives, Specialties business units, and the Industrial Operations area.

Share of Sales by Segment 2013 [Graphic 3.2.2]



2012 in parentheses

Our subgroups are supported by the Business Services, Technology Services and Currenta service companies, which are reported in the reconciliation under "All Other Segments." The reconciliation also includes the Corporate Center and consolidation effects.

Key Data by Subgroup and Segment [Table 3.2.1]

	Sales		EBIT		EBITDA before special items*	
	Full Year 2012	Full Year 2013	Full Year 2012	Full Year 2013	Full Year 2012	Full Year 2013
	€ million	€ million	€ million	€ million	€ million	€ million
HealthCare	**18,604**	**18,924**	**2,205**	**3,260**	**5,119**	**5,334**
Pharmaceuticals	10,798	11,188	1,104	2,031	3,232	3,490
Consumer Health	7,806	7,736	1,101	1,229	1,887	1,844
CropScience	**8,383**	**8,819**	**1,556**	**1,729**	**2,025**	**2,248**
MaterialScience	**11,491**	**11,238**	**581**	**435**	**1,263**	**1,072**
Reconciliation	**1,263**	**1,176**	**(414)**	**(490)**	**(127)**	**(253)**
Group	**39,741**	**40,157**	**3,928**	**4,934**	**8,280**	**8,401**

2012 figures restated
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."

3. Strategies of the Subgroups

See Chapter 1.2

The subgroups' strategies are outlined below (for the Bayer Group strategy, see Chapter 1.2).

HEALTHCARE

The health care sector worldwide is in a state of flux driven by the rise in life expectancy, growing demand for health care products particularly in the emerging markets, greater patient and consumer influence on health-related decisions, and increasing insistence that the health care industry demonstrate the value added by new therapies. In addition, health systems everywhere need to find ways to curb rising costs while safeguarding and improving health care quality and access.

Our strategy in this environment is aimed at achieving above-average, profitable and sustainable growth. To this end, our focus is on innovation and on further strengthening our position in the Emerging Markets.

In our largest segment in terms of sales – **Pharmaceuticals** – we aim to become a leader in cardiovascular health and defend our market position in women's healthcare. In the area of specialty therapeutics, we aim to strengthen or defend our respective market positions. To achieve our growth targets, we are focusing particularly on Xarelto™, Eylea™, Stivarga™, Xofigo™ and riociguat (approved in the United States and Japan under the trademark Adempas™), whose market introduction is continuing in additional countries. We plan to steadily expand the indications for these medicines through comprehensive study programs and make them available to additional patient groups.

Innovative products for profitable and sustainable growth

We intend to step up our investment in research and development. First, for example, we plan to drive forward the development of five drug candidates in cardiology, oncology and gynecology. We are also conducting research in the therapeutic area of hematology. Complementing this work is common mechanism research in areas such as ophthalmology and inflammation.

In addition, we are selectively expanding and supplementing our product portfolio through licensing agreements and acquisitions. In June 2013, we acquired the U.S. company Conceptus, Inc., whose product Essure™ rounds out our contraception portfolio with the only approved non-surgical permanent birth control method.

The focus on certain therapeutic areas is supplemented by tailored measures in key markets such as the United States, Japan, Germany, Brazil and China.

We are developing concepts to facilitate access to our products, especially in developing and emerging countries, as part of our "Access to Medicine" (ATM) strategy.

ONLINE ANNEX: 3-3-BHC-1

In the area of hormonal contraception, we collaborate in family planning programs with international development partners. We support the World Health Organization (WHO) in the fight against neglected tropical diseases and tuberculosis and also offer patient access programs in some markets where large segments of the population cannot currently benefit from innovative medicines.

TARGETED FAMILY PLANNING

As the world market leader in oral contraceptives, the Pharmaceuticals Division has many years of expertise in the field of hormonal contraception. We have been supporting family planning programs of national and international organizations for 50 years. Our support represents a significant contribution toward achieving the United Nations Millennium Development Goals, including that of improving maternal health. Self-determined family planning also supports the struggle against poverty and strengthens women's role in society. We provide a broad range of hormonal contraception methods for family planning programs: apart from oral contraceptives, we offer monthly and three-monthly injections and the contraceptive implant Jadelle™, a reversible long-term contraceptive method that is effective for up to five years.
In 2013 we provided the following quantities of oral contraceptives, injections and implants to family planning programs in developing countries. CYP* (couple-years of protection) is the number of couples for whom one year of contraception is provided.

- Jadelle™: 3 million packs (10.5 million CYPs)
- oral contraceptives: 130 million cycle packs (8.7 million CYPs)
- injections: 9.2 million (1.7 million CYPs)

The total of 20.9 million CYPs represents a 10% increase over the previous year.

THE BAYER-USAID CONTRACEPTIVE SECURITY INITIATIVE

At the same time, we are looking for new ways to improve the availability of our contraceptives. In 2009, for example, we launched the Contraceptive Security Initiative (CSI) jointly with USAID and introduced an oral contraceptive, Microgynon™ Fe, to the African market at a reduced price. The CSI aims to complement subsidized aid programs by making oral contraceptives available mainly to middle-class couples. The supply price is adjusted such that pharmacies can offer the products at prices that match the financial resources of middle-income women and couples. At the same time, we cover our costs and can thus provide a continuous supply beyond the five-year term of the agreement. As local wholesalers and pharmacists benefit from sales, CSI has the effect of generating national income and thus further reducing dependence on charitable support. Since December 2010 the initiative has been successively introduced in Ethiopia, Uganda, Tanzania, Rwanda, Ghana, Kenya and Malawi; four more countries are scheduled to join the program by the end of 2014.

THE JADELLE™ ACCESS PROGRAM

Since January 2013, a partnership between HealthCare and the U.S.-based Bill & Melinda Gates Foundation has been improving access to our contraceptive implant Jadelle™. Under this agreement, we have reduced the price for our Jadelle™ implant, which was prequalified by the WHO in September 2009, by more than half, and up to 27 million women in the world's poorest countries can gain access to this efective, long-acting reversible contraceptive by 2018. In 2013 the program won the CIPS (Chartered Institute of Purchasing & Supply) Annual Award for "Best International Procurement Project of the Year."

* All CYPs are determined using the MSI Impact Calculator (Version 1.2) and the calculation basis of the U.S. Agency for International Development (USAID). Example for oral contraceptives: 1 CYP = approx. 15 cycle packs

TACKLING NEGLECTED TROPICAL DISEASES

Many diseases that primarily affect the poorest sections of the population can only be tackled through a substantial international effort. In 2012 13 pharmaceutical companies – including Bayer HealthCare – therefore joined with the governments of the United States, the United Kingdom and the United Arab Emirates, the Bill & Melinda Gates Foundation, the World Bank and several global health organizations to launch the largest ever campaign designed to combat neglected tropical diseases. The goal of the "London Declaration on Neglected Tropical Diseases" is to contain or, if possible, eliminate 10 of these tropical diseases by 2020. The various companies' commitments reflect their respective areas of expertise. For more than 10 years we have supported the WHO by providing medicines to treat African sleeping sickness and Chagas' disease free of charge.

We are providing the WHO with up to one million tablets of Lampit™ (active ingredient: nifurtimox 120 mg) per year, along with US$300,000 for logistics and distribution, to combat **Chagas' disease.** We are also currently developing a smaller nifurtimox tablet with a lower active ingredient content (30 mg) to simplify the treatment of children with Chagas' disease.

Since 2002 we have supported the WHO in the fight against **African sleeping sickness** – also known as human African trypanosomiasis (HAT) – by providing 10,000 ampoules of Germanin™ per year free of charge to combat a form of the disease that mainly occurs in eastern and southern Africa. West African sleeping sickness, the most widespread form, can be treated since 2009 with a combination therapy (NECT) using two active ingredients – nifurtimox from Bayer and eflornithine from Sanofi. Following completion of the clinical studies, the new treatment was included in the WHO List of Essential Medicines. Bayer has been supplying the WHO with 400,000 nifurtimox tablets per year for the combination therapy since 2009. The rate of new infections has declined since then.

Currently some 70% of all registered cases of HAT worldwide occur in the Democratic Republic of the Congo. In 2013 we therefore increased our commitment to the fight against African sleeping sickness, setting up a project for an initial term of three years during which we will provide €100,000 per year for the mobile intervention teams deployed by the WHO in DR Congo to tackle local outbreaks. With the help of these teams, people in remote areas are gaining better access to diagnosis and treatment. This also represents a major step toward achieving the target set by the London Declaration on Neglected Tropical Diseases of eradicating African sleeping sickness by 2020.

NEW TREATMENTS FOR TUBERCULOSIS

The current six- to eight-month standard therapy for tuberculosis (TB) is based on four drugs that were discovered more than 30 years ago and often have to be administered under the direct supervision of health care professionals. The long period makes consistent treatment more difficult to achieve, and the number of resistant strains of bacteria is therefore increasing. The available medicines are not effective against the multi-drug-resistant TB (MDR-TB) caused by resistant bacteria. As part of the WHO's STOP-TB partnership, we have therefore provided our Avalox™/Avelox™ (active ingredient: moxifloxacin) antibiotic at a reduced price for an emergency aid program to combat MDR-TB since 2011.

16 countries have joined the program since December 2011. A total of around 1.3 million moxifloxacin tablets were supplied to six countries (China, Georgia, Armenia, Haiti, Russia and Indonesia) in 2013. This quantity of the drug enables the treatment of a good 2,450 MDR-TB patients for the minimum treatment period of 18 months. Since 2005 we have also been collaborating with the U.S.-based Global Alliance for TB Drug Development (TB Alliance) on a broadly based clinical trial program investigating the efficacy and tolerability of moxifloxacin as part of a combination therapy to shorten the treatment period for pulmonary tuberculosis. The results of this trial are currently being evaluated. We have committed to file for registration of moxifloxacin to treat TB and provide the drug at a reduced price if the trial outcome is positive.

PROGRAMS FOR IMPROVED DRUG ACCESS

In certain countries where large segments of the population do not have access to innovative medicines – such as India and China, but also in the United States – patient access programs are established for selected products. These programs, jointly run with partners from local health authorities and non-governmental organizations, help to fill existing treatment gaps by making available innovative products for cancer treatments, for instance, or therapeutic options for patients with chronic diseases such as multiple sclerosis or hemophilia, for example. Some of the programs go beyond the supply of medicines and provide patient and family support, medical personnel and access to the necessary diagnostic facilities. The programs are developed on a local or regional basis to optimally meet specific patient needs.

Our **Consumer Health** segment includes non-prescription medicines, dermatology products, blood glucose meters, medical devices and contrast agents, as well as pharmaceutical and grooming products for livestock and companion animals.

The goal of the Consumer Care Division is to become the market leader for over-the-counter (OTC) medicines. We aim to achieve this mainly by exploiting the organic growth potential of proven brands such as Aspirin™, Aleve™, Bepanthen™/Bepanthol™ and Canesten™. In addition, we are investing heavily in the Emerging Markets of Eastern Europe, Latin America and Asia. We are also utilizing external growth opportunities in the form of acquisitions or product inlicensing, an example being the acquisition in July 2013 of Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany, a company specializing in non-prescription herbal medicines.

In the Medical Care Division, we continue to focus on our competitive positions in the core areas of diabetes management, contrast agents and medical devices. In the Diabetes Care business unit, we are expanding our range of products and services by developing new blood glucose monitoring systems to help people with diabetes better manage the disease. In the Radiology & Interventional unit, our core focus is in the areas of contrast agents, contrast agent injection systems, and thrombectomy and atherectomy systems. We are also developing new software and IT solutions to optimize contrast agent and radiation dosage management.

The Animal Health Division is among the world's major producers of veterinary pharmaceuticals. We aim to strengthen our position through organic growth, acquisitions and inlicensing.

CROPSCIENCE

Sustainable agriculture, higher crop yields and improved crop quality are becoming increasingly important in view of the need to ensure adequate food supplies for a growing world population despite the limited amount of arable land and the increased demand for animal feed and renewable raw materials.

CropScience aligns its corporate planning to long-term trends in the markets for agricultural products.

CropScience strategy based on four core elements

The subgroup's strategy for future growth is built on four key elements: enhancing the Crop Protection and Environmental Science portfolio, increasing customer centricity along the entire value chain, leading the way in the area of innovation, and expanding the Seeds business.

We aim to enhance our **Crop Protection** and **Environmental Science portfolios** by adding new and improved products, concentrating on core brands and offering integrated solutions in major crops. We have a significant technology platform for both chemical and biological crop protection, enabling us to offer customers complete solutions from seed treatment through to the harvest. We are investing substantially in our production capacities to meet rising demand for our products.

Another major part of our strategy is to strengthen **customer centricity along the entire value chain** and optimize distribution management. We are also steadily expanding the successful business model of food chain partnerships in the form of collaborations with food processors and retailers. This supports our objective of sustainably increasing our customers' productivity. In these partnership projects, CropScience works with all participants in the food chain to safeguard and increase yields and improve the quality of harvested produce.

To **lead the way in innovation**, we aim to build on our expertise in the integration of seed technology and chemical and biological crop protection so that we can develop holistic solutions.

Another key element in our strategy is the **expansion of our Seeds business**. We plan to further strengthen our positions in our established crops – cotton, oilseed rape/canola, rice and vegetables – and plan to build significant positions in soybeans and wheat. For example, we intend to gain long-term access to high-quality breeding material through acquisitions, inlicensing and partnerships and to steadily expand our existing breeding expertise.

MATERIALSCIENCE

MaterialScience helps to address global challenges

MaterialScience, with its high-tech polymer materials and application solutions, is helping to address the challenges posed by population growth, the depletion of fossil resources, climate change, greater mobility and increasing urbanization. We are continuing to develop our product portfolio, which mainly comprises components for polyurethane foams, high-tech polycarbonate plastics and raw materials for coatings and adhesives. In addition to product innovations, we are working on new or improved, eco-friendly production processes that also bring cost benefits for ourselves and our partners.

Against this background, MaterialScience is targeting long-term, profitable growth. We aim to sustainably earn a premium on our capital costs and thus help to increase corporate value. We intend to safeguard or expand our leading competitive positions in world markets in a challenging environment. This applies particularly to emerging economies such as China, India, Brazil and Russia.

We take sustainability principles fully into account in our business processes. We want our products to benefit both the environment and society. We aim to continue our steady investment in process technology in order to increase safety, mitigate environmental impacts and raise efficiency.

In the **Polyurethanes (PUR) business unit**, we intend to safeguard our strong position on the world market as an integrated raw material and systems supplier, mainly for rigid and flexible foams. Demand is expected to continue increasing in the coming years. The uses for polyurethane foams include insulations for buildings and refrigerated appliances. These materials thus help to reduce energy consumption and greenhouse gas emissions. They also ensure added comfort in many areas of everyday life. In line with our objective of achieving cost leadership, we are concentrating on further increasing efficiency at our production facilities, partly through the use of the latest process technologies. At our site in Dormagen, Germany, for example, we are erecting a large-scale, state-of-the-art facility for toluene diisocyanate (TDI), a key precursor for flexible foams. In the rigid foam sector, we are further expanding our capacities in Shanghai, China, for the precursor diphenylmethane diisocyanate (MDI) to service the demand in Asia.

The global market for polycarbonates is focused on Asia, which accounts for more than 60%. The **Polycarbonates (PCS) business unit** has several large production facilities for this high-tech plastic in the region. To safeguard our position in the world market, we plan to gradually increase production capacity in Shanghai. We also aim to further improve the efficiency of our plants worldwide. This particularly lightweight and stable polymer material is used in the automotive and consumer electronics industries and other sectors due to its versatility.

The focus of the **Coatings, Adhesives, Specialties (CAS) business unit** is on the production of polyurethane-based raw materials for coatings and adhesives. Here we aim to maintain our excellent position in our core business and open up new, related growth areas. Our chemical expertise and years of experience in formulation development make us a preferred development partner and supplier of customized solutions for many new coating and adhesive applications that offer not only attractive design options, but also provide effective mechanical protection.

4. Economic Environments of the Subgroups

The economic environments in which the subgroups operate are outlined below. (The economic environment for the Bayer Group as a whole is described in Chapter 1.6 "Corporate Environment.")

See Chapter 1.6

Economic Environments of the Subgroups [Table 3.4.1]

	Growth* in 2012	Growth* in 2013
HealthCare		
Pharmaceuticals	+ 3%	+ 3%
Consumer Care	+ 4%	+ 5%
Medical Care	0%**	−2%
Animal Health	+ 4%	+ 3%
CropScience		
Seed and crop protection market	>10%	≥5%
MaterialScience (Main customer industries)		
Automotive industry	+ 6%	+ 3%
Construction industry	+ 2%	+ 3%
Electrical/electronics industry	+ 3%	+ 4%
Furniture market	+ 5%	+ 3%

* Bayer's estimate, excluding pharmaceuticals market, source: IMS Health. IMS Market Prognosis. Copyright 2014. All rights reserved, currency-adjusted; 2013 data provisional
** revised
as of Febrary 2014

HEALTHCARE

Growth in the **pharmaceuticals market** was based mainly on increased demand in the emerging economies. In the United States and a number of European countries, growth continued to be impeded by restrictive health policies.

The **consumer care market** expanded somewhat faster than in the previous year, mainly due to continuing high demand for non-prescription medicines in the emerging markets. A strong cold season in the first half of 2013 facilitated market growth in North America and Europe. The slight downturn in the **medical care market** was due to a weaker diabetes care market, while the market for contrast agents and medical equipment (Radiology & Interventional business unit) was flat year on year. The **animal health market** expanded at a slightly slower pace than in the previous year.

CROPSCIENCE

The **seed and crop protection market** continued its dynamic development in 2013. Farmers benefited from a positive market environment due to persistently low inventory levels for most agricultural commodities. This in turn led to strong demand for high-value seeds and for crop protection products.

Growth in the global seed and crop protection market last year was again driven by Latin America, particularly Brazil and Argentina. In North America, we also registered above-average growth rates in 2013 despite persisently cold weather and a drought at the beginning of the year. In Asia/Pacific, too, the positive overall market trend continued in 2013 with slightly higher growth than in the previous year. The Chinese and Indian crop protection markets displayed the strongest growth momentum in the region. In Europe, on the other hand, growth rates were below the world market average, mainly as a result of the late start to the season and adverse weather conditions in northern Europe. Growth rates were moderate in the Mediterranean countries but higher than average in Eastern Europe.

MATERIALSCIENCE

Global development in the **principal customer industries** of importance to MaterialScience (automotive, construction, electrical/electronics and furniture) was at a generally low level in 2013 as expected due to the continuing economic weakness in the eurozone and the downturn in Asia.

The **automotive industry** registered considerably weaker global growth compared with the previous year. Volumes continued to decline in Europe as a result of ongoing weak demand in nearly all countries. Growth momentum also slowed in North America. The very dynamic trend continued in China, however, while growth in the other Asian countries slowed.

Growth in the global **construction sector** improved compared with the previous year. While construction investment in the United States showed signs of recovering and growth in the principal Asian countries remained stable, demand in Western Europe again declined.

The global **electrical/electronics industry** again posted robust growth in 2013. While the previous year's solid growth rates persisted in North America and Asia, slight growth was recorded in Europe (mainly driven by the Eastern European countries), following the downward trend in the prior year.

Global development of the **furniture industry** was weaker in 2013 than the year before. The pace of growth in Asia slowed due to weaker domestic and export demand. Austerity programs and consumer reticence in Europe caused the sector to shrink once again, though at a much slower rate than the year before.

5. Research, Development, Innovation

With strong and efficient research and development (R&D), a focus on growth areas and the Emerging Markets, and a national and international network of outstanding partners, we are creating the foundation for innovation and thus the company's future success. In 2013 a total of €3,190 million (2012: €3,013 million) was spent on research and development. This was equivalent to 7.9% (2012: 7.6%) of sales. The number of employees working in research and development worldwide was 13,700.

ONLINE ANNEX: 3-5-1

For our leading experts in research and development, we offer targeted career advancement opportunities through our Expert Career initiative. In addition, the 120-member Expert Club – headed by the member of the Board of Management responsible for research – promotes the sharing of best practices among scientific experts from different subgroups.

We also ensure that special contributions by individuals or employee groups are announced and honored. For example, we bestow research awards such as the Otto Bayer Medals, which are presented every two years to teams of scientists for outstanding achievements.

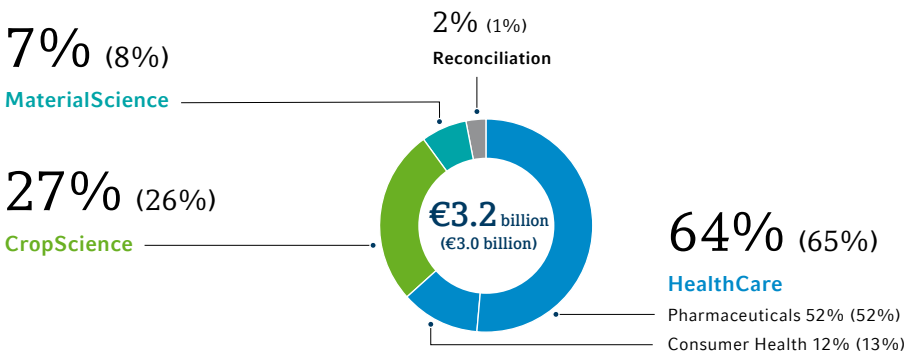
Employees use the Bayer Group's suggestion system, known as the Bayer Ideas Pool, mainly to propose improvements to methods or processes. In 2013 the employees once again displayed their commitment to the company by making numerous valuable suggestions for potential improvements. Altogether some 4,800 ideas were submitted to the Bayer Ideas Pool. Of these, 51% were implemented, resulting in savings totaling more than €4 million by year end from the proposals implemented in 2013. We paid out a total of over €1 million in special employee bonuses for the suggestions implemented.

Research collaborations with external partners from academia and industry form an integral part of our innovation strategy. These collaborations and alliances with leading universities, public research institutes and partner companies are supplemented by incubators, crowdsourcing and science hubs in Asia and the United States to tap into external innovative potential using the **open innovation** approach. Some of our collaborations are supported by public funding.

ONLINE ANNEX: 3-5-2

In Germany alone, Bayer participated in more than 100 publicly funded projects in 2013, receiving a total of about €8 million in grants. This is equivalent to roughly 0.3% of our annual R&D expenses.

Research and Development Expenses 2013 [Graphic 3.5.1]



2012 figures in parentheses

Reliable, global protection of intellectual property rights is essential for an innovation company like Bayer. At the end of 2013, we owned approximately 67,400 valid patent applications and patents worldwide relating to some 8,700 protected inventions.

ONLINE ANNEX: 3-5-3

The term of a patent is normally 20 years. Since it takes an average of 12 years to develop a new medicine, for example, only eight years of patent protection generally remain following the product's approval. In most cases it would be impossible to cover the substantial costs incurred in the research and development of innovative medicines or of new indications or dosage forms for existing drugs without patent protection. We are therefore committed to protecting both the international patent system and our own intellectual property worldwide. You can read more about this topic in our political positions: WWW.ANNUALREPORT2013.BAYER.COM/POLITICAL-POSITION-IP.

WWW.ANNUAL-REPORT2013.BAYER.COM/POLITICAL-POSITION-IP

To support the development of intellectual property rights (IPR) and copyright in China, Bayer sponsors the IPR chair at Tongji University in Shanghai. As well as arranging law studies for more than 100 students, the chair works with Bayer – supported by the Chinese Patent Office – to organize an annual IPR forum dealing with issues related to the protection of intellectual property.

STRENGTHENING RESEARCH IN THE LIFE SCIENCES

Bayer is the only global company simultaneously researching improvements in human, animal and plant health. Systematic and intensive collaboration among researchers from both Life Science subgroups is providing new impetus. In this context, researchers from HealthCare and CropScience are collaborating on projects involving central biological processes such as gene regulation or energy metabolism. The joint use of technology platforms is being expanded. These projects have been supported since 2012 by Bayer's internal "Life Sciences Fund" and are mostly implemented together with external partners.

HEALTHCARE

In 2013 we spent €2,040 million (2012: €1,955 million) for research and development in the Pharmaceuticals and Consumer Health segments. This amounted to 63.9% of R&D spending in the Bayer Group and was equivalent to 10.8% (2012: 10.5%) of HealthCare sales. At the end of 2013, some 7,800 employees of HealthCare were working in research and development.

Research and development expenses in the **Pharmaceuticals** segment amounted to €1,654 million (2012: €1,561 million), or 14.8% (2012: 14.5%) of segment sales. Drug discovery in the Pharmaceuticals segment focuses on the areas of cardiology, oncology, gynecological disorders and hematology. Complementing this work is common mechanism research in areas such as ophthalmology and inflammation. We conduct research activities at four centers, of which two are located in Germany and two in the United States. Work in Berlin and Wuppertal, Germany, mainly focuses on the discovery, optimization and development of new active substances. Research is also carried out at these sites in the fields of drug metabolism, pharmacokinetics, toxicology and clinical pharmacology. Our research and development activities in the Mission Bay district of San Francisco and in Berkeley, California, United States, are concentrated on biologicals and hematology. We also operate innovation centers in Beijing, China, and Singapore, through which we coordinate our research partnerships in Asia.

We conducted clinical trials with several drug candidates from our research and development pipeline during 2013 to drive the development of new substances for treating diseases with a high unmet medical need. Following the completion of the required studies with a number of these drug candidates, we submitted applications to one or more regulatory agencies for approvals or approval expansions.

We have recently launched five innovative medicines on the market. Of special importance is our anticoagulant Xarelto™ (active ingredient: rivaroxaban). In the area of oncology, Stivarga™ (active ingredient: regorafenib) is approved for the treatment of advanced colorectal cancer and gastrointestinal stromal tumors (GIST) in some countries, and approvals are pending in others. In 2013 we received marketing authorization for Xofigo™ (active ingredient: radium-223 dichloride) in the treatment of bone metastases in prostate cancer patients. Other promising products recently launched include Eylea™ (active ingredient: aflibercept) to treat various eye diseases. Riociguat, a new substance to treat different forms of pulmonary hypertension, was approved in the U.S. and Japan in 2013 under the trade name Adempas™. In addition, we strengthen our products through life-cycle management to improve their value for patients and/or expand their indications.

The most important drug candidates in the approval process are:

Products Submitted for Approval*

[Table 3.5.1]

	Indication
Aflibercept	E.U.; treatment of diabetic macular edema
Aflibercept	Japan; treatment of myopic choroidal neovascularization
FC-Patch Low	E.U.; contraceptive patch
Octocog alfa** (recombinant Factor VIII)	U.S.A.; prophylaxis in adult patients with hemophilia A
Regorafenib	E.U.; treatment of metastatic and/or unresectable gastrointestinal stromal tumors
Riociguat	E.U.; treatment of pulmonary hypertension (CTEPH)
Riociguat	E.U.; treatment of pulmonary hypertension (PAH)
Rivaroxaban***	U.S.A.; secondary prophylaxis of acute coronary syndrome
Sorafenib	E.U., Japan; treatment of thyroid cancer

* as of February 11, 2014
** octocog alfa = active ingredient of Kogenate™
*** submitted by Janssen Research & Development, LLC

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

Research and Development Projects (Phases II and III)*

[Table 3.5.2]

	Indication	Status
Amikacin inhale	Treatment of pulmonary infection	Phase III
BAY 94-9027 (rFVIII mutein)	Treatment of hemophilia A	Phase III
Ciprofloxacin DPI	Treatment of pulmonary infection	Phase III
LCS-16 (ULD LNG Contraceptive System)	Intrauterine contraception, duration of use: up to 5 years	Phase III
Prasterone**	Treatment of vulvovaginal atrophy	Phase III
Regorafenib	Treatment of refractory liver cancer	Phase III
Regorafenib	Treatment of colorectal cancer following surgical removal of liver metastases	Phase III
Rivaroxaban	Prevention of major adverse cardiac events (MACE)	Phase III
Rivaroxaban	Anti-coagulation in patients with chronic heart failure***	Phase III
Sodium deoxycholate****	Injection for reduction of submental fat	Phase III
Sorafenib	Treatment of breast cancer	Phase III
Sorafenib	Treatment of liver cancer, adjuvant therapy	Phase III
Sorafenib	Treatment of kidney cancer, adjuvant therapy	Phase III
Tedizolid	Treatment of complicated skin infections and pneumonia	Phase III

Research and Development Projects (Phases II and III)* [Table 3.5.2 (continued)]

	Indication	Status
Copanlisib (PI3k inhibitor)	Treatment of recurrent/resistant non-Hodgkin's lymphoma	Phase II
BAY 85-8501 (neutrophil elastase inhibitor)	Lung diseases	Phase II
BAY 1021189 (sGC stimulator)	Chronic heart failure	Phase II
BAY 1067197 (partial adenosine A1 agonist)	Heart failure	Phase II
Finerenone (MR antagonist)	Chronic heart failure	Phase II
Finerenone (MR antagonist)	Diabetic nephropathy	Phase II
Molidustat (HIF-PH inhibitor)	Anemia	Phase II
Radium-223 dichloride	Treatment of bone metastases in cancer	Phase II
Refametinib (MEK inhibitor)	Cancer therapy	Phase II
Regorafenib	Cancer therapy	Phase II
Riociguat	Pulmonary hypertension (IIP)	Phase II
Riociguat	Raynaud's phenomenon	Phase II
Riociguat	Diffuse systemic sclerosis	Phase II
Sorafenib	Cancer therapy	Phase II

* as of February 11, 2014
** prasterone = Vaginorm
*** conducted by Janssen Research & Development, LLC
**** sodium deoxycholate = ATX-101
The nature of drug discovery and development is such that not all compounds can be expected to meet the pre-defined 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 Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds.

We regularly evaluate our research and development pipeline in order to prioritize the most promising pharmaceutical projects.

Xarelto™ (active ingredient: rivaroxaban) has been approved for more indications than any of the other new oral anticoagulants. Xarelto™ is registered in the following indications in the United States and Europe:

- prevention of venous thromboembolism (VTE) in adult patients after elective hip or knee joint replacement surgery
- prevention of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (AF) and one or more risk factors
- treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) in adults
- prevention of recurrent DVT and PE in adults

In May 2013, Xarelto™ was additionally approved by the European Commission for the prevention of atherothrombotic events after acute coronary syndrome (ACS) in patients with elevated cardiac biomarkers in combination with standard antiplatelet therapy. In January 2014, the Cardiovascular and Renal Drugs Advisory Committee of the U.S. Food and Drug Administration (FDA) voted against the approval of Xarelto™ for the treatment of ACS. The FDA will consider the Advisory Committee's recommendations in its review of the application for approval of rivaroxaban in this indication but is not bound by them. Xarelto™ is marketed in the U.S. by Janssen Pharmaceuticals, Inc., a subsidiary of Johnson & Johnson.

Beyond the already approved indications, rivaroxaban is also being investigated in other cardiovascular disorders. Ongoing clinical Phase III trials include COMPASS and COMMANDER-HF. The aim of the COMPASS study is to investigate the potential of rivaroxaban in the prevention of major adverse cardiac events. The COMMANDER-HF study is evaluating the potential additional benefit of rivaroxaban in combination with standard therapy in reducing the risk of mortality, myocardial infarction and stroke in patients with chronic heart failure and significant coronary heart disease.

Xarelto™ is approved in more than 125 countries worldwide across all indications, its approval status varying from country to country.

Rivaroxaban was discovered by HealthCare and jointly developed with Janssen Research & Development, LLC.

Riociguat is the first member of a new class of vasodilating agents known as soluble guanylate cyclase (sGC) stimulators. Administered in tablet form, riociguat is currently being investigated as a new approach for the treatment of various forms of pulmonary hypertension. Based on the Phase III studies CHEST-1 and PATENT-1, we submitted riociguat in February 2013 for marketing approval in the United States and the European Union for the treatment of inoperable chronic thromboembolic pulmonary hypertension (CTEPH) and pulmonary arterial hypertension (PAH). We received the first approval in the indication CTEPH in September 2013 in Canada. In October 2013, following priority review, the FDA approved riociguat in the U.S. under the trade name Adempas™ for use in CTEPH and PAH. In January 2014, we received approval for Adempas™ for the treatment of CTEPH in Japan, and in the European approval process, the European Committee for Medicinal Products for Human Use (CHMP) recommended that riociguat be approved to treat CTEPH and PAH. A final decision from the European Commission is expected in the first half of 2014.

Stivarga™ (active ingredient: regorafenib) is a novel, oral multikinase inhibitor. It inhibits various signal pathways that are responsible for tumor growth. Stivarga™ was approved in the United States in 2012 for the treatment of patients with metastatic colorectal cancer (mCRC). The Japanese Ministry of Health, Labour and Welfare (MHLW) approved the product in this indication in March 2013. In August 2013, the product was approved in the European Union.

In February 2013, the FDA approved Stivarga™ to treat patients with locally advanced, unresectable or metastatic gastrointestinal stromal tumors (GIST) who have been previously treated with imatinib and sunitinib. In August 2013, Stivarga™ was approved by the Japanese MHLW for the treatment of GIST. In September 2013, the product was submitted for approval in this indication in the European Union.

Regorafenib is a compound developed by Bayer and co-promoted by Bayer and Onyx Pharmaceuticals, Inc., a subsidiary of Amgen Inc., in the United States. In 2011, we signed an agreement with Onyx under which that company receives a royalty on any future global sales of Stivarga™ in oncology.

Xofigo™ (active ingredient: radium-223 dichloride), a cancer drug jointly developed with Algeta ASA, Norway, received FDA approval in May 2013 to treat adult patients with castration-resistant prostate cancer (CRPC) with symptomatic bone metastases and no known visceral metastases. In November 2013, the product was approved in this indication in the European Union. In the United States, Xofigo™ is co-promoted with Algeta US, LLC.

We are jointly developing and commercializing our cancer drug **Nexavar™** (active ingredient: sorafenib) with Onyx Pharmaceuticals, Inc., United States. The successful active ingredient sorafenib, which targets both cancer cells and the vascular system of the tumor, has been registered for the treatment of advanced renal cell carcinoma since 2005 and hepatocellular carcinoma since 2007. We plan to develop the product beyond these two therapeutic areas with a broadly based life-cycle management program. Based on the clinical Phase III DECISION study, we submitted sorafenib to the European Medicines Agency (EMA) and the FDA in June 2013 for regulatory approval in the treatment of locally advanced or metastatic differentiated thyroid cancer refractory to radioactive iodine. The FDA granted this approval in November 2013 following a priority review. In September 2013, sorafenib was submitted to the Japanese MHLW for marketing authorization for the treatment of thyroid cancer. Sorafenib is also being investigated in Phase III registration studies as an adjuvant therapy following curative tumor resection in patients with renal cell carcinoma or hepatocellular carcinoma. We are also conducting Phase III registration studies in breast cancer.

Eylea™ (active ingredient: aflibercept) is our joint developmental project with Regeneron Pharmaceuticals, Inc., United States. Aflibercept blocks the natural growth factor VEGF (vascular endothelial growth factor), thus preventing the abnormal formation of new blood vessels that tend to leak blood. The medication is administered directly into the eye. Regeneron Pharmaceuticals holds exclusive rights in the United States, where Eylea™ is approved for the treatment of wet age-related macular degeneration (AMD) and treatment of macular edema secondary to central retinal vein occlusion (CRVO). Bayer markets the product outside the United States. Eylea™ has been approved since 2012 in Europe, Japan, Australia and additional countries for the treatment of wet AMD. In August 2013, the European Commission approved Eylea™ for the treatment of visual impairment due to macular edema secondary to central retinal vein occlusion (CRVO). In November 2013, Eylea™ was approved by the Japanese MHLW for the treatment of CRVO.

The first regulatory submissions in two further indications were made in November 2013: we applied to the EMA for approval of aflibercept in the treatment of diabetic macular edema (DME) and to the Japanese MHLW for approval in the treatment of choroidal neovascularization caused by pathologic myopia (mCNV).

In the area of hematology, a clinical Phase II/III trial with the developmental substance **BAY 86-6150** did not show the desired results and was discontinued ahead of schedule in May 2013. The trial investigated the efficacy and safety of the substance in people with hemophilia A and hemophilia B in whom antibodies to coagulation factors had developed.

We are not currently pursuing approval for the oral contraceptive **YAZ™ Flex Plus** in the United States.

New drug candidates for diseases with a high medical need

Five new drug candidates currently in clinical Phase I or II trials are at the focus of our early-stage development and are to be transitioned to Phase III trials as quickly as possible. Finerenone, a next-generation oral non-steroidal mineralocorticoid receptor antagonist, is being developed for use in cardiology. Finerenone is currently in clinical Phase IIb development for the treatment of worsening chronic heart failure and diabetic nephropathy. The second drug candidate in cardiology is an oral soluble guanylate cyclase (sGC) stimulator (BAY 1021189). A Phase IIb study in patients with worsening chronic heart failure began in November 2013. A Phase IIb program with the investigational new drug molidustat is under initiation for the treatment of cardiorenal syndrome in patients with anemia associated with chronic kidney disease and/or end-stage renal disease. In oncology, copanlisib, a novel, intravenous phosphatidylinositol-3 kinase (PI3K) inhibitor, was selected for accelerated development. We have also progressed toward the development of new treatment options for patients with gynecological diseases: sPRM (BAY 1002670) is a novel oral progesterone receptor modulator that shows promise in the long-term treatment of women with symptomatic uterine fibroids.

Some of our pipeline candidates are being developed for the treatment of serious, very rare diseases – also known as orphan diseases. For example, regorafenib was designated by the regulatory authorities as an orphan drug for the treatment of patients with gastrointestinal stromal tumors (GIST).

Bayer regards research into cancer stem cells as promising and is active in this area together with U.S.-based OncoMed Pharmaceuticals, Inc. Cancer stem cells are present in tumors and have typical characteristics of stem cells, such as self-renewal and differentiation potential. Cancer stem cells are those considered responsible for the genesis, metastasis and recurrence of cancer. However, Bayer is not active in the area of conventional stem cell research, which examines adult or embryonic stem cells.

Research and development expenditures in the **Consumer Health** segment amounted to €386 million (2012: €394 million), or 5.0% (2012: 5.0%) of segment sales.

In our **Consumer Care** Division, research and development activities at the product development centers in Morristown, New Jersey, United States, and Gaillard, France, focus on developing non-prescription (over-the-counter = OTC) products, medical skincare products and nutritional supplements to market maturity. Aligned to end consumers, our development strategies are geared toward expanding and improving our brand portfolio through new products, packaging and delivery forms. We also work to achieve reclassification of current prescription medicines as OTC products. We introduced a number of new product line expansions to various markets in 2013. They included new delivery forms and uses for existing brands such as Canesten™ and Bepanthen™/Bepanthol™.

The research and development activities of our **Medical Care** Division focus on blood glucose monitoring and the continuing development of contrast agents and medical equipment used in the diagnosis or treatment of various diseases.

At our two U.S. research and development locations for the Diabetes Care business unit – Tarrytown, New York, and Mishawaka, Indiana – we are focusing on strengthening our product lines and expanding into further attractive segments of the diabetes market. In 2013 we again launched a number of innovative products in key markets to meet the specific needs of people with diabetes. Examples included the Contour™ Next and Contour™ Link blood glucose meters in Europe and the new Contour™ Plus platform in selected markets in Europe, Africa and the Middle East.

The aim of our research and development activities in the area of contrast agents and medical equipment (Radiology & Interventional business unit) is to steadily improve our contrast agents and our contrast injection, thrombus removal and other vascular intervention systems in order to build on our leadership position. Our research and development centers are located near Pittsburgh, Pennsylvania, and Minneapolis, Minnesota, in the United States; in Berlin, Germany; and in Sydney, Australia. In 2013 we worked to expand the capabilities of our informatics product offerings by developing new software and informatics to improve contrast agent and radiation dose management.

In our **Animal Health** Division, we focus our research and development activities on antiparasitics, antibiotics and medicines to treat non-infectious disorders. We operate R&D centers in Germany, the United States, New Zealand and Brazil. Our central research activities are conducted in Monheim, Germany, as part of our Life Sciences platform in conjunction with pharmaceutical research and in close collaboration with our researchers at CropScience. We reinforce the business through numerous external collaborations and by inlicensing product development candidates.

OPEN INNOVATION

Strategic cooperation in research and development

We gain access to complementary technologies and external innovation potential through strategic collaborations with partners. Our **Pharmaceuticals** segment works with various partners during the individual development stages of a medicine. A number of examples are listed below:

Pharmaceuticals Cooperation Partners [Table 3.5.3]

Partner	Cooperation objective
Algeta ASA	Codevelopment of radium-223 dichloride for the treatment of castration-resistant prostate cancer patients with bone metastases
Amgen Research GmbH	Access to BiTE™ antibodies for developing novel tumor therapies
Ardea Biosciences Inc.	Codevelopment of oncological products based on MEK (mitogen-activated ERK kinase) inhibitors
BioInvent International AB	Access to antibody library with antibody inlicensing option
Broad Institute	Strategic partnership in oncology to discover and develop active substances that specifically target tumor-specific gene mutations
Compugen Ltd.	Collaboration for the research and development of new immunotherapy approaches in oncology
German Cancer Research Center	Strategic partnership for the development of new therapeutic options in oncology and immunotherapy
Dyax Corp.	Access to antibody library with the option to inlicense antibodies for the development and commercialization of novel tumor therapies
EndoCeutics Inc.	Development of prasterone to treat vaginal atrophy and female sexual dysfunction
Evotec AG	Research collaboration to identify and validate development candidates in endometriosis
ImmunoGen Inc.	Cooperation in the field of antibody-drug conjugates (ADCs) for novel tumor therapies
Inception 4, Inc.	Research into new approaches for the treatment of various eye diseases
Janssen Research & Development, LLC of Johnson & Johnson	Development of Xarelto™ (rivaroxaban)
Ludwig Boltzmann Institutes	Research into lung vascular disease, especially pulmonary hypertension, and search for ways to treat heartmuscle weakness.
Nektar Therapeutics	Codevelopment of a targeted antibiotic inhalation therapy for lung infections (amikacin inhale)
Novartis AG	Development of a targeted antibiotic inhalation therapy for lung infections (ciprofloxacin DPI)
OncoMed Pharmaceuticals Inc.	Discovery and development of novel anti-cancer stem cell therapeutics
Onyx Pharmaceuticals Inc. of Amgen Inc.	Codevelopment of Nexavar™ (sorafenib) for various types of cancer
Peking University	Research cooperation and establishment of a joint research center
Prometheus Laboratories Inc.	Development of diagnostic in-vitro assays for personalized medicine
Qiagen Manchester Ltd.	Development of diagnostic tests in personalized oncology treatment
Regeneron Pharmaceuticals Inc.	Development of Eylea™ (aflibercept) to treat various eye diseases Development of a PDGFR-beta antibody for ophthalmology
Seattle Genetics Inc.	Cooperation in the field of antibody-drug conjugates (ADCs) for novel tumor therapies
Trius Therapeutics Inc. of Cubist Pharmaceuticals	Codevelopment of tedizolid to treat a range of infections
Tsinghua University	Research cooperation and establishment of a joint research center

In 2008 we entered into a strategic alliance with the German Cancer Research Center (DKFZ) in Heidelberg, Germany, focusing on the identification and early development of new therapeutic approaches for cancer. This collaboration is designed to turn new scientific findings about cancer into new medicines or therapies as quickly as possible. A total of 26 projects have been initiated so far that relate to biological target identification for drug discovery or to early drug discovery. In April 2013, we expanded the collaboration to include immunotherapy. The first projects in this field began in June 2013.

Also in June 2013, we concluded a new licensing agreement with Seattle Genetics, Inc., United States, in the area of antibody-drug conjugates (ADCs). Under this agreement, we will receive worldwide rights to utilize Seattle Genetics' special ADC technology for antibodies to several protein targets in the field of oncology.

In August 2013, we signed a collaboration and licensing agreement with Compugen Ltd., Israel, pertaining to the research, development, and commercialization of antibody-based therapeutics for cancer immunotherapy.

In September 2013, we entered into a strategic alliance with the Broad Institute, Cambridge, Massachusetts, United States, in the area of oncogenomics and drug discovery. The goal of this five-year collaboration is to jointly discover and develop therapeutic agents that selectively target cancer genome alterations.

In November 2013, we entered into a collaboration with Inception Sciences, Inc. and Versant Ventures, both in the United States, to conduct early research in the area of ophthalmology. The goal of the new alliance is to develop innovative treatment options for patients with eye diseases, such as wet age-related macular degeneration and geographic atrophy. This work will focus on a novel target and pathway and will be carried out by Inception 4, Inc., United States.

In January 2014, we signed an agreement with Regeneron Pharmaceuticals, Inc., United States, to jointly develop an innovative antibody to the platelet-derived growth factor receptor beta (PDGFR-beta) as a potential combination therapy with Eylea™ (aflibercept) for the treatment of wet AMD. The first clinical studies in this indication are scheduled to start in early 2014.

In January 2014, Bayer and Peking University, Beijing, China, signed a collaboration agreement on a three-year strategic partnership to promote translational research for drug discovery. Under this agreement, the two partners will establish a joint research center at Peking University.

Since 2009, we have operated the internet platform "Grants4Targets," through which researchers at universities, other research institutions or start-up companies can propose biological targets for study in collaboration with Bayer. In 2013 we expanded this platform to include two further initiatives – "Grants4Leads" and "Grants4Apps": "Grants4Leads" gives chemists and pharmacists the opportunity to submit biologically active molecules as leads for collaboration with Bayer. This program adds a chemical component to the biology-oriented Grants4Targets initiative. "Grants4Apps" is a portal for proposing IT solutions designed to enable a wide range of applications in the area of health care. Unlike the first two platforms, which are important for early research, "Grants4Apps" looks for applications that can be used from the research stage right through to commercialization. The program saw a very successful rollout in 2013, with 22 grants already awarded.

In 2012, we opened the CoLaborator™, a new center in the Mission Bay district of San Francisco with laboratory facilities for bioscience startup companies. With this incubator concept, the scientists benefit both from the laboratory infrastructure and from the expertise of the Bayer researchers, which can facilitate the professional, goal-oriented design of development programs, for example. At the same time, we aim to be the first contact point for young companies in their search for possible cooperation partners. A second CoLaborator™ is currently being established at the Berlin site.

CROPSCIENCE

In 2013, CropScience invested €857 million (2012: €779 million) in research and development, which was 26.9% of R&D spending in the Bayer Group and equivalent to 9.7% (2012: 9.3%) of CropScience sales.

CropScience maintains a global network of research and development facilities employing some 4,700 people. Our largest R&D sites for chemical and biological crop protection products are located in Monheim and Frankfurt am Main, Germany; Lyon, France; and Davis, California, United States. The major research centers of the Seeds unit, which focuses on improving seed through seed technology and breeding, are located in Ghent, Belgium; Haelen, Netherlands; and Morrisville/Raleigh, North Carolina, United States. While research is carried out centrally at a small number of sites, our development and plant breeding activities take place both at these sites and at numerous field testing stations across the globe. This ensures that future active substances and crop varieties can be tested according to specific regional requirements.

In **Crop Protection/Seeds**, our scientists working in the areas of seed technology, agricultural chemistry and biologics are closely collaborating as part of our integrated research approach. This bundles the technical expertise acquired in chemical and biological research and field development, aligning it to our long-term research objectives and business strategies for the various crops.

In the Crop Protection unit, we identify and develop innovative, safe and sustainable products for use in agriculture as insecticides, fungicides, herbicides or seed treatments. In the fields of chemistry, biology and biochemistry, modern technologies such as high-throughput screening and bioinformatics play an important role in identifying new chemical lead structures. Collaborations with external partners complement our own activities.

In January 2013, CropScience acquired the German agrochemical company Prophyta Biologischer Pflanzenschutz GmbH. The transaction enables CropScience to further expand its research and product pipeline in the area of biological crop protection. The acquisition is also intended to promote the development of a leading technology platform for biological products and strengthen the fruit and vegetables business.

We are broadening the range of uses for our active ingredients by developing new mixtures or innovative formulations of products already on the market so that they can be applied in additional crops or be made easier to handle.

In mid-2014 we will combine our U.S. research and development activities in vegetable seeds and biological crop protection products at a new, integrated site in West Sacramento, California. Our goal is to better exploit the potential of our global research and development capacities by merging and expanding activities.

We plan to launch several more new products based on biological and chemical crop protection mechanisms in the coming years. For example, in 2014 we plan to introduce an insecticide to control nematodes under the Verango™ and Velum™ trademarks. In 2015 we expect to launch a further insecticide under the Sivanto™ brand, a new insecticide class to control sucking insects, and begin marketing the herbicide Council™ and a biological fungicide.

Research in our Seeds unit is devoted to optimizing plant traits. We are developing new varieties in our existing core crops – cotton, oilseed rape/canola, rice and vegetables. We have now expanded our research activities to include two new core crops – wheat and soybeans. Our work focuses on improving the agronomic traits of these crops. Our researchers are working to increase the quality and yield potential of crop plants – for example, by improving the profile of rapeseed (canola) oil or enhancing the properties of cotton fibers. We are also targeting the development of plants that have high tolerance against external stress factors such as drought and can better utilize water. Further areas of focus include developing new herbicide tolerance technologies based on alternative modes of action, and improving insect resistance and disease tolerance. To do this we employ modern breeding techniques ranging from marker-assisted breeding to plant biotechnology methods.

In March 2013, CropScience acquired the soybean seed producer Wehrtec Tecnologia Agricola Ltda. and the soybean business of Agricola Wehrmann Ltda., both headquartered in Brazil. This transaction strengthens the research and development activities of CropScience in soybeans and contributes to the development of varieties tailored to the requirements of Brazilian soybean growers.

Also in March 2013, CropScience and Syngenta filed for approval of a new herbicide-tolerance soybean trait in various countries. The application is currently being reviewed by the regulatory authorities in the United States, Canada, and major soybean-importing regions, including the European Union. This trait gives soybean plants tolerance toward the three active ingredients mesotrione, glufosinate-ammonium (Liberty™) and isoxaflutole, and is an important new way to combat difficult-to-control weeds. Its estimated launch date is between 2015 and 2020.

In April 2013, CropScience and Monsanto Company, U.S.A., entered into licensing agreements for next-generation technologies in the field of plant biotechnology. Monsanto will provide CropScience with a royalty-bearing license to herbicide tolerance technologies in soybeans in the United States and Canada. In addition, CropScience will receive a royalty-bearing license to an insect-resistance technology in soybeans in Brazil with an option on a royalty-bearing license in other Latin American countries. CropScience will grant Monsanto licenses to evaluate technologies for corn rootworm control and herbicide tolerance.

In December 2013, CropScience acquired the start-up company FN Semillas S.A., headquartered in Argentina. Closing of this acquisition remains subject to regulatory approvals. FN Semillas S.A. specializes in the breeding, production and marketing of improved soybean seeds in Argentina. This acquisition marks CropScience's entry into the Argentinian market for soybean seeds.

In 2013 we also successfully launched Roundup-Ready™ hybrid canola seed in Australia and began marketing an oilseed hybrid in India. Here we introduced our mustard seed to the market.

Our proprietary glyphosate herbicide tolerance technology GlyTol™ has been available in FiberMax™ cotton seed varieties in the United States since 2011. In 2014, we plan to launch a new combination of insect resistance and herbicide tolerance for cotton containing both TwinLink™ and GlyTol™ technology, which will offer farmers integrated pest and weed control.

In the coming years we plan to market numerous new hybrid rice and canola varieties with improved stress and insect resistance under the Arize™ and InVigor™ trademarks.

With many crops, such as vegetables, major success can be achieved using conventional plant breeding methods. As vegetables are mostly intended to be marketed and eaten fresh, merchants and consumers have particularly strict requirements regarding their appearance, nutrient content, taste and shelf life. We are launching a succession of new vegetable seed varieties that satisfy these requirements.

Our integrated product pipeline for crop protection and seed technology contains more than 25 individual projects, along with numerous new seed varieties and improved products, that have estimated launch dates between 2011 and 2016. We believe these products have a combined peak sales potential in excess of €4 billion. Crop Protection plans to have launched around 10 products during this period. In our Seeds business, we plan to bring some 15 projects to market maturity for the broad-acre crops of cotton, oilseed rape/canola, rice, wheat and soybeans, along with several hundred new vegetable varieties, over the same period.

In **Environmental Science**, we evolve chemically and biologically based solutions for consumers and professional users by tailoring substances from our Crop Protection unit or external partners for use in non-agricultural scenarios. Current development projects include insect gels and baits, herbicides, fungicides and products for the control of disease-transmitting insects.

In 2013 Environmental Science expanded its range of biological solutions by adding to the Natria™ product line for the Bayer Garden™ business in the United States and Europe, and launched Harmonix™ Insect Control, the first biological insecticide for professional pest control, in the United States. The launch of Marengo™ for use on ornamental plants in the United States broadened our range of herbicides based on the active substance indaziflam. The golf course business was strengthened by the market launch of the fungicide Interface™ in the United Kingdom and South Korea and the herbicide Specticle G™ in the United States. The product range for professional pest control was expanded in numerous countries to include a new formulation of the insecticide Maxforce™.

ONLINE ANNEX: 3-5-BCS-1

On the European market we offer a mild weed control product based on fatty acids derived from palm oil. As the production of palm oil is often associated with social and ecological problems, Bayer joined the Round Table for Sustainable Palm Oil (RSPO) in 2012. This underscores our commitment to responsible materials procurement. Bayer purchases GreenPalm certificates, which support the production of sustainable palm oil.

OPEN INNOVATION

CropScience is part of a global network of research and industry partners from diverse segments of the agriculture industry, chemical and biological research, and the food industry. These cross-industry partnerships enable us to better understand and do justice to the needs of our customers over the long term. An example is the partnership between CropScience and the U.K.-based Innovative Vector Control Consortium (IVCC), which we extended by three years in 2012. We are cooperating with IVCC to develop new substances for use against mosquitoes that transmit diseases such as malaria and dengue fever.

ONLINE ANNEX: 3-5-BCS-2

Malaria, for example, remains one of the most dangerous tropical diseases and is the leading cause of mortality in children under the age of five. Bayer has played an active role in the fight against malaria for more than 50 years. We estimate that indoor and outdoor insect sprays and larvicides from CropScience provided protection for up to 70 million people against malaria and for up to 30 million people against dengue fever in 2013. Dengue is currently the fastest-spreading mosquito-borne disease in tropical regions.

CropScience is a leading producer of indoor insecticide sprays to control malaria mosquitoes. Over the past three years, the Environmental Science product Ficam™ has played a particularly important role in controlling mosquitoes resistant to pyrethroids.

In 2013 these activities reached an important milestone: The World Health Organization issued a recommendation for a new, long-acting and thus more cost-effective, deltamethrin-based spray insecticide that offers a possible alternative to the older insecticide DDT (dichlorodiphenyltrichloroethane) for indoor use. It is planned to introduce the product in selected Sub-Saharan African countries and other malaria-endemic areas in 2014 as soon as the respective national approvals have been obtained.

CropScience also maintained its wheat research collaboration with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia. This strategic collaboration, which began in 2009, is aimed at raising wheat yields and thus boosting global wheat production in the long term.

However, it is a long way from the breeding, cultivation and protection of crop plants to the production of healthy food products with a good shelf life and their distribution to retailers. Special mention should therefore be made of our food chain partnerships, in which CropScience supports all the players in the food chain – from farmers and food processors to importers, exporters, wholesalers and retailers. CropScience has initiated food chain partnership projects for over 40 crops in more than 30 countries, mainly in Asia, Latin America and Europe. Our experts advise farmers on sustainable growing methods – from seed selection and the controlled, eco-friendly use of crop protection products to the transparent monitoring of production.

Our cooperation with partner organizations in joint projects is now an internationally successful business model for all participants in the food chain. Small farmers in developing and emerging economies draw particular benefit from the improved production and marketing structures. In 2013 we continued to expand our partnerships in Latin America. An example is the project in Chile in which we work together with Walmart and lettuce growers to ensure the traceable production of lettuces. In Peru we are currently collaborating with PepsiCo and potato farmers to ensure sustainable potato chip production that conserves natural resources, creates value for developing communities and makes potato-growing more efficient by optimizing the use of crop protection products.

MATERIALSCIENCE

In 2013, MaterialScience spent €208 million (2012: €241 million) for research and development. The subgroup thus accounted for roughly 6.5% of the Bayer Group's R&D expenses. The ratio of R&D expenses to sales in the subgroup itself was 1.9% (2012: 2.1%). In addition, MaterialScience spent €97 million (2012: €115 million) on joint development projects with customers.

A total of about 1,100 people were employed in research and development in 2013, many of them at Innovation Centers in Leverkusen, Germany, and Pittsburgh, Pennsylvania, United States, or the new facility for the Asia/Pacific region that opened in Shanghai, China, in 2013. This increase in our local presence is aimed at bringing research and development even closer to our customers in the Emerging Markets.

Our activities in the **Polyurethanes (PUR)** business unit focus partly on the continuing development of polyurethane rigid foam as a highly efficient insulating material for buildings and refrigerated appliances. Our principal goal in this respect is to further improve the material's insulating and flame retardancy properties. Among the most recent innovations is an especially fine-pored foam with up to 10% lower thermal conductivity than conventional polyurethane rigid foam.

Our research and development activities are also directed toward meeting the growing demand for added comfort. Our innovative solutions in this area include viscoelastic polyurethane flexible foam that is increasingly being used in furniture and mattresses.

We have made significant progress in recent years in the area of process development. We are currently working with carbon dioxide as a new source of carbon for polyurethanes to make us less dependent on petrochemical raw materials. In 2013 we completed the "Dream Production" research project in this field. We also pressed ahead with plans for the commercial exploitation of this new technology.

Our research and development activities in the **Polycarbonates (PCS)** business unit are geared to the development of new products – mainly for the automotive and electrical/electronics industries – that help to reduce weight, improve energy efficiency and safety, and increase design freedom.

Materials we have developed and introduced for the consumer electronics sector include extra lightweight, glass-fiber-reinforced materials for ultramobile laptop computers and other applications.

For the automotive industry, we are developing not only lightweight solutions but also materials and systems for high-quality, individual car interior designs. Here the "DirectCoating/DirectSkinning" technology co-developed by MaterialScience enables the efficient manufacture of coated components in a single production step. We also offer sustainable solutions for car bodies, laptop housings and other items using recycled plastics.

In the **Coatings, Adhesives, Specialties (CAS)** business unit, we are driving the development of raw materials for high-performance polyurethane coatings, adhesives and sealants. These are used in areas such as renewable energies, mobility and infrastructure facilities, as well as for textiles and sporting goods.

Our development activities are directed toward eco-friendly products that consume less resources and can be more efficiently applied. Here we are concentrating on low-solvent, solvent-free and waterborne systems. The use of renewable raw materials is also playing an increasingly important role. In addition to the conventional application areas, we aim to open up lucrative market segments by continuously evolving our product and technology portfolio.

Our activities in Functional Films center on products based on polycarbonates or thermoplastic polyurethanes, into which holographic functions can also be incorporated for attractive markets such as 3D flat screens.

OPEN INNOVATION

In line with the open innovation approach, MaterialScience collaborates with external scientific institutions and with academic spin-offs and start-up companies. These collaborations are mainly based in Europe, the United States, China or Japan. They focus on areas such as renewable raw materials and energies, and new composite materials for lightweight construction.

Our partners include RWTH Aachen University in Germany, with which we jointly operate the CAT Catalytic Center, as well as Tongji University in China and several institutes of the Chinese Academy of Science. In the United States, too, we support research activities at renowned universities such as Pennsylvania State University, Case Western Reserve University, Carnegie Mellon University, Virginia Polytechnic Institute and State University. Key areas here include functional materials, renewable raw materials and fundamental subjects such as new crosslinking mechanisms for polymers.

In the scientific field, we take either a leading or an advisory role in numerous publicly funded projects, as in the area of "sustainable chemistry" in the German research cluster SusChemSys and in the program run by the German Federal Ministry of Education and Research aimed at using CO_2 as a building block for plastics. We also participate in industry associations and other specialist bodies such as the German Chemical Society (GDCh), the DECHEMA Society for Chemical Engineering and Biotechnology in Germany and the American Chemical Society.

Our innovation capability is also spurred by collaborations with customers or other industry sectors. Examples here include the "future_bizz" corporate network or "CLIB2021," which is concerned with renewable raw materials. We aim to work with the best partners from the industry sectors that are important to us in order to combine competencies and turn them into innovations.

BAYER TECHNOLOGY SERVICES

Technology Services supports all Bayer subgroups with technology platforms

Bayer Technology Services is an important innovation partner to the subgroups in the areas of technological development, plant construction and production. All Bayer subgroups work closely with this service company worldwide on technology solutions, particularly in the fields of process technology, engineering, and the safe and efficient operation of production facilities.

ONLINE ANNEX: 3-5-4

Together with the subgroups, Technology Services is developing process technology, biotechnology and systems biology platforms to support the research, development and production of new products and applications, with the focus on open innovation. Development activities at the INVITE research center, a collaborative venture with Dortmund Technical University, include work on new flexible, modular production concepts. At the Joint Research Center on Computational Biomedicine, a collaboration with RWTH Aachen, computer-assisted models and methods for investigating fundamental biological mechanisms are researched and developed for clinical use together with Aachen University Hospital.

6. Sustainability

To us, sustainability basically means future viability and it forms an integral part of our business strategy. We are convinced that we can only achieve lasting commercial success if we balance economic growth with ecological and social responsibility.

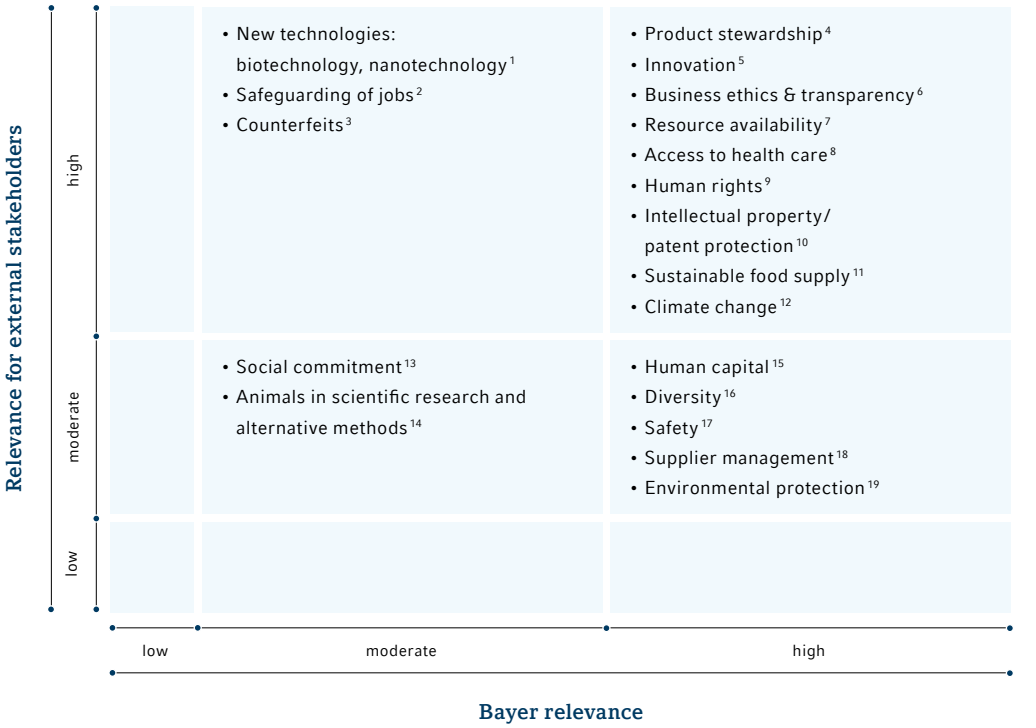
Responsible business practices are the foundation of the Bayer Group's sustainable alignment. We can identify and mitigate risks at an early stage by implementing this alignment in the areas of compliance (e.g. anti-corruption and responsible marketing), human resources policy, product stewardship, health, environmental protection and safety, and supplier management. This is one of the key requirements for society's acceptance of our business. On this basis, we aim to contribute to overcoming global challenges with our innovations, and in so doing develop additional business opportunities.

In addition, we identify opportunities and risks by analyzing the expectations of important stakeholders. We match these up with our own assessment, thereby deriving the relevant fields of action for Bayer. We document the findings in a materiality matrix.

ONLINE ANNEX: 3-6-1

The analysis takes place through regular dialogue with and surveys of external and internal stakeholders. Within the context of a stakeholder process, we examined, restructured and refocused the existing materiality matrix in 2011 together with an international think tank. This process involved external surveys, internal workshops, benchmarking and analyses. We are planning a new materiality analysis for 2014.

Essential Fields of Action [Graphic 3.6.0-1]



[1] New technologies: managing risks & opportunities
[2] Commitment to job security
[3] Fighting health risks posed by counterfeits
[4] Product safety, REACH, monitoring impact of endocrines and active ingredients in the environment, HCFCs and withdrawal of WHO Class I products
[5] Innovation to meet customer and societal needs
[6] Incl. compliance, integrity, anticorruption, responsible marketing & sales practices
[7] Promoting energy efficiency, efficient resource use (e.g. water, energy) and switch to renewables where possible
[8] Facilitating greater access to health care through R&D, differentiated pricing, patent protection, collaboration etc.
[9] Respect and promotion of human rights throughout the value chain, incl. the abolition of child labor
[10] Safeguarding IP while providing access to products and innovations
[11] Contributing to sustainable food production, supply and availability
[12] Climate protection through mitigation & adaptation
[13] Social investment and social volunteering programs
[14] Reduced use of animals where possible, commitment to welfare of animals as part of scientific R&D process
[15] Comprises employee training & development, remuneration, benefits, recruitment, retention
[16] Ensuring a sound diversity of gender, ethnic background etc. of employees
[17] Ensuring occupational, process & plant and transportation safety
[18] Promoting fair and constructive relations and influencing sustainable behavior in the supply chain, incl. ESG performance and human rights
[19] Reducing environmental impacts of products and processes on water, air, soil, supporting biodiversity

Our stakeholder engagement, i.e. the integration of different target groups, provides an important basis and is necessary for better mutual understanding.

ONLINE ANNEX: 3-6-2

As a socially engaged, globally active company, we know that this understanding can only be achieved through open and transparent dialogue with all relevant stakeholder groups. We view a systematic stakeholder dialogue not only as an important foundation for acceptance, but also above all as a basic condition for enabling us to understand and analyze the viewpoints and expectations of our stakeholders at an early stage. We aim to create trust in our work, and take the views of our stakeholders seriously.

We seek targeted dialogue both with stakeholders who are directly impacted by our business activity and with those who for their part directly or indirectly exert influence on our operations. We divide the main stakeholders with whom we interact into four groups: partners, financial market participants, regulators and a wide variety of social interest groups. Below we give an overview of our engagement with the various stakeholder groups relevant to us, drawing on selected examples from 2013.

STAKEHOLDER DIALOGUE AT BAYER

Bayer considers itself a part of society and of public life. Society's acceptance and appreciation of our corporate activities are therefore essential to our reputation and business success.

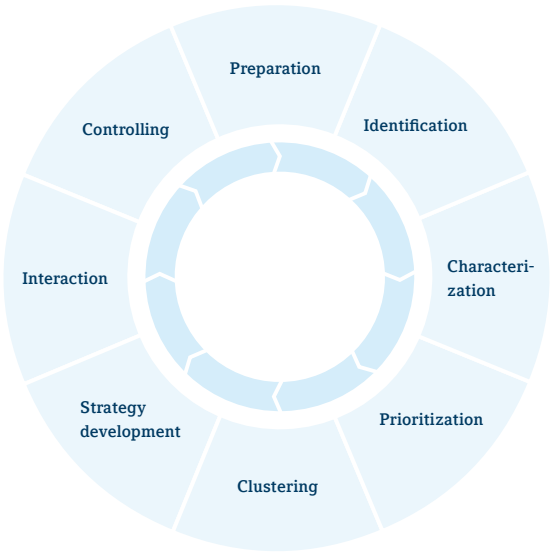
The influence of stakeholders has grown continually over the last few years. We are therefore seeking interaction with players relevant to us at local, national and international level.

In doing so, we evaluate various trends, opinions and suggestions to take these into account as far as possible in our commercial decision-making processes. The same applies when our assessments differ from those of our stakeholders and thus harbor a certain potential for conflict. Against this backdrop we have to find some flexibility in our decision-making through constructive discussions with representatives of our stakeholder groups. This approach helps us to identify social and market trends early, avoid risks, assess our contribution and thereby set focus areas for our activities.

At Bayer, we systematically involve our stakeholders using the stakeholder engagement process, which is set out in a manual for our employees. This process describes how – throughout the Group and on a project-by-project basis – stakeholder groups can be identified, their expectations charted and dialogue with them steered. The engagement process requires regular review and needs to be reflected against social trends. The focus is on objectives, personal commitment and an adequate consideration of the needs of target groups, as well as efficiency and effectiveness.

To ensure the long-term acceptance and appreciation of our corporate activities, we plan to link our stakeholder engagement even more closely to corporate strategy in the future. In the second half of 2012, we therefore launched a project whose initial phase includes a review of our current stakeholder engagement. As well as various workshops – including at top management levels – this involved conducting comprehensive benchmarking and best practice analyses. Based on the results from these, previous stakeholder activities and our experience with the Stakeholder Check (a tool for identifying and evaluating stakeholders in connection with new investment projects), we developed a new concept that concentrates on stakeholder engagement in investment projects and new product launches. We are currently conducting training in our subgroups to test the concept in practice and develop it further.

Stakeholder Engagement Process [Graphic 3.6.0-2]



Our current stakeholder activities range from targeted dialogue locally, nationally and internationally at both Group and subgroup level, through active participation in committees and specialist workshops, to comprehensive information programs and involvement in international initiatives and collaborations. We believe that stakeholder engagement is only successful when we adapt the form the dialogue takes to the individual stakeholder situation. Our stakeholder dialogue therefore includes both communication with the individual target groups and also issue-related multi-stakeholder events. We use surveys to determine which issues are particularly important to our stakeholder groups. For 2014 we are planning a review of the most significant issues for us, involving relevant stakeholders in the process. The next major Group-wide employee survey is scheduled for 2014.

We distinguish between four stakeholder groups with whom we have most interaction – partners, financial market participants, regulators and a wide variety of social interest groups. Selected examples from 2013 are elaborated on below to provide an insight into our involvement with the various stakeholder groups relevant to us.

OUR PARTNERS: CUSTOMERS, SUPPLIERS, EMPLOYEES, ASSOCIATIONS, UNIVERSITIES AND SCHOOLS

Customers

Our conduct toward customers is shaped in particular by a sense of responsibility. The long-term success of our company is essentially dependent on both the provision of innovative products, and a partnership-based relationship with our customers together with a high level of satisfaction on their part. In our view, products that satisfy customer demands while at the same time providing a benefit to society are the key to sustainability and business success. Our diversified business means that our products and customer structures vary greatly. The three Bayer subgroups have therefore put in place both specific systems for measuring customer satisfaction and their own complaint management systems.

HealthCare's divisions maintain their own active dialogues with target groups that vary significantly due to their portfolios. The sales organizations of the divisions carry out various satisfaction studies – for example with physicians from different disciplines, or with pharmacists and other partners in the health care system. Furthermore, customer studies are carried out and systematically evaluated so that we can better understand the needs of patients, health care staff, hospitals, wholesalers, and public and private payers.

However, different legal requirements apply for prescription medicines than for non-prescription or medicinal products. This makes the conditions under which customer satisfaction data are gathered in the health sector correspondingly complex. For example, patients may not be surveyed directly about the effects and side effects of prescription medicines. HealthCare therefore conducts primary market and data research.

The Global Market Research function in the Pharmaceuticals segment initiated a study in 2012 to evaluate the satisfaction of approximately 3,000 physicians in six countries. The second phase, which includes another six countries, was launched in 2013.

As the link to German customers, Bayer Vital, HealthCare's distribution company in Germany, tracks key success parameters relating to customer service issues. These include, for example, the observance of delivery dates and/or specifications on the part of external logistics companies, complaints concerning orders or deliveries and telephone availability. In this connection, various performance indicators were defined that provide information about availability and are analyzed.

At Animal Health, the methods for measuring customer satisfaction are dependent on the market segment. The division also carries out market research projects on specific disease-related issues and measures satisfaction with its own products.

Feedback and answers to questions about HealthCare products and services are made available online by the relevant business units and country organizations. In Germany, these include Bayer Vital and HealthCare Germany with the website www.gesundheit.bayer.de/de/service/kundenservice/index.php, in German only.

To enable it to ensure optimal service in the long term, the customer service center has a quality management system certified to ISO 9001:2008.

CropScience investigates the satisfaction of its customers using standardized surveys as part of its commercial excellence activities, among other tools. In addition, CropScience plans to completely overhaul its internal customer relationship management (CRM) processes by the end of 2014. The goal is to come to a new understanding of CRM that concentrates less on technical aspects but rather is more consistently aligned to customer requirements. Alongside the farmers, this new approach also focuses on distribution channels and disseminators in both complex, developed markets and smaller ones. A centralized, global CRM platform will also standardize core processes.

At MaterialScience, four regional Supply Chain Centers serve as the central link to the customer. This enables the pooling of all information streams from order acceptance to dispatch planning, delivery and complaint acceptance in the Europe/Middle East/Africa, Latin America, NAFTA and Asia/Pacific regions. Through the online information platform BayerONE, MaterialScience customers can check the status of their orders at any time.

The subgroup's supply, production and delivery processes are certified to DIN ISO 9001 and are regularly audited both internally and externally.

Customer satisfaction data are systematically compiled at MaterialScience, too. To ensure optimal quality of service, customers are surveyed, their complaints systematically evaluated in the global complaints management system, and the supplier evaluations performed by customers analyzed in detail. A new complaints management system was introduced in 2013 to enable complaints to be processed better and more quickly. The customer satisfaction analyses are conducted separately by the individual business units. The results flow directly into quality management and the continuous improvement process.

Suppliers

Procurement of products and services in differentiated markets and locations represents a particular challenge for our procurement organization. Dialogue with our suppliers is essential to ensure smooth production routines and should bring transparency into the business relationships and help build up reliable relations. Our goal is to enable our suppliers to better understand the principles of our procurement policy and our requirements, particularly as regards sustainability. In return, we would like to know more about the suppliers' situation, so as to be able first to identify obstacles and second to develop innovative solutions together. To this end, we again arranged numerous initiatives and events with our suppliers worldwide in the reporting year.

Together with other companies, we are active in the "Together for Sustainability" (TfS) initiative for greater sustainability in the supply chain. The newly developed website offers, for example, online training courses in various aspects of sustainability.

In 2013 HealthCare held Supplier Days in the Chinese cities of Shanghai and Beijing that focused particularly on sustainability. The Pharmaceutical Supply Chain Initiative (PSCI), assisted by HealthCare, held the first capability building conference for suppliers, focusing on occupational safety, in Rome, Italy, in May 2013. In July 2013, MaterialScience presented sustainability issues at a regional Supplier Day in Shanghai, China. Bayer's Indian national company again organized a local Supplier Day in Mumbai, India, in October 2013. During this event, the BayBuy Awards are presented every year, which include recognition of the most sustainable suppliers in India.

In September 2013, we introduced the Bayer Safety Award for contractors. This newly established prize for exceptional safety work is based on an initiative on the part of Procurement and HSEQ (Health, Safety, Environmental Protection, Quality) and is to be awarded for the first time in 2014.

In December 2013, the second Group-wide global town hall meeting of the Procurement Community took place at the Leverkusen site in Germany. Live transmission enabled colleagues at international sites also to take part. The town hall meeting provided the opportunity to put questions about sustainability in the supply chain directly to the relevant subgroup heads of procurement and to find out about current developments in supplier management.

Employees

The expertise and commitment of our employees safeguard our business success. To sustain such success, the Bayer Group needs a modern human resources and talent management organization with competitive structures and processes. This includes regularly providing up-to-date information to our workforce, as well as involving our employees through active and targeted dialogue.

Examples of Employee Dialogue [Table 3.6.0-1]

ACTIVE EMPLOYEE DIALOGUE AT ALL LEVELS	
CEO blog "What's important to me": intranet blog by Dr. Marijn Dekkers, Chairman of the Bayer Board of Management	Ongoing
"Bayer Talk" with the Chairman of the Board of Management	Once a year
Town hall meetings followed by a question-and-answer session	Quarterly with Chairman of the Board of Management Dr. Dekkers from company headquarters, broadcast to all Bayer sites worldwide, and at unspecified intervals in the subgroups and service companies as well
Global Leadership Conferences with workshops	At least once a year
Global employee surveys	Regularly, every 18 months; the next will be in March 2014
FORUMS FOR THE EXCHANGE OF INFORMATION ABOUT CHANGES IN THE COMPANY	
Information meetings for managerial employees	Regularly at company headquarters for the holding company and at all subgroups and service companies
Employee assemblies	Regularly, at unspecified intervals, at least once a year at German sites
European Forum: discussion between the Board of Management and Bayer employee representatives from all European countries where Bayer has sites	Once a year
DISCUSSIONS ON PERFORMANCE, MOTIVATION AND DEVELOPMENT PERSPECTIVES	
Mandatory feedback discussions as part of the Bayer Performance Management Process and the Bayer Development Dialogue	Ongoing
360° feedback for managers	Optionally on request as part of the Development Dialogue
EXAMPLES OF ISSUE-SPECIFIC DIALOGUES AND EVENTS FOR DIFFERENT EMPLOYEE GROUPS	
W11 dialogues: national and international stakeholders in discourse with Bayer's top management	Regularly, at unspecified intervals
Expert Club Meeting: exchange of experiences on the theme of innovation among the scientific network of experts comprising Bayer scientists from the R&D units and the member of the Board of Management responsible for Innovation, Technology & Sustainability	At least once a year
Process and Plant Safety Symposium with approximately 100 Bayer experts from around the world and international experts	Every two years
Global Safety Day	Every September
Continuing education events in the areas of compliance, human rights, sustainability in procurement, and diversity	Ongoing (see Online Annex 3-7-5)
Regular discourse in the global Public & Governmental Affairs Community on political developments and framework conditions relevant to the Group	Regularly
"Meet HR" series – staff from the HR department meet personally with employees to discuss key issues in more detail	Regularly in Germany, international roll-out launched
All subgroups hold issue-specific employee events worldwide.	Ongoing
MEDIA FOR EMPLOYEES	
Bayer Group publications: print and online	Employee magazines; intranet; numerous newsletters and occasion-related mailings, brochures, presentations, social media
Print and online media by the subgroups and service companies for their employees	Employee magazines; intranet; newsletters and occasion-related mailings, social media

Associations, universities, scientific institutions and schools

Alongside its business activities, Bayer is also an active member of numerous national, European and international associations and their committees, such as the Federation of German Industries (BDI), the German Chemical Industry Association (VCI), the German Equities Institute (DAI), the European Chemical Industry Council (CEFIC), BusinessEurope and the International Council of Chemical Associations (ICCA). Bayer also currently chairs econsense, German industry's sustainable development forum.

The Bayer subgroups are also involved in their respective trade associations, such as HealthCare in the European Federation of Pharmaceutical Industries and Associations (EFPIA), CropScience in the European Crop Protection Association (ECPA) and MaterialScience in PlasticsEurope. Along with general issues pertaining to particular areas, product stewardship and sustainability play an important role in many working groups.

Furthermore, scientists from our company maintain constant contact with renowned research institutions, support partnership projects in the public and private sectors (e.g. in rice cultivation with the International Rice Research Institute), hold teaching positions at universities around the world (e.g. in Germany and China) and regularly invite scientists and university and school students to various events, such as symposia on health issues and research days for schoolchildren. We also consider this involvement to be an investment in the next generation. As a research-oriented company, we are heavily dependent on well-trained and talented individuals and on society's acceptance of technology.

You can find more information on our comprehensive activities in dialogue with school and university students in Chapter 13 "Social Commitment."

REGULATORS: LEGISLATORS, AUTHORITIES, POLITICIANS

The underlying conditions in which our company operates are shaped by authorities, legislators and politicians. Our political stakeholders include, in particular, political parties, ministries, subordinate authorities, foundations and political interest groups that have a decisive influence on the framework conditions in which our business operates. At the same time, they have an interest in industry's expertise and economic contribution. Our active participation in political decision-making processes is not only democratically legitimate, it is also explicitly called for by essential players, for example through committees and expert and working groups.

Our current dialogues with authorities and ministries at local, national and international level include targeted discussions and active involvement in specialist workshops and cooperation projects.
It is vital to have a trusting collaboration with these institutions, as they play a key role in shaping the framework conditions for our business, through legislative decisions or permits, for example. Owing to the economic importance of the industry, representatives of political parties and institutions also have a keen interest in the expertise of and dialogue with representatives from our company, one example being the parliamentary evenings that the Foundation for World Population organizes together with HealthCare.

Lobbying

In its Group Regulation "Code of Conduct for Responsible Lobbying," Bayer sets out clear and binding rules for its involvement in political matters, aiming to ensure transparency in collaborations with the representatives of political institutions. Within the Group, the Public and Governmental Affairs Committee is responsible for the strategic planning of Bayer's political work. This especially includes dealing with specific political questions, as well as developing the company's political positions.
In 2013 Bayer's political lobbying again focused on the acceptance of products and technologies in society, fostering and recognizing innovation, sustainable health care systems, chemicals and energy policy, and climate protection.

WWW.BAYER.COM/EN/POLITICAL-PRINCIPLES.ASPX

For more on our political principles see WWW.BAYER.COM/EN/POLITICAL-PRINCIPLES.ASPX

Our liaison offices in Berlin, Brussels, Washington, Moscow, São Paulo and Beijing are key points of contact between our company and the political arena. In 2013 we spent €0.8 million on our liaison office in Berlin. That figure comprises personnel, operating and project costs. Bayer was one of the first companies in the life sciences sector to allow itself to be entered in the European Commission's lobby register and discloses the relevant costs of its lobby work at E.U. level (approximately €2.8 million in 2013). In accordance with our Bayer Group Regulation "Code of Conduct for Responsible Lobbying," we enter ourselves in every transparency register set up by governments, regardless of whether entry is voluntary or legally required, as in Austria since the start of 2013. Should a similar initiative be introduced in Germany, Bayer will participate in such a register there, too.

In the United States, Bayer discloses its lobbying costs in several public databases. In keeping with our Group Regulation, we have committed not to make any direct donations to political parties, politicians or candidates for political office. However, some associations to which we belong make donations on their own initiative, in compliance with statutory regulations. In the United States, companies are legally prohibited from donating to political candidates directly. However, some of our employees there utilize the opportunity to support candidates for parliamentary office by making private donations of their own funds via the Bayer Corporation Political Action Committee (BayPac). Political action committees in the United States are state-regulated, legally independent employee groups. Consequently, such donations are not donations made by the company. The BayPac contributions are regularly reported to the U.S. Federal Election Commission and can be viewed on its website.

FINANCIAL MARKET PARTICIPANTS: INVESTORS, BANKS, INSURANCE COMPANIES, RATING AGENCIES

Intensive dialogue with the capital market is a high priority for Bayer. In our dealings with analysts, investors and rating agencies, we aim to increase the market value of the company and contribute to achieving an appropriate credit rating. These efforts are focused on ensuring a comprehensive, consistent and prompt exchange of information between the company and the various members of the financial community. The top priority of our work in this area is to achieve a fair valuation of Bayer.

We further intensified our investor relations activities, such as broker conferences, "Meet Management" conferences, roadshows and field trips in the past year. Bayer was present in a total of 25 financial centers in 2013. You can find out more under "Investor Information."

We also regularly exchange ideas with analysts and investors from the field of sustainable investments. For example, we took part in a conference on Sustainable Responsible Investment (SRI) in 2013, and discussed inquiries from sustainability-focused financial market players in specific telephone conferences.

SOCIAL INTEREST GROUPS: NON-GOVERNMENTAL ORGANIZATIONS, PUBLIC, LOCAL COMMUNITY, COMPETITORS

Non-governmental organizations (NGOs)

Bayer is involved in a variety of projects, thematic initiatives and specialist conferences at a national and international level to play an active role in the common task of shaping sustainable development. This also includes collaboration with non-governmental organizations and international organizations on various global issues such as nutrition (e.g. Society for International Cooperation), climate protection (e.g. U.N. Global Compact's "Caring for Climate" initiative) or the following example in the area of family planning.

International Dialogue on Population and Sustainable Development: The issues of population and sustainable development have been the subject of increased debate around the world since the United Nations Millennium Development Goals were first formulated in 2001. HealthCare works toward achieving these development goals as a private-sector partner, maintaining close contact with governments and non-governmental organizations. To promote networking between the various players and provide a forum for discussing reproductive health issues, HealthCare since 2002 has organized together with a number of development policy organizations a series of conferences entitled "International Dialogue on Population and Sustainable Development." The partner organizations include the non-governmental organization International Planned Parenthood Federation (IPPF), the German Society for International Cooperation (GIZ) and, the German Foundation for World Population (DSW).

The goal of this international conference is to share experiences and opinions, discuss strategies and – based on the results of the conference – draw up recommendations to assist political decision-makers. Held annually in Berlin, the themes for this two-day event are decided jointly with the various partners and protagonists. In 2013 the participants discussed the future prospects for a strong young generation. To satisfy the need for intensive exchange and for the largest possible participation, the format of the event has changed over the years. The spectrum now ranges from panel discussions and expert meetings to interactive stakeholder forums. The establishment of the "World Café of Possibilities" created an additional discussion forum that involves the participants even more intensively.

Public / local community

The communities near our sites play a key role in our success. For this reason, we endeavor to be recognized at all of our sites as a reliable partner and attractive employer that meets its social responsibility.

MaterialScience: In spring 2013 a citizens' forum was launched in connection with the planned MaterialScience carbon monoxide pipeline between the Dormagen and Krefeld-Uerdingen sites in Germany. The goal of this was to further intensify the sharing of information and dialogue with the local communities around the pipeline. Headed by an external communications agency, this round table should provide a platform for exchanging and explaining facts and information about the project. In doing so, Bayer is emphasizing the importance of objective and expert discussion. The aim of the CO Dialogue Forum is to be fair to all stakeholders as far as possible – including those who are opposed to the project. More information is available online at WWW.PIPELINE.BAYER.DE (in German only).

Public debate is also focusing on another, existing pipeline that supplies production facilities at the Leverkusen site with carbon monoxide from Dormagen. MaterialScience has been operating this pipeline with CO since 2002. It is part of a pipeline bundle, running mainly on the left bank of the Rhine and crossing beneath the Rhine to the Leverkusen site in what is known as a culvert. The pipeline is approved by the authorities, is continually monitored and regularly inspected. Chemical park operator Currenta and MaterialScience informed the public about this in its presentation of the planned construction of a new culvert. As part of a project at the Dormagen site in Germany lasting several years, MaterialScience is building a new large-scale plant for the production of the chemical toluene diisocyanate (TDI). The company has pursued an active information policy since the start of planning at the end of 2008. This includes an open dialogue with the relevant stakeholders. During the permit process, MaterialScience thus sought dialogue on numerous occasions with environmental groups, politicians, residents, citizens' groups and media representatives among others. After submitting the permit documents to the Cologne district authority, MaterialScience held an information week in May 2011 to provide information about the current status of the project. In February 2012, the Cologne district authority issued MaterialScience with early planning permission. The final approval was granted at the beginning of 2013, with start-up now scheduled for the second half of 2014.

Our information policy includes regular news releases on the project's progress. MaterialScience has also set up a special website WWW.MATERIALSCIENCE.BAYER.DE/EN/PROJECTS-AND-COOPERATIONS/TDI-PROJECT.ASPX containing detailed information about the construction project. This site can also be used to ask questions.

& WWW.MATERIAL-SCIENCE.BAYER.DE/EN/PROJECTS-AND-COOPERATIONS/TDI-PROJECT.ASPX

CropScience: The safety of its production facilities is also of vital importance to CropScience. As part of the "Safety dialogue," experts at the Dormagen site explain to interested citizens what safety measures the companies based at the CHEMPARK site there undertake. CropScience also regularly uses forums, print media, and personal discussions with citizens' initiatives, representatives of the church communities and the regional press to keep its neighbors at the Frankfurt-Hoechst and Knapsack sites in Germany informed.

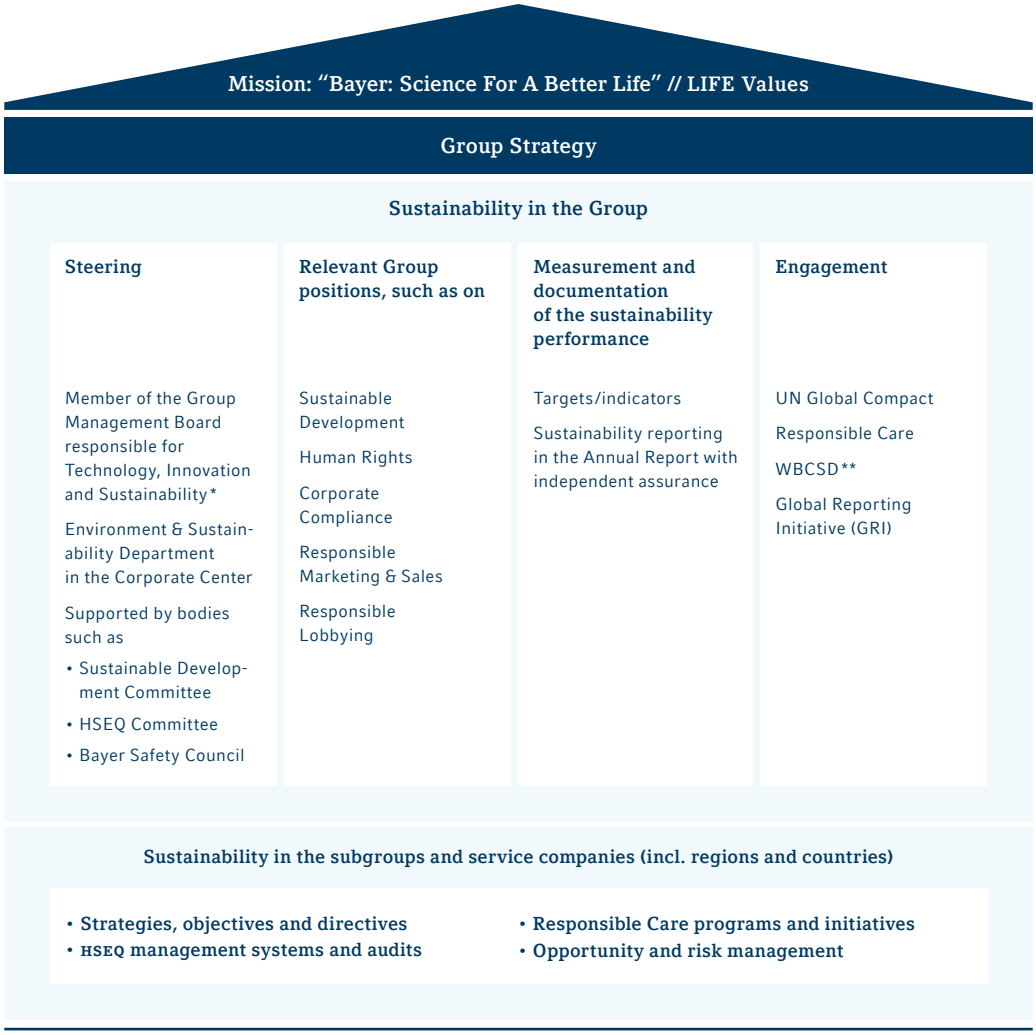
Currenta: Local dialogue at the Lower Rhine sites (Dormagen, Krefeld-Uerdingen, Leverkusen) is supported by the new Currenta neighborship offices, which opened in mid-2013.

SUSTAINABILITY MANAGEMENT AND STEERING

Responsibility for steering and aligning our Group-wide sustainability strategy lies with the Group Management Board member responsible for Innovation, Technology and Sustainability in his function as Chief Sustainability Officer of the Bayer Group, and with the Group Sustainable Development Committee chaired by the Head of Environment & Sustainability in the Corporate Center.

ONLINE ANNEX: 3-6-3

Integration of Sustainability at Bayer [Graphic 3.6.0-3]



* from April 30, member of the Group Management Board responsible for Human Resources, Technology and Sustainability
** World Business Council for Sustainable Development

The committee identifies and evaluates sustainability-relevant opportunities and risks for our company, sets targets, draws up initiatives, management systems and regulations and is responsible for monitoring.

Targets and indicators help us to operationalize our strategy and make it measurable. In 2013 we adopted an ambitious program of non-financial objectives that comprises both new and further developed sustainability targets along the value chain (see Chapter 1.3 "Targets and Performance Indicators"). This replaces our previous program of targets for 2015, whose degree of achievement is elaborated on in detail online.

See Chapter 1.3

Internal Group regulations ensure the implementation of our sustainability principles in business operations. These principles are realized through corresponding management systems, regulations and processes at the subgroup level.

ONLINE ANNEX: 3-6-4

The internal Bayer Group regulations include above all the "Sustainable Development Policy," our "Human Rights Position," the "Corporate Compliance Policy," our "Supplier Code of Conduct," the "Responsible Marketing & Sales Policy," our "Directive on Process and Plant Safety," and positions, for example, on the key issues of climate, water and biodiversity.

www.annual-report2013.bayer.com/en/commitment-sustainability

To underline our mission as a sustainably operating company, we have committed to internationally recognized sustainability initiatives such as the U.N. Global Compact and the Responsible Care™ initiative, and we participate globally in leading (industry) forums such as the World Business Council for Sustainable Development (WBCSD).

7. Employees

Employee Data [Table 3.7.1]

	Dec. 31, 2012	Dec. 31, 2013
	in FTE	in FTE
Employees by region		
Europe	52,300	53,600
North America	15,300	15,200
Asia/Pacific	26,200	28,000
Latin America/Middle East/Africa	16,200	16,400
Employees by corporate function		
Production	45,700	45,800
Marketing and distribution	42,300	44,500
Research and development	12,900	13,700
General administration	9,100	9,200
Total	**110,000**	**113,200**
Apprentices	2,500	2,500
	%	%
Proportion of women in senior management	23	25
Proportion of full-time employees with contractually agreed working time not exceeding 48 hours per week	100	100
Proportion of employees with health insurance	94	95
Proportion of employees eligible for a company pension plan or company-financed retirement benefits	70	72
Proportion of employees covered by collective agreements on pay and conditions	53	55

2012 figures restated
The number of employees on either permanent or fixed-term contracts is stated in full-time equivalents, with part-time employees included on a pro-rated basis in line with their contractual working hours.

SUSTAINABLE HUMAN RESOURCES POLICY

Bayer pursues a sustainable human resources policy. The objectives and principles are based on our corporate values, known by the acronym LIFE, which are valid throughout the world. LIFE stands for Leadership, Integrity, Flexibility and Efficiency. These values encapsulate the core elements of our corporate culture, which combines a strong focus on performance and development with a high degree of social responsibility. At the same time, they are a simple and practical guide for employees in their work. The LIFE values are therefore firmly integrated into our global performance management system, which covered more than 77,000 employees, i.e. about two-thirds of our workforce, in 2013. Participation is mandatory for all managerial employees, which means they are assessed partly according to how well they apply the four corporate values in the pursuit of their career goals. This factor can therefore affect their compensation. Of the employees whose performance was assessed regularly using this system, 40% were female and 60% were male.

EMPLOYEE DATA

On December 31, 2013 Bayer had 113,200 employees worldwide, 107,700 of whom had permanent employment contracts, while 5,500 had temporary contracts.

ONLINE ANNEX: 3-7-1

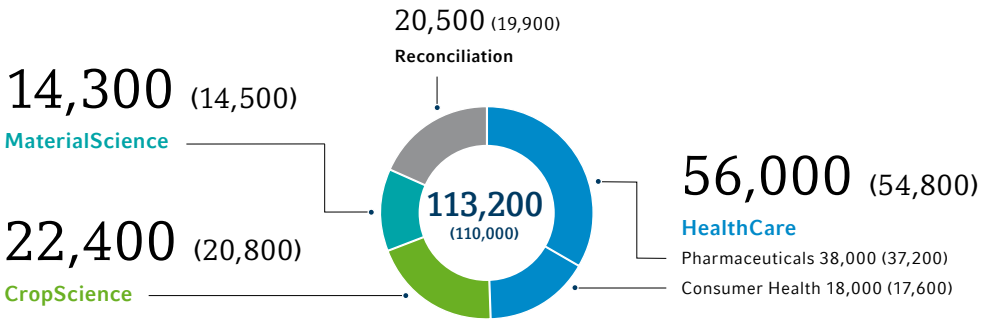
Employees* by Employment Status, Region and Gender in 2013 [Table 3.7.1-1]

	Permanent employees			Temporary employees		
	Women	Men	Total	Women	Men	Total
Europe	18,400	32,400	50,800	1,400	1,400	2,800
North America	5,700	9,300	15,000	100	100	200
Asia/Pacific	9,200	17,200	26,400	400	1,200	1,600
Latin America/Africa/Middle East	5,800	9,700	15,500	400	500	900
Total	**39,100**	**68,600**	**107,700**	**2,300**	**3,200**	**5,500**

* The number of employees on either permanent or fixed-term contracts is stated in full-time equivalents (FTE), with part-time employees included on a pro-rated basis in line with their contractual working hours.

Thus the headcount showed a slight increase of 2.9% from the prior year. In Germany we had 35,300 employees (2012: 34,600), who made up 31.2% of the Group workforce. HealthCare had 56,000 employees, CropScience 22,400 and MaterialScience 14,300. The remaining 20,500 employees, reported in the reconciliation, worked for the service companies or Bayer AG. In addition there were 2,500 (2012: 2,500) apprentices on the closing date who are not included in the Group total.

Employees by Segment [Graphic 3.7.1]



2012 figures restated
2012 figures in parentheses

In 2013 the Group-wide fluctuation rate, which includes employer- and employee-driven terminations, retirements and deaths, was unchanged at around 14%.

ONLINE ANNEX: 3-7-2

Employee Fluctuation* [Table 3.7.1-2]

	Women	Men	Total
	%	%	%
Region			
Asia/Pacific	21.8	16.7	18.5
Europe	10.7	9.1	9.7
Latin America/Africa/Middle East	16.7	15.2	15.8
North America	20.0	18.4	19.0
Total	**15.4**	**13.1**	**14.0**

* headcount

On a small scale, we also use personnel from staffing agencies in certain circumstances.

ONLINE ANNEX: 3-7-3

To enable us to respond flexibly to short-term personnel requirements caused, for example, by fluctuations in the order situation, temporary projects or long-term illness, in Germany we use personnel from staffing agencies. We only work with agencies whose employees are covered by a valid collective bargaining agreement entered into by organizations that belong to the German trade union confederation (DGB). In this way, we make sure that they receive the collectively agreed rates of pay. The proportion of temporary staff employed in Germany varies between 1% and 3% of the total workforce. Personnel from staffing agencies do not play a significant role at Group companies outside Germany either. Separate global data are not available.

TALENT MANAGEMENT AND FEEDBACK CULTURE

We are convinced that systematic people development is exceptionally important for the future success of our company. Group-wide talent management, in other words measures and tools to further our employees' professional and personal development, is therefore a key element in our human resources policy. The basic principle is that every employee has his or her own individual strengths and talents that deserve recognition and development in the workplace.

Vacancies in the Bayer Group, from non-managerial right up to senior management level, are advertised via a globally accessible platform. In 2013 we posted over 9,900 vacancies in 61 countries via this platform.

We believe regular feedback is necessary for the continuous development of our employees and our organization and that it helps us adapt to changing requirements. Alongside our performance management system, we use 360° feedback. This insight from colleagues and business associates is designed to foster the performance and leadership behavior of our employees and support their professional development.

Our most important feedback tool at the corporate level is our Group-wide employee survey. Every two years, this gives us competent feedback from our employees on our strategy, culture and working conditions. Since the last survey in 2012, we have launched a variety of initiatives and improvements worldwide to overcome the shortcomings identified in specific areas. The next employee survey is scheduled for spring 2014.

ONLINE ANNEX: 3-7-4

Many of the initiatives introduced throughout the world in 2013 aim to improve the feedback culture in specific organizational units and involve employees more closely in decision-making processes. The spectrum ranges from a new target picture for the 4,900 employees at Bayer Business Services through programs to recognize outstanding achievements by employees, and the introduction of home offices, to new information and dialogue offerings in many areas of the company and innovative video blogs for members of the field force.

Our Development Dialogue is an ideal link between feedback, which is based on the present situation, and long-term career planning. Employees discuss their strengths and development needs, career expectations and aspirations with their direct supervisor with the objective of agreeing on a personal development plan to enable them to realize their potential within the company.

Once a year our managers are required to conduct the Development Dialogue with their employees – last year this was done nearly 24,000 times throughout the Group. The results are documented in our global employee portal.

ADVANCING KNOWLEDGE AND LEADERSHIP SKILLS

Fostering our employees' "lifelong learning" is a central element of both people development and the management of demographic change at Bayer. Our aim is to empower all employees to continuously refresh and expand their knowledge and skills in all phases of their working lives.

ONLINE ANNEX: 3-7-5

Our education and training activities comprise a wide range of work-related programs that enable employees to broaden and update their specialist knowledge and abilities or acquire new skills, for example by learning a language or acquiring leadership competencies. In addition, the goal of the Bayer Academy, which launched its first modules in 2013, is to provide systematic training for managers throughout the Bayer Group and to harmonize function-related continuing education and training worldwide and make it available to all employees.

Examples of Continuing Education [Table 3.7.1-3]

BAYER ACADEMY	
Leadership training, general management training	Global/Group-wide
KNOWLEDGE AND SKILLS TRAINING IN SPECIFIC AREAS	
Introduction to the company	
Leadership skills	
Communication, working methods and project management	
Business administration and law	
Marketing, sales and customer focus	
Languages and intercultural skills	
Information technology and SAP	
Research, production and technology	Global/Group-wide
GROUP FOCUSES	
Corporate compliance, anticorruption	
Human rights	
Changes in technology (Personalized Workplace Program)	
Supplier management/Supplier Code of Conduct	Global/Group-wide
SUBGROUP PROGRAMS	
Occupational safety (PEGASUS)	
Fit in Production (FIP)	Global/subgroup-wide
CONTINUING EDUCATION OFFERINGS FOR EMPLOYEES OUTSIDE WORKTIME	Local/national

At the heart of our employee training concept is the Bayer Academy, within which the extensive range of continuing education opportunities is systematically organized. The Academy's Group-wide roll-out began in 2013. It comprises two principal areas, a Leadership & General Management Academy for managers and various functional academies focusing on a wide range of topics and corporate functions. The functional academies are geared specifically to the continuous professional development of our employees. In many countries, including important Emerging Markets such as China and Brazil, national versions of the Bayer Academy are already fully operational.

ONLINE ANNEX: 3-7-6

The aim of the Leadership Academy introduced in 2013 is to place management training on a systematic footing and establish a common understanding of leadership throughout the Bayer Group. In the first year, more than 2,500 employees worldwide attended the management training seminars run by the Leadership Academy.

Functional academies harmonize function-specific ongoing training offerings across the Bayer Group and make them available to all employees in the function. The academy concept therefore also provides impetus for the internationalization of our ongoing training programs and for sharing knowledge and experience within functions. One good example is the new Bayer HR Academy for human resources professionals, which started operating in November 2013.

Our management training also addresses important subject areas.

› ONLINE ANNEX: 3-7-7

To strengthen the Leadership component of LIFE and promote performance orientation in the company, we have developed a Group-wide training program called "Enhancing Performance & Feedback Culture (EPFC)". This is designed to support our managers in regularly giving their employees candid and constructive feedback on their work and conduct. The goal is to establish a true feedback culture throughout the enterprise that promotes individual strengths, addresses existing deficits and thus enhances employees' personal and professional development over the long term. EPFC training is mandatory for employees with personnel responsibility and has now been completed by almost 13,000 managers worldwide. Two years after its introduction, there has been a clear increase in the ability and willingness of our managers to give a differentiated evaluation of their employees' capabilities in the annual Performance Management Process.

Innovation ranks alongside feedback and diversity as part of our corporate culture. A new workshop format, "Leading Innovation," has therefore been added to our management training on aspects of strategic corporate development to foster individual innovative capability. Since the introduction of this series of workshops in 2012, it has been used to train approximately 570 members of the Group Leadership Circle and other selected managers in the strategies and methods of effective innovation management.

Harmonization of our employee training concept in the Bayer Academy also helps us to better report on participation rates. We currently compile data on the main training activities in the twelve largest countries through our global training reporting system. Last year, employees in these countries received between eight and 42 hours of continuing education and training according to need. The average was 17.8 hours per employee across these twelve countries, with women taking an average 23.3 hours of training and men 18.5 hours. These averages do not include figures for the United States or Japan as statutory regulations preclude differentiation by gender in these countries.

EMPLOYEE COMPENSATION AND BENEFITS

An important principle of our human resources policy is linking employees' compensation to their performance and enabling them to share in the company's success. Regular benchmarking against competitors and a globally standardized system help us to set basic salaries in line with the demands and responsibilities of each position. These salaries are supplemented by performance-related compensation components and extensive ancillary benefits. We attach great importance to avoiding gender-based inequality, providing fair compensation worldwide and informing our employees transparently about the overall structure of their compensation.

› ONLINE ANNEX: 3-7-8

Our compensation system does not differentiate between men and women. At Bayer, individual salaries are based on each employee's personal and professional abilities and the level of responsibility assigned to them. At managerial level, this is based on uniform evaluation of all positions throughout the Group using the internationally recognized Hay method. In areas of the Group and jobs that fall within the scope of binding collective bargaining agreements, there are no differences in pay based on gender either. This also applies for the compensation of apprentices.

In the Emerging Markets and developing countries, too, compensation is aligned to local market conditions. In keeping with our Human Rights Position, our aim is to pay our employees adequate salaries that ensure they and their families have an appropriate standard of living. In all Emerging Markets where Bayer has a significant presence, the lowest salary paid by Bayer is at least in line with the applicable minimum wage and in most cases higher.

To provide a transparent overview of their compensation, including all additional benefits provided by the company and employer pension and social insurance contributions, some 29,000 employees worldwide now receive an extensive annual compensation and benefits statement containing all relevant information. We intend to extend this service to employees in a total of 17 major countries in the coming year.

Under our Group-wide Short-Term Incentive program alone, variable one-time payments totaling more than €650 million are earmarked for our employees for 2013. In addition, various employee stock programs enable our staff to purchase shares in Bayer at a discount. In many countries, such employee stock programs are included in our extensive range of ancillary benefits, giving employees an additional opportunity to share in the company's business success. We also offer senior and middle managers throughout the Group uniform stock-based compensation programs known as "Aspire" (see Note [26.6] to the consolidated financial statements). These are based on ambitious earnings targets and – in the case of Group Leadership Circle members – require an appropriate personal investment in Bayer stock. In 2013 our personnel expenses amounted to €9,430 million (2012: €9,194 million). The increase was mainly due to higher employee bonuses and salary adjustments.

Consolidated Financial Statements Note 26.6

ONLINE ANNEX: 3-7-9

Personnel Expenses and Pension Obligations [Table 3.7.1-4]

	2009	2010	2011	2012	2013
	€ million	€ million	€ million	€ million	€ million
Personnel expenses	7,776	8,099	8,726	9,194	9,430
of which pension and social security contributions	1,490	1,623	1,672	1,823	1,845
Pension obligations*	15,931	17,699	19,310	22,588	20,682

2012 figures restated
* present value of defined-benefit obligations for pensions and other post-employment benefits

HUMAN RIGHTS AND SOCIAL RESPONSIBILITY

Our social responsibility as a company and an employer is rooted in an unreserved commitment to support and foster human rights in our sphere of influence. Bayer's Human Rights Position is set out in a binding Group-wide regulation. We respect the United Nations' Declaration of Human Rights and are a founding member of the UN Global Compact. Bayer's mission statement, LIFE values and Corporate Compliance Policy commit all employees around the world to fair and lawful conduct toward staff, colleagues, business partners and customers.

To enhance our employees' awareness of the importance of human rights in their day-to-day activities, in 2013 we organized a variety of training seminars on the main aspects of our Human Rights Position. Courses were offered in some 80 countries and were attended by approximately 90,000 employees, more than 75% of our workforce.

The compliance organizations at the Group and country levels monitor compliance with the relevant directives. If there are signs of violation, employees can contact their Compliance Officer at any time, anonymously if required. For further details see Chapter 18.3 "Compliance."

See Chapter 18.3

Our social responsibility is also reflected in our approach to necessary changes and restructuring measures. In Germany, which remains the company's largest operational base with 35,300 employees, business-related dismissals are excluded through the end of 2015 for a large proportion of employees under an agreement with the employee representatives.

The reduction of 700 positions at Bayer MaterialScience worldwide in the next four years, which was announced in September 2013, will also be undertaken in a socially compatible manner wherever possible, for example by utilizing natural fluctuation and avoiding business-related dismissals.

Full and timely information for employees is provided on significant operational changes in compliance with the relevant national and international obligations.

ONLINE ANNEX: 3-7-10

The Human Resources and Communications departments work together closely to ensure timely communication of far-reaching changes through a wide range of carefully coordinated media. In Germany we combine providing timely information to the employee representatives in the Economics Committee of the company concerned with coordinating and jointly deciding on the proposed communication measures.

Our human resources policy also includes ensuring a high level of social protection. For example, nearly all employees either have statutory health insurance or can obtain health insurance through the company. 72% of employees also have access to a company pension plan. In 2013, we once again expanded or improved the quality of the benefits provided for employees in many countries.

ONLINE ANNEX: 3-7-11

In 2013 we achieved further improvements for our employees in the Czech Republic, Hong Kong, Bangladesh, Morocco, the Central American countries and Mexico in the scope and terms of their health insurance.

We also introduced company pension plans in a further four countries and adjusted the terms of the established pension plans in favor of the employees in four European countries and one Asian country.

Health Insurance and Pension Plans by Region [Table 3.7.2]

	Health insurance*		Pension plans**	
	2012	2013	2012	2013
	%	%	%	%
Region				
Asia/Pacific	90	92	35	39
Europe	97	99	86	87
Latin America/Africa/Middle East	94	94	52	55
North America	92	89	96***	97
Total	**94**	**95**	**70*** **	**72**

* government- or employer/employee-funded
** programs to supplement statutory pension plans
*** 2012 figures restated: the figures for North America and the total we published in our Annual Report 2012 were too low. This was due to subsequent report updates from the United States resulting from a divergent understanding of what had to be reported under "Company Pensions."

The working conditions for 55% of our employees are governed by collective or company agreements. The contractually agreed working hours of our employees do not exceed 48 hours a week in any country. At many smaller country companies, the interests of the workforce are represented by elected employee representatives who have a right to be consulted on certain personnel-related decisions. China is a good example of the continuous expansion of the consultation with labor unions in the Bayer Group.

ONLINE ANNEX: 3-7-12

At our companies there, elected councils representing nearly 10,000 employees are in place. This means that more than 90% of our employees in China are now represented by the local union.

In 2013 we stepped up our collaboration with the union in China and extended information rights of employee representatives. In the future, quarterly meetings will be held with employee representatives at our six largest companies in this country. Union representatives are consulted before the introduction of major ancillary wage benefits. The local management has also given an undertaking to inform employee representatives in advance of any planned capacity adjustments and restructuring activities. For two companies, formal collective agreements were concluded with the union in 2013. Negotiations on similar collective agreements for three other Bayer companies in China should be completed in the near future.

Percentage of Employees Covered by Collective Agreements, by Region [Table 3.7.3]

	Percentage of employees covered by collective agreements, especially on compensation and working conditions*		Percentage of full-time employees with contractually agreed working weeks of max. 48 hours	
	2012	2013	2012	2013
	%	%	%	%
Region/Area				
Asia/Pacific	15	24	100	100
Europe	87	88	100	100
Latin America/Africa/Middle East	46	45	100	100
North America	5	5	100	100
Total	**53**	**55**	**100**	**100**

* collective or company agreement

Our understanding of our role as a socially responsible company includes a commitment to helping disadvantaged individuals. We employ a total of 2,800 people with disabilities in 28 countries. Most of them work for our companies in Germany, where they made up 4.5% of the workforce in 2013. More than 32% of the 1,600 disabled employees there were female. In the year under review we received public accolades in Germany and the U.K. for our initiatives to support people with disabilities and disadvantaged young people, some of which have been running for many years.

ONLINE ANNEX: 3-7-13

In 2013 the U.K. Department of Work and Pensions' "Double Tick" symbol for exemplary integration of disabled people was awarded to our site in Newbury. This accreditation rewards Bayer's voluntary commitment to implement a defined list of measures for the employment and support of people with disabilities.

In Germany, our program to help disadvantaged school leavers prepare for vocational training celebrated its 25th anniversary. Bayer has been running this special one-year program for socially and educationally disadvantaged young people since 1988. More than 1,600 youngsters have completed the program over the years, and 80% of them subsequently enrolled for vocational training in science or technology. In 2013 Bayer accepted another 137 young people into this highly acclaimed program.

DIVERSITY AND INTERNATIONALITY

Workforce diversity is vital for our company's future competitiveness. This is particularly true for our management. Diversity improves our understanding of changing markets and consumer groups, gives us access to a broader pool of talented employees, and enables us to benefit from the enhanced innovative and problem-solving abilities that are demonstrably associated with a high cultural diversity within the company. We pursue this aim especially in the emerging countries of Asia and Latin America, where we intend to significantly increase the proportion of local people among our managerial employees in the medium term. Of the members of our Group Leadership Circle, in which 31 nationalities are currently represented, around 67% come from the country in which they are employed. The Bayer Group currently employs people from 144 countries.

Special training for members of the management team is one focus of our activities to achieve greater employee diversity.

ONLINE ANNEX: 3-7-14

Since 2012 a workshop format has been used to raise the awareness of senior managers and their management teams of the strategic benefits of diversity. The workshop outcomes are consolidated in an action plan for each organizational unit.

We also want to empower our managers to form teams that incorporate the principles of diversity and to lead them successfully across the cultural divide. To this end a new seminar on "Leading Across Cultures and Genders" was launched worldwide in 2013. It was attended by some 670 managers from all levels.

Training for senior management members is supported by supplementary initiatives in the countries and subgroups. Since last year, diversity and inclusion officers in the Middle East have been driving forward local initiatives.

Another focus of our diversity strategy is on improving the gender balance, especially in management. We view a male/female ratio of between 30 to 70 and 70 to 30 as acceptable and have therefore set ourselves the voluntary target of raising the proportion of women on the five highest management levels throughout the Group toward 30% by 2015. Women currently account for 25% of employees in this management segment worldwide, while men account for 75%. Since we set this target in 2010, the proportion of women in managerial positions has therefore risen by 4 percentage points. The ratio of female to male employees in the Bayer Group as a whole was 36.5% to 63.5%.

ONLINE ANNEX: 3-7-15

Bayer Group Workforce Structure*

[Table 3.7.3-1]

	Women	Men	Total
Senior management	2,200	6,800	9,000
Junior management	9,600	15,400	25,000
Skilled employees	29,600	49,600	79,200
Total	**41,400**	**71,800**	**113,200**
Apprentices	800	1,800	2,600

*number of employees converted into full-time equivalents (FTE)

Our employees' lifestyles are as diverse as the people themselves. Flexible worktime arrangements help employees to balance their employment with their personal or family lives by helping them to better plan their leisure time, enabling working parents to make equal use of career opportunities in the company and helping the growing number of employees who also care for close relatives. Bayer offers its employees a variety of such opportunities in all countries. We continued to expand our range of employee benefits in this area worldwide in 2013.

ONLINE ANNEX: 3-7-16

A General Works Agreement concluded in Germany in 2013 means that employees at the large Group companies who care for close relatives will in the future receive support well in excess of the statutory provisions. This includes extensive professional advice and 10 days' paid leave of absence for any sudden urgent need for nursing care in the family. Bayer employees can also decide to switch to part-time work to look after a needy relative for up to three years and reduce contractual working hours by up to 50% of full-time employment.

In 2013 the Bayer Group had 7,850 part-time employees, around 6.8% of the total headcount.

ONLINE ANNEX: 3-7-17

Percentage of Part-Time Employees by Region [Table 3.7.3-2]

	Women	Men	Total
	%	%	%
Region			
Asia/Pacific	4.7	0.8	2.2
Europe	21.3	7.5	12.8
Latin America/Africa/Middle East	0.2	0.0	0.1
North America	1.9	0.2	0.8
Total	**11.9**	**3.8**	**6.8**

By the end of 2013 around 77% of employees in Germany who took statutory parental leave or participated in the company's more far-reaching "Family & Career" program over the past five years had returned to work. Of the returnees, roughly 60% were women and 40% were men. Since parental leave regulations vary widely from country to country, we only compile data for Germany.

ONLINE ANNEX: 3-7-18

The next table shows the number of employees who have returned after the standard statutory parental leave program and the Bayer "Family & Career" model since 2009. It also shows the number of male and female returnees and of employment contract terminations at the end of employees' parental leave. It covers all employees in Germany who have taken parental leave since January 1, 2009.

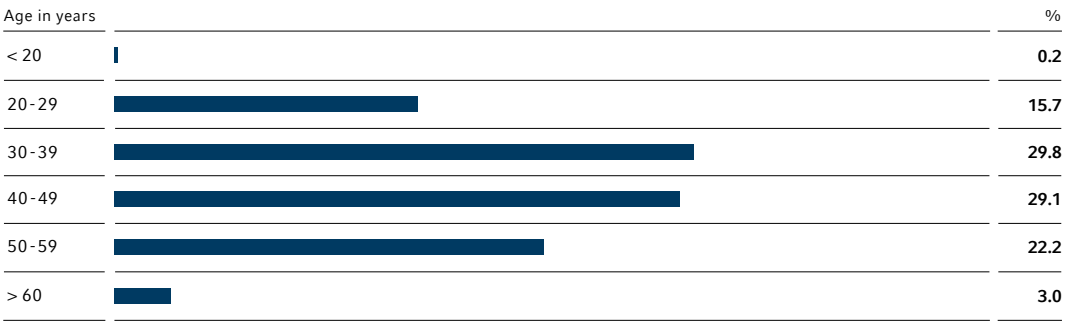
Employees Returning from Parental Leave Using Germany as an Example [Table 3.7.3-3]

	%	Absolute
Total no. of employees who have taken parental leave since 2009	**100**	**2,361**
Returnees by 2013	77.3	1,824
Women	61.5	1,453
Returned	65.5	951
Terminated	7.3	106
Men	38.5	908
Returned	96.2	873
Terminated	0.8	7

MANAGING DEMOGRAPHIC CHANGE AND RECRUITING YOUNG PEOPLE

Demographic change, in other words, the steady reduction in the birth rate and the aging population, is a challenge for many industrialized countries. Economically, it involves both opportunities and risks. We have prepared forecasts of the age structure of the workforce in the entire Bayer Group up to 2020 in order to assess the impact of this issue on our company. Currently, we are not facing an acute shortage of skilled staff. Nevertheless, we are already addressing the foreseeable consequences of demographic change by stepping up our activities to recruit staff, especially from the younger generation, retain knowledge in the company and foster the health of our employees worldwide.

Employees by Age Group [Graphic 3.7.2]



Bayer endeavors to appeal to the most talented people worldwide and to retain employees for long periods by providing good development opportunities, a modern working environment and competitive compensation. In 2013 we again attracted more than 4,900 academically qualified specialists and managers worldwide. We recruited approximately 660 university graduates in Germany, 520 in Russia, about 420 in Brazil and more than 340 in India. In 2013 we hired more than 19,400 new people across all occupations throughout the Group.

ONLINE ANNEX: 3-7-19

New Hires by Region* [Table 3.7.3-4]

	Women	Men	Total
Region			
Asia/Pacific	2,668	4,109	6,777
Europe	3,050	3,332	6,382
Latin America/Africa/Middle East	1,093	1,669	2,762
North America	1,256	2,265	3,521
Total	**8,067**	**11,375**	**19,442**

*converted into full-time equivalents (FTE)

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Our success in recruiting employees is attributable to our attractiveness as an employer, which was once again confirmed by numerous awards in 2013, and proactive recruiting activities at the local level.

ONLINE ANNEX: 3-7-20

Bayer has longstanding contact with leading universities in almost all countries in order to raise talented students' awareness of the wide-ranging opportunities it offers. In China, for example, we currently cooperate with more than 40 universities and offer up to 500 students a year an opportunity to undertake internships in all areas of the company. In addition, we offer students in China training programs, scholarships and technical support for their dissertations.

In recent years, we have steadily extended our collaboration with universities in Brazil as part of our recruiting strategy. Around 260 students in this country now take part in our trainee and internship program. These activities pay off: in 2013 Brazilian students ranked us among their 100 "dream employers," while upcoming health care professionals see us as the second most attractive company in the country. In Canada, our internship program was rated by the Talent Egg online portal as one of the best in the country. In Turkey, we enabled more than 110 students to do their mandatory internships in various parts of our company. Overall, we offered more than 2,900 demanding professional internships to students around the world in 2013.

Alongside hiring university graduates, Bayer's training programs for young people are among the most important steps the company takes to guard against a possible shortage of specialists due to demographic change. Once again in 2013, more than 900 young people entered training programs for more than 30 occupations at Bayer's sites in Germany. At the same time, we aim to utilize and develop the potential of older employees even more effectively. Passing on knowledge from the older to the younger generation is the aim of the Bayer Senior Experts Network, known as BaySEN for short. Together with our extensive on-the-job training offering, we thus ensure that the knowledge of our employees is up-to-date and is shared across generations.

Group-wide we offer our employees a wide variety of benefits to promote their health. These range from medical checkups and on-site medical services to sports opportunities inside and outside the company and the provision of advice and reintegration assistance after recovery from an illness. In this way we also contribute significantly to maintaining long-term employability, which is of growing importance as many countries are raising the retirement age in light of demographic change. In 2013, we once again launched a wide range of additional initiatives to maintain and improve the health of our employees.

ONLINE ANNEX: 3-7-21

Group-wide initiatives to foster employees' health and maintain their employability in view of the rise in the retirement age include the 2010 General Works Agreement on lifetime working and demographic change in Germany. This innovative agreement contains measures to reduce the workload of older shift workers, ease the return to work after long-term illness and an extensive health screening program for all employees. Including the collectively agreed contribution to the demographic change fund, in 2013 we increased the funding available for measures under this agreement to €8 million per year.

The type and scope of the health promotion programs offered by Bayer Group companies worldwide varies depending on national health care provision and access to it. In many countries, preventive health care measures are a discretionary benefit provided by the company, while in others they are required by law. Preventive programs are often organized in cooperation with external physicians or organizations. The following examples from 2013 are only a small selection of the very broad global offering.

In 2013 **HealthCare's** country organizations continued to increase the quality and number of health care programs. For example, talks and advisory events on a range of health issues were held at many sites in Germany. In July, the "Heart LIFE" program was launched in Socorro, Brazil, to raise employees' awareness of cardiovascular diseases and highlight preventive measures. This pilot project is to be extended to further sites in 2014. In collaboration with a health insurer in Finland, we launched health coaching for employees who are already suffering health problems or who have high health risks in order to help them mitigate individual risk factors.

In 2013 **CropScience** also introduced numerous measures and initiatives to foster the general health of employees. Topics such as nutrition, addiction prevention, fitness and relaxation were addressed through special programs at many sites worldwide.

Health checks were also offered at many sites, for example on Bayer Safety Day or special health days, and sometimes as part of company-wide health weeks. Examples in 2013 were Ecuador, Brazil and Australia.

Very extensive occupational health programs were offered at many **MaterialScience** sites in 2013. At its locations in the Lower Rhine region of Germany, MaterialScience conducted a health survey to make more targeted use of occupational health management measures in the areas of exercise, relaxation skills for shift workers and stress management. The three MaterialScience sites in Shanghai organized a comprehensive program of events on women's health in 2013.

The "B Well" program in the United States is an integrated health and wellness program for all Bayer employees. It helps employees play an active role in promoting their health. In 2013 the focus was on preventive health screening and personal advice, supplemented by programs on stress prevention, weight management, exercise and preventing diabetes.

8. Procurement and Production

SUPPLIER MANAGEMENT

Bayer's procurement volume in 2013 was approximately €18.7 billion (2012: €18.1 billion). Goods and services were procured from some 107,000 (2012: some 101,000) suppliers in approximately 138 (2012: 125) countries and recorded in the Group-wide reporting system. To cover specific requirements as efficiently as possible, each subgroup procures direct and production-related materials itself, while indirect and non-production-related goods and services are sourced in each case by the organizational unit that is their major user within the Bayer Group. Our Group-wide procurement strategy and application of the major-user principle enable us to realize synergy potentials in the form of standardization, volume pooling and streamlining of negotiations.

The procurement volume in Germany, the United States and Japan in 2013 accounted for nearly 67% of the expenditures in the countries of the OECD (Organisation for Economic Co-operation and Development), or about 54% of the Bayer Group's total procurement spend. Brazil, India and China together accounted for about 72% of the expenditures in the non-OECD countries or about 14% of the total spend.

ONLINE ANNEX: 3-8-1

Number of Suppliers and Procurement Spend by Economic Region [Table 3.8.0-1]

	Suppliers	Spend
	%	%
OECD countries	71	81
Non-OECD countries	29	19

Procurement Spend in OECD and Non-OECD Countries [Table 3.8.0-2]

	%	%	%	%
	Germany	United States	Japan	Other
OECD countries	27.4	21.3	5.7	26.3
	China	Brazil	India	Other
Non-OECD countries	9.0	2.6	2.4	5.3

Sustainability in procurement

Bayer regards adherence to sustainability standards within the supply chain as a crucial factor in the value chain. By acting responsibly in collaboration with our suppliers, we aim to minimize risks and create stable, long-term business relationships with our partners. It is also an important strategic lever for Bayer in safeguarding both its global competitiveness and the supply of materials and services. For this reason, the company applies not just economic standards, but also environmental, social and corporate governance (ESG) standards in choosing new suppliers or continuing its relationships with existing ones. These standards are defined in Bayer's Supplier Code of Conduct, which generally forms the basis for our collaboration with suppliers. It is legally binding and integrated into electronic ordering systems and contracts throughout the Group. The Supplier Code of Conduct is based on the principles of the U.N. Global Compact and our Human Rights Position.

ONLINE ANNEX: 3-8-2

To participate in IT-based bidding processes, suppliers must give a binding assurance before submitting an offer in our supplier management system that they acknowledge Bayer's Supplier Code of Conduct. This creates an important foundation for a business relationship aligned to sustainability principles.

Sustainability assessments and audits of our suppliers

We track our suppliers' adherence to the Code of Conduct by monitoring their sustainability performance. This is done partly on the basis of on-site audits and partly through online supplier assessments carried out by a leading web-based platform for sustainability performance monitoring (EcoVadis). The assessments are based on a web-based, modular questionnaire completed by the supplier, coupled with accompanying verification documents and 360° screening. Suppliers are selected for these assessments based on a combination of country and material risks and procurement volume.

To leverage synergies in the monitoring of suppliers' sustainability performance, we participate in two industry initiatives – the "Pharmaceutical Supply Chain Initiative" (PSCI) and "Together for Sustainability" (TfS), an initiative of the chemical industry that was co-founded by Bayer. The focus of these initiatives is on standardizing sustainability aspects in the relevant industries. Assessments and audits are also exchanged among the members, giving us access to additional evaluations of suppliers that also work with Bayer.

ONLINE ANNEX: 3-8-3

In both initiatives, sustainability assessments and audits of suppliers are exchanged through IT platforms. This minimizes the administrative burden for both suppliers and the member companies.

Members of the TfS initiative initiated a total of over 1,850 assessments and successfully completed 150 audits during the one-year pilot phase from July 2012 through June 2013. In the PSCI initiative, the first joint pilot audit program was successfully completed and evaluated in 2013. Both initiatives focus not only on performing audits, but also on providing support and training for suppliers.

Benefits from the production network

Under the Bayer Audit Program, we carry out supplier audits together with an external, independent partner, applying the standard of the respective industry initiatives in which we participate in order to benefit from synergies. We also obtain further audits of Bayer suppliers on an exchange basis as part of our collaboration with the members of the PSCI and TFS initiatives. In addition, Bayer auditors perform inspections focusing on health, safety, environmental protection and sustainability. An overview of the number of supplier assessments and audits:

ONLINE ANNEX: 3-8-4

Supplier Assessments [Table 3.8.0-3]

Bayer assessments via the EcoVadis platform	278
Assessments* by TfS** members of suppliers that also work for Bayer	107
National assessments by Indian country company	243

* assessments exchanged via the EcoVadis platform as part of TfS initiative
** Together for Sustainability (TfS)

Supplier Audits [Table 3.8.0-4]

Bayer audits with external auditors	41
Audits* by TfS** members of suppliers that also work for Bayer	7
Audits* by PSCI** members of suppliers that also work for Bayer	2
HSE***/sustainability audits by Bayer auditors	97

* audits exchanged as part of TfS and PSCI initiatives
** Together for Sustainability (TfS)/Pharmaceutical Supply Chain Initiative (PSCI)
*** Health, Safety, Environmental Protection

All assessment and audit results are thoroughly analyzed and documented. If deficiencies are found, the company develops action plans together with the respective suppliers to ensure that they observe social, ethical and environmental standards in the future. Where improvement needs have been identified, we work together continuously with our suppliers to achieve these improvements. As a result, we did not have to terminate any supplier relationship in 2013 for reasons related to sustainability performance.

Our assessments and audits accounted for 34% of the total procurement volume in the Bayer Group with regard to sustainability performance and 51% of the procurement volume in high-risk areas, which are defined by a combination of country and material risk.

Sustainability training for purchasers and suppliers

Training for purchasers in the Bayer Group includes attending courses on sustainability aspects of procurement and our Code of Conduct. In 2013 we completely revised the training course on our sustainability assessment process via our collaboration platform.

ONLINE ANNEX: 3-8-5

Our purchasers are thoroughly trained in the EcoVadis assessment process, with 243 purchasers attending the training course in 2013. The subgroups also provide their respective purchasers with supplementary information. For example, HealthCare has initiated a sustainability roadshow for various local purchasing units. The purchasing and quality functions in Brazil, India and China received extensive training in the supplier evaluation process. MaterialScience held both a global and a China-specific procurement meeting to provide information on sustainability.

We also offer training courses for our suppliers. Both the information material and the range of courses were updated and extended in 2013.

ONLINE ANNEX: 3-8-6

The TfS initiative offers e-learning courses to provide suppliers with general information on the initiative and the audit process. The PSCI initiative likewise promotes continuing supplier development by means of the comprehensive information provided on the PSCI website, and by organizing training events and conferences on subjects such as occupational safety.

As part of the training and information program for suppliers, Bayer's company in India presents its BayBuy Awards at an annual Supplier Day. The awards for India's most sustainable suppliers are based on the national sustainability assessments.

The Supplier Days organized by HealthCare and MaterialScience at various locations in China in 2013 focused on sustainability.

Tackling child labor in the supply chain

For Bayer, responsible corporate governance includes recognizing and respecting human rights both internally and within our external sphere of influence. This includes the supply chain. Our Human Rights Position is unequivocal and includes a strict ban on child labor. We obligate our suppliers along our supply chain not to employ children. Particularly when working with suppliers in developing countries or emerging markets, we take care that they are not using child labor – which is still widespread in these regions.

For many years, CropScience has taken systematic action to prevent child labor in the seed supply chain in India through its Child Care Program. Teams from Bayer visit the fields used in cotton seed production at least six times each season in order to determine the age of the workers there. A separate organizational unit is responsible for this. Thanks to this stringent monitoring system, there are now only very few instances of child labor at our contractors, and we are closely tracking these cases. In India we have also carried out systematic field monitoring in vegetable seed production since 2009 and in the production of hybrid rice seed since 2010.

ONLINE ANNEX: 3-8-7

The table shows how cotton seed production has developed since the main 2009/2010 season, based on the results of field monitoring.

Field Monitoring Results: Production of Cotton Seed in India [Table 3.8.0-5]

	Season*								
	Kharif 2009/ 2010	Rabi 2009/ 2010	Kharif 2010/ 2011	Rabi 2010/ 2011	Kharif 2011/ 2012	Rabi 2011/ 2012	Kharif 2012/ 2013	Rabi 2012/ 2013	Kharif**** 2013/ 2014
Standing acres**	1,683	172	2,152	335	2,771	542	3,857	389	3,618
Monitored acres***	10,575	1,052	13,856	2,276	17,427	3,564	24,161	2,433	20,991
Labor details									
Total laborers monitored	35,826	3,902	43,150	7,198	52,979	12,128	82,192	9,253	60,422
Proven child labor cases	22	2	14	0	18	0	21	0	18
Adult laborers	35,804	3,900	43,136	7,198	52,961	12,128	82,171	9,253	60,404
Child labor incidence per monitored acre	0.002	0.002	0.001	0	0.001	0	0.001	0	0.001
Child laborers as a percentage of total laborers	0.06%	0.05%	0.03%	0%	0.03%	0%	0.03%	0%	0.03%

* Kharif growing cycle: cultivation in the rainy season (summer) and harvest in the fall/Rabi growing cycle: cultivation in the fall and harvest in winter
** 1 acre = 4,046.86 m²
*** cumulated depiction of the area under cultivation monitored on the basis of control inspections performed (at least 6 per season)
**** as of Dec. 31, 2013

Suppliers who show that they are strictly observing our ban on child labor receive a bonus from Bayer along with training in agricultural efficiency. Graduated sanctions are applied for non-compliance. These range from written warnings to termination of the contract in the case of repeated non-compliance. Once a year, the audit firm Ernst & Young (India) conducts unannounced inspections of randomly selected farms. The two indicators highlighted in the table are used to measure the success of our extensive package of measures.

We regard school attendance not only as essential for children's development but also as a tool to drive the elimination of child labor. As an important part of the child protection program, our "Learning for Life" initiative consists of projects aimed at ensuring that children and young people get a proper education. Between 2005 and the end of June 2013, the "Learning for Life" educational programs benefited more than 5,500 children and young people.

The Child Care Program has received broad public recognition. It is a multi-disciplinary project involving management, specialists from the Child Care Team, and staff from the seed production team and Corporate Communications, who play a key role in raising awareness for this issue.

MATERIAL AND RAW MATERIAL INPUTS

As the subgroups' business activities and therefore the materials they use differ fundamentally, each subgroup organizes the procurement of the materials needed for its own production operations. Sustainability considerations are important when procuring raw materials, an example being the purchase of renewables or minerals from conflict areas.

ONLINE ANNEX: 3-8-8

Renewables so far have played only a secondary role in Bayer's use of raw materials. We are using them more intensively when it makes technical, economic and ecological sense to do so.

At HealthCare, some hormones are synthesized by way of certain sterols or phytosterols generated as byproducts of the manufacture of vegetable oils from soybeans, canola or sunflowers. Palm oil or palm kernel oil is not used due to its low sterol content. We also purchase various steroids produced from diosgenin, which is mainly derived from yam root grown in China and other countries. In the fermentation process, we also use raw materials such as water, glucose, yeast, soybean starch, castor oil and corn steep water. Extracts of plant leaves (Centella asiatica) are used in some Consumer Care products. This plant is widely found in Asia and is not an endangered species.

MaterialScience is experimenting with the replacement of petroleum-based raw materials as part of its innovation and cooperation projects. For example, the subgroup is testing a biotechnological process that is based on the conversion of biomass by microorganisms and can supply material for the production of plastics. The use of carbon dioxide as a raw material for polyurethanes has already been successfully implemented at the pilot plant level – and the first results of an independent ecological assessment give grounds for optimism.

At the international level, companies are increasingly obligated to disclose the origin of certain raw materials used in their products. "Conflict minerals" from the Congo region are one example. Bayer is currently investigating whether minerals from this region – such as tin, tungsten and tantalum ores or gold – could have found their way into our products through the supply chain. In parallel with these efforts, we are working on a special process for systematically investigating and evaluating potential suppliers of such minerals.

HEALTHCARE

The Product Supply unit of HealthCare steers the subgroup's entire supply chain, from raw material procurement to manufacturing to product shipment, utilizing a global production network consisting of its own sites and those of subcontractors. The manufacturing of pharmaceutical products is subject to extraordinarily stringent quality standards. These standards are known collectively as "Good Manufacturing Practices" (GMP). Compliance with these requirements is regularly audited by internal experts, regulatory authorities and external consultants.

The **Pharmaceuticals** segment generally procures the starting materials for the active ingredients of its prescription pharmaceuticals from external suppliers. To prevent supply bottlenecks and mitigate major price fluctuations, these starting materials and the intermediates we do not produce ourselves are generally purchased under global contracts and/or from a number of suppliers we have audited and approved.

Our active ingredients are manufactured primarily at the sites in Wuppertal and Bergkamen, Germany, and Berkeley, California, United States. These substances are processed into finished products and packaged worldwide. Our medicines come in a wide range of delivery forms including solids such as tablets, coated tablets or powders; semi-solids such as ointments or creams; and liquid pharmaceuticals such as those used in injections or infusions. Our hormonal contraceptives are supplied as sugar- or film-coated tablets or used in intrauterine systems (coils), for example. Formulating and packaging takes place in Berlin, Leverkusen and Weimar, Germany; Garbagnate, Italy; Beijing, China; São Paulo, Brazil; and Turku, Finland. Our hemophilia drug Kogenate™ is manufactured by a biotechnological process at Berkeley, California, United States. Pharmaceuticals that we do not produce ourselves due to the use of special technologies are generally purchased under global contracts from suppliers we have audited and approved. For example, Betaferon™/Betaseron™ for the treatment of multiple sclerosis is produced by a contract manufacturer.

For the Consumer Care Division of the **Consumer Health** segment, we produce certain active substances, such as acetylsalicylic acid and clotrimazole, in La Felguera, Spain. The principal raw materials we purchase from third parties are naproxen, citric acid, ascorbic acid, other vitamins and paracetamol. To minimize business risks, we diversify our raw material procurement sources worldwide and conclude long-term supply agreements. Among the division's production sites are the facilities in Myerstown, Pennsylvania, United States; Cimanggis, Indonesia; Lerma, Mexico; Bitterfeld-Wolfen and Grenzach-Wyhlen, Germany; Madrid, Spain; and Segrate, Italy.

The Diabetes Care products (such as blood glucose meters) of our Medical Care Division are mainly procured from original equipment manufacturers. Material prices and availability are covered in most cases by long-term contracts. We hold strategic reserves of certain materials and finished products so that we can supply our customers consistently and reliably. The contrast agents for diagnostic imaging procedures are produced mainly in Berlin, Germany. Medical devices such as contrast agent injectors and mechanical systems for treating constricted or blocked blood vessels are manufactured at the U.S. sites near Pittsburgh, Pennsylvania, and in Minneapolis, Minnesota. Most of the materials and components needed to manufacture our medical devices are procured from external suppliers. The availability, quality and price stability of the materials are ensured by way of long-term agreements, careful choice of suppliers and active supplier management.

The Animal Health Division procures the pharmaceutical active ingredients for its veterinary medicines both from within the Bayer Group and from external suppliers throughout the world. Our animal health products are manufactured mainly at the sites in Kiel, Germany, and Shawnee, Kansas, United States, and marketed worldwide.

CROPSCIENCE

Global procurement and production network for seeds and crop protection products at CropScience

CropScience, too, manages procurement and production as a single organizational unit. This enables an integrated supply chain from raw material purchase through end-product manufacture to warehousing, followed by a two- or three-step distribution system depending on local market conditions.

Our principal procurement countries, representing the bulk of our procurement volume, are centrally managed. This enables us to operate efficiently in procurement markets and optimize our cost position. We mainly procure supplies of important raw materials on the basis of long-term supply agreements to minimize procurement risks such as supply shortages or substantial price fluctuations. Regular sustainability and quality audits of our suppliers ensure compliance with internal and external standards.

Crop Protection and Environmental Science products are mainly manufactured at our own production sites and formulating facilities. Among the largest are the facilities in Dormagen, Knapsack and Frankfurt am Main, Germany; Kansas City, Missouri, United States; and Vapi, India. Our network of decentralized formulation and filling sites enables us to respond rapidly to local market needs. At these sites the active ingredients are processed into herbicides, fungicides, insecticides, seed treatment products and Environmental Science products according to local requirements and application areas. Packaging of the products also takes place in these facilities.

Production in the Seeds business unit takes place at locations close to our customers in Europe, Asia, and North and South America at our own farms or under contract.

Investment in our global production network is continuing in order to create capacities for new products and technologies and to improve manufacturing processes. We plan to significantly increase our capital investment to meet the steadily rising demand in a competitive and timely manner. In September 2013, we therefore announced an increase in our capital expenditure budget. We now intend to invest some €2.4 billion in property, plant and equipment between 2013 and 2016.

MATERIALSCIENCE

Procurement at MaterialScience is globally steered by the Procurement & Trading unit. Worldwide procurement and trading processes are centrally managed to leverage synergies within MaterialScience.

Key raw materials for our MaterialScience products are petrochemical feedstocks such as benzene, toluene and phenol. We purchase these materials on the procurement markets, mainly under supply agreements. The operation of our production facilities also requires large amounts of energy, mostly in the form of electricity or steam. In steam and electricity generation, we aim for a balanced diversification of fuels and a mix of external procurement and captive production to minimize the price fluctuation risk.

The principal production facilities of MaterialScience are at Dormagen, Krefeld and Leverkusen, Germany; Shanghai, China; and Baytown, Texas, United States. These supply all the subgroup's business units and are centrally managed by the Industrial Operations unit. Further major production sites are located at Antwerp, Belgium; Brunsbüttel, Germany; Map Ta Phut, Thailand; and Tarragona, Spain. Each of these sites is managed by the respective business unit.

World-scale facilities reduce costs for commodities

In the field of commodities, we endeavor to reduce costs by operating high-capacity production facilities that enable us to supply our markets on an international basis. We maintain a relatively large number of production facilities in selected countries to serve our differentiated businesses. These facilities include systems houses, where we formulate and supply customized polyurethane systems, and plants where we compound polycarbonate granules to meet specific customer requirements or manufacture semi-finished products (polycarbonate sheets). We also operate regional production facilities for functional films made of polycarbonate or thermoplastic polyurethane.

9. Products, Distribution and Markets

Bayer does not tolerate legal violations in the marketing of its products. Responsible marketing means acting ethically and morally and adhering to sustainability principles. This involves communicating with our target groups in a transparent, consistent and reliable manner. We are also committed to regularly evaluating the properties of our products and acting on our findings where necessary. Our Group directive on "Responsible Marketing & Sales" was already adopted by all subgroups in 2012 and has been integrated into the relevant regulations. With distribution activities decentrally organized due to the diversity of Bayer's business portfolio, the directive's ongoing implementation and the respective training programs took place in a variety of ways in 2013.

HEALTHCARE

Broad product portfolio in the Pharmaceuticals segment

Our **Pharmaceuticals** segment supplies prescription products. Our range of cardiovascular products includes the anticoagulant Xarelto™, Adalat™ to treat hypertension and coronary heart disease, and Aspirin™ Cardio for secondary prevention of heart attacks. The product portfolio in women's healthcare comprises contraceptives such as YAZ™/Yasmin™/Yasminelle™, Mirena™ and the Essure™ procedure. We also offer specialty pharmaceuticals that are mainly prescribed by specialist physicians, including Kogenate™ for people with hemophilia A, Betaferon™/Betaseron™ to treat multiple sclerosis, the cancer drugs Nexavar™, Stivarga™ (regorafenib) and Xofigo™ (radium-223 dichloride), the eye medicine Eylea™ (aflibercept), and riociguat (approved in the United States and Japan under the trademark Adempas™) to treat two forms of pulmonary hypertension. Our pharmaceutical products are primarily distributed through wholesalers, pharmacies and hospitals. Co-promotion and co-marketing agreements serve to optimize our distribution network. For example, we cooperate with Janssen Pharmaceuticals, Inc. in the United States in the marketing of Xarelto™.

Consumer Health segment: focus on non-prescription products

The portfolio of our **Consumer Health** segment mainly comprises non-prescription products. The Consumer Care Division specializes in over-the-counter (OTC) medicines – those available without a prescription – and is among the leading suppliers in the OTC market with a portfolio covering all the major therapeutic areas. Our offering includes the pain relievers Aspirin™ and Aleve™ and the OTC medical skincare products Bepanthen™/Bepanthol™ and Canesten™. The product range also includes nutritionals such as One A Day™, Supradyn™, Berocca™ and Redoxon™, antacids such as Talcid™, and cough-and-cold products such as Alka-Seltzer Plus™ and White & Black™. We also offer prescription dermatology products. The division's sales and distribution channels are generally pharmacies, with supermarket chains and other large retailers also playing a significant role in certain important markets such as the United States.

In the Medical Care Division we offer blood glucose monitoring devices such as the single-strip Contour™ system and the multi-strip Breeze™ system. We also market the Contour™ USB meter, which features integrated diabetes management software and direct plug-in to computers. Outside Europe, these products are generally sold to consumers through pharmacies, drugstores, mass merchants, hospitals or wholesalers. In Europe, they are sold mainly through pharmacies. We are among the principal players in the market for blood glucose meters and are also the world's leading supplier of contrast agent injection systems for diagnostic and therapeutic medical procedures in X-ray, computed tomography and magnetic resonance imaging. We are among the leading companies in the field of mechanical systems for removing thrombi from blood vessels, offering service products for these systems in addition. Examples from our portfolio of contrast agents for diagnostic imaging are Ultravist™, Gadovist™/Gadavist™ and Magnevist™. Our products are marketed to cardiologists, radiologists and vascular surgeons in hospitals and out-patient clinical sites through a global direct sales organization, supplemented in some cases by local distributors.

The Animal Health Division offers an extensive portfolio of pharmaceuticals, nutritionals, grooming products and hygiene products for farm and companion animals. Our innovative Advantage™ family of products to protect dogs and cats from parasite infestation gives our company the number two position in the parasiticides market. The newly developed Seresto™ collar replaces conventional dog and cat collars with a modern system for controlled release of the active ingredient and reinforces our leading market position. Other important products include Baytril™ for the control of infectious diseases, Drontal™ and Drontal™ Plus wormers, and Baycox™ to treat coccidiosis in livestock. The integration of the prod-

uct portfolio we acquired in 2013 from Teva Animal Health Inc., United States, is progressing with the relaunch of companion and farm animal products in the U.S. market. Depending on local regulatory frameworks, animal health products may be available to end users on a veterinarian's prescription or prescription-free from veterinarians, pharmacies or retail stores.

Responsible business practices at HealthCare

In marketing its medicines, HealthCare applies strict standards and observes the relevant international industry codes. This includes all codes of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) and of regional associations such as the European Federation of Pharmaceutical Industries and Associations (EFPIA) concerning relations with health care professionals and patient organizations. These codes include rules governing the distribution of advertising materials and product samples, cooperation with health care and pharmacy professionals under speaker and consultancy agreements, and scientific studies. HealthCare has also undertaken to implement the EFPIA transparency code. The codes apply to prescription medicines. There are also local laws and codes applicable to all medicines.

ONLINE ANNEX: 3-9-BHC-1

The IFPMA code applies not only to prescription medicines but also to over-the-counter products that are directly advertised to health care professionals. Since 2012 the IFPMA code has also included basic principles for cooperation with patient groups. HealthCare views the IFPMA code as a global minimum standard. The EFPIA Code of Conduct for cooperation with patient organizations mandates universal transparency and requires that these organizations' independence not be compromised by the provision of support to patient organizations. Under the code, donations to health care professionals or organizations must be disclosed on a publicly accessible website. This information must be published for the first time by June 30, 2016, and must include the relevant donations made in the 2015 calendar year.

These local codes generally serve to bring the provisions of the global or regional codes mentioned above into line with local laws. In the event of discrepancies among the rules we have committed to respect, HealthCare always observes the more stringent requirement.

We regard the WHO's Ethical Criteria for Medicinal Drug Promotion as the minimum standard for the advertising of pharmaceutical products. We also observe national ethical standards, which usually are also enshrined in industry codes at the local level, an example being that of the association "voluntary self-regulation for the Pharmaceutical Industry (FSA). The provisions of our Group-wide Corporate Compliance Policy, the Responsible Marketing & Sales Policy, and the Directive on Integrity & Responsibility in Communications and Marketing also apply.

HealthCare has summarized the key requirements for compliant and ethical conduct in globally valid HealthCare Compliance Manuals that set minimum standards for all activities.

ONLINE ANNEX: 3-9-BHC-2

Specifically, the minimum global standard for responsible marketing and ethically acceptable dealings with important stakeholders such as officials, health care professionals and patient organizations is established by the Manual for Human Pharmaceuticals and Consumer Care Businesses, the Manual for Medical Devices Business and the Manual for Animal Health.

The global training program for the compliance manuals launched in 2012 was continued in 2013. The training materials are now available in eight languages. There are also web-based and personalized compliance training courses for which employees can enroll via the intranet. These web-based programs were honored with the Brandon Hall Excellence in Learning Award 2013, receiving the silver medal in the "Best in Compliance Training" category. Additional support and information are available for employees in conjunction with all training courses.

As part of our compliance management system, we register and investigate any suspected violation of our responsible marketing principles. This includes complaints received from either inside or outside the company.

CROPSCIENCE

Integrated product portfolio at CropScience

CropScience offers a comprehensive range of products and services for agriculture in the areas of seed breeding, crop protection and plant traits. It also supplies products for non-agricultural pest and weed control. These are commercialized according to local market conditions. Our business is subject to the growing seasons for the relevant crops and the resulting sales cycles.

CropScience markets its products in more than 120 countries. In the coming years we intend to continue expanding our business, particularly in the Emerging Markets, by deploying innovative, leading-edge technologies in order to meet the increasing global demand for high-quality food and feed.

The marketing and distribution activities of the Crop Protection/Seeds operating segment are aligned to our product range.

The Crop Protection business is based on a broad portfolio of highly effective herbicides, fungicides, insecticides and seed treatment products with chemical or biological modes of action. Our innovation capability and long years of experience with crop protection products have placed us among the global leaders in this market. The activities of the Seeds unit are focused on cotton, oilseed rape/canola, rice, soybeans and vegetables. We market high-value seeds based on our own research and breeding expertise. In our core crops, we have achieved strong market positions and are internationally represented.

Our Crop Protection products are marketed through a two- or three-step distribution system, either via wholesalers or directly to retailers. We also sell products directly to customers in selected markets where farmers and market conditions require this mode of distribution.

Our seeds are sold to growers, plant raisers, specialist retailers and the processing industry. Plant traits developed using modern breeding methods are either incorporated into our own seed varieties or licensed to other seed companies.

The products of our Environmental Science operating segment are based on both proprietary and inlicensed active ingredients and designed for non-agricultural uses. We market pest control and plant care products both to private customers in the home and garden sector and to professional users in the green industry (including for public parks and golf courses), forestry, infrastructure (such as railroad tracks and roads), professional pest control and public health (vector control to combat malaria and dengue fever). CropScience is among the world's leading suppliers of products and solutions for such non-agricultural uses. The Environmental Science products are mainly sold through wholesalers and specialist retailers. Much of our business in the area of vector control is transacted in response to tendering by government agencies and non-governmental organizations.

CropScience follows the International Code of Conduct on the Distribution and Use of Pesticides issued by the Food and Agriculture Organization of the United Nations (FAO). This forms the basis for CropScience's expanded Product Stewardship Policy, which satisfies the requirements of the Group's position on responsible marketing and sales. Training materials to explain this Group position have been distributed throughout the global organization and are posted on the Bayer intranet.

ONLINE ANNEX: 3-9-BCS-1

In Germany, responsible marketing had already been a focus of all training programs by the end of 2012, with other countries following suit in 2013. In parallel with the training courses on compliance, the topic of responsibility marketing and sales has formed an integral part of the Marketing & Sales Excellence training programs at CropScience since the fall of 2012.

MATERIALSCIENCE

One of the world's largest polymer companies, MaterialScience is a manufacturer and supplier of precursors for rigid and flexible foams, plastic granules, and raw materials for coatings and adhesives. The subgroup holds leading competitive positions in these product groups. We also manufacture and market plastic sheets, functional films and selected inorganic basic chemicals. Some of these chemicals serve as raw materials for the manufacture of our products. Others are generated as by-products of our production and sold to external customers.

Our products are used mainly in the automotive, construction, electrical/electronics, furniture, wood, textile, sports and leisure goods, medical equipment and chemical industries.

Rigid or flexible polyurethane foams based on our diphenylmethane diisocyanate (MDI), toluene diisocyanate (TDI) or polyether (PET) raw materials have found a broad range of applications in a variety of industries. Automotive uses include the manufacture of car seats and components. These foams are used in the construction industry and the refrigeration chain as insulating materials, and in the furniture industry for cushioning and mattresses.

Our polycarbonates are marketed as granules (Makrolon™), sheet, films and blends (APEC™, Bayblend™). Their uses include electrical appliance housings, CDs/DVDs, roof structures and automotive headlamps.

The Coatings, Adhesives, Specialties business unit manufactures raw materials for car and commercial vehicle coatings and for footwear and textile adhesives, for example. Specialties include films used in ID and credit cards, along with raw materials for cosmetic and medical products.

We market our products mostly through regional and local distribution channels, making increasing use of e-commerce platforms for order processing. We also work with trading houses and local distributors who are responsible for business with small customers. Major customers with global operations are serviced directly by our key account managers.

In the marketing of our products, we also take into account all the requirements of the Group's position on responsible marketing and sales. The importance of observing antitrust law and preventing corruption is regularly emphasized in training programs, internal communications and discussions with management.

ONLINE ANNEX: 3-9-BMS-1

The third major training focus at MaterialScience in 2013 regarding responsible marketing and sales was product liability. A total of 77 training courses were held worldwide to inform some 1,700 employees working in the areas of sales and marketing, quality management, development and production.

10. Product Stewardship

We assess the possible health and environmental risks of a product along the entire value chain. This starts with research and development and continues through production, marketing and use by the customer through to disposal.

At issue here are not just the safe handling and use of our products, but also the transparent communication and transfer of product safety information. Product stewardship involves both compliance with statutory requirements and voluntary commitment. Here, we also take into account the precautionary principle as explained by the United Nations and the European Commission.

ONLINE ANNEX: 3-10-1

The precautionary principle describes the preventive use of protective measures against risks, should sufficient scientific information not be available. It is a possible tool for consumer protection and risk management. It is explained in Principle 15 of the Rio Declaration of the United Nations Conference on Environment and Development (1992) and in the communication from the European Commission (COM 2000/1). This principle is applied whenever there is scientific uncertainty in a given area and sufficient evidence also exists that there could be a sustainable impact on people or the environment. We support the application of the precautionary principle according to the stipulations of the European Commission. These measures should be proportionate – i.e. they should meet the chosen level of protection; be applicable without discrimination, in other words comparable situations should not be treated in different manners; be consistent with similar measures undertaken previously; and be examined to determine which costs and benefits are associated with the application of the precautionary principle. The measures undertaken are reviewed as soon as new scientific data are available for the particular situation.

Since 1994 Bayer has supported the voluntary Responsible Care™ initiative of the chemical industry, which was globalized in 2006 with the introduction of the Responsible Care Global Charter. We cover all main elements of the charter with our HSEQ (health, safety, environmental protection and quality) management systems and activities. We are also actively involved in the further development of scientific risk assessment through associations and initiatives.

ONLINE ANNEX: 3-10-2

International associations such as the European and international chemical industry associations (CEFIC/ICCA) and the OECD (Organisation for Economic Co-operation and Development), as well as initiatives such as the ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals) or the EPAA (European Partnership for Alternative Approaches to Animal Testing), work to evolve the scientific assessment of chemicals, research new test methods and monitor the implementation of statutory regulations. Bayer actively accompanies these efforts in its association activities. We are also involved in the Long-Range Research Initiative of the ICCA and endorse the goals of the WHO and E.U. action plans for improving health and environmental protection, for example with the further development of human biomonitoring through an alliance with the German Chemical Industry Association (VCI) and the German Federal Ministry of the Environment.

IMPLEMENTATION OF REGULATIONS AND VOLUNTARY PROGRAMS PERTAINING TO CHEMICALS

Since 2007 we have operated in accordance with the European chemicals regulation REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). It affects all our activities as manufacturer, importer and user. To adequately address the scope and complexity of the REACH requirements, we have approved Group-wide and subgroup-specific regulations. The registration obligation under REACH applies irrespective of marketing activities for all substances that we produce or import in quantities of more than one metric ton.

ONLINE ANNEX: 3-10-3

We observe the required registration phases for substances that have been used for a longer period of time. The final registration phase will end on June 1, 2018. Substances registered already during the first two phases are now being evaluated by the regulatory authorities. In the future this could result, for example, in additional testing requirements, new risk management measures or inclusion in the authorization procedure.

A number of Bayer substances are also affected by the REACH authorization process, which restricts the use of particularly hazardous substances or can lead to their replacement or prohibition.

The authorities monitor the implementation of REACH through regular inspections. So far none of the inspections at Bayer has resulted in complaints. As we also use many products from other manufacturers, we maintain close contacts with our suppliers and ensure that they confirm compliance with REACH for these products.

Our Group Regulation "Substance Information and Its Availability" extends beyond the scope of legal requirements. In this way we are ensuring that substance assessments comparable to those established under REACH will also be applied at Bayer sites that are not subject to this European regulation.

At the same time, we are implementing the Globally Harmonized System (GHS) for the classification and labeling of chemicals, which came into force in the European Union (E.U.) in 2009. The purpose of this regulation is to achieve a globally standardized system for classifying chemicals and labeling them appropriately on packaging and in safety data sheets.

We also support the Global Product Strategy (GPS), a voluntary commitment by the chemical industry initiated by the International Council of Chemical Associations (ICCA). Its objective is to improve knowledge about chemical products, especially in emerging and developing countries, and thus increase safety in the handling of these products. The ICCA has established an information portal through which summarized details on products (GPS Safety Summaries) are made available. GPS is of particular relevance for MaterialScience.

In accordance with the respective product safety and information obligations, all subgroups compile product information on raw materials, intermediates or end products. To ensure worldwide access to this information, our subgroups use corresponding IT systems, including for product labeling.

PRODUCT STEWARDSHIP IN THE USE OF BIOTECHNOLOGY

Product development in our Pharmaceuticals and Crop Protection businesses makes use of biotechnological methods. Biotechnology has already gained significant importance in pharmaceutical product development. The HealthCare products Betaferon™/Betaseron™, Kogenate™ and Eylea™ are manufactured by a biotechnological process.

Plant biotechnology can help to improve crop yields, yield security and the stress tolerance of plants without the need for an increased input of resources through both genetic engineering and non-genetic engineering methods.

Safety is Bayer's top priority in the use of biotechnology too. Beyond our observance of all relevant legal provisions, we have formulated a Bayer Group Regulation "Position on the Responsible Use of Gene Technology" and specific regulations for the subgroups and service companies.

ONLINE ANNEX: 3-10-4

Before any product reaches market maturity, we subject it to a stringent approval procedure to determine whether it is safe for human health, animals and the environment.

HealthCare has established strict safety measures for handling and for research & development in its "Biological Safety" regulation and its "Requirements for the safe handling of biological agents" procedure.

In 2013 CropScience maintained its focus on product stewardship for customers both within and outside the company through its activities in the context of the industry's Excellence Through Stewardship Program. Product stewardship and quality management processes are the top priority in all activities connected to plant biotechnology.

We provide our stakeholders with comprehensive, transparent and reliable information about our products and services in accordance with our Bayer Group Regulation "Responsible Marketing & Sales."

FOCUSING ON ANIMAL WELFARE

During research into new active pharmaceutical ingredients, animal studies are prescribed and only replaceable to a certain extent. They are essential from a scientific viewpoint to assess the effects of our products, especially on people, but also on nature and the environment. In our handling of animals, we respect all legal requirements pertaining to animal welfare. Should animal studies be required to evaluate our substances, Bayer observes the so-called 3Rs principle:

- Replace: prior to each project, we check whether a recognized method is available that does not rely on animal studies and apply it.
- Reduce: in case no alternative method exists, only as many animals are used as are needed to achieve scientifically meaningful results based on statutory requirements.
- Refine: we make sure animal studies are performed in a way that is as gentle on the animals as possible.

www.animalstudies.bayer.com

Our principles also apply to both the research institutes we commission and our suppliers, whose compliance with our animal welfare requirements we regularly monitor.

ONLINE ANNEX: 3-10-5

Bayer's Global Animal Welfare Committee monitors the observance of our principles on animal welfare and animal studies within the Bayer Group and in external studies. In 2011 this body – comprised of the animal welfare officers at our research sites and further Bayer experts – began defining performance indicators. Within this context, we each year analyze aspects such as the number of animals used, the number of animals at contract research organizations (CROs), the breakdown according to species and the ratio of regulatorily required studies to exploratory studies. Other indicators such as the number and quality of audits performed at our suppliers and CROs have been initiated and are being internally evaluated. We have begun with the establishment of an internal Bayer database that combines all information about our own animal studies and the evaluation of our cooperation partners. Bayer participates in several European consortia that aim to reduce the number of animal studies or improve their validity: we are active, for example, in the European Partnership for Alternative Approaches to Animal Testing (EPAA); we also help to implement the Safety Sciences for Medicines (SafeSciMET) program and are involved in the leadership of the eTOx project and the MARCAR project of the Innovative Medicines Initiative (IMI). Furthermore, we support the Foundation for the Promotion of Alternate and Complementary Methods to Reduce Animal Testing (SET).

PROTECTION AGAINST PRODUCT COUNTERFEITING

Illegal trade with counterfeit medicines and crop protection products is on the rise worldwide. Counterfeit products in the areas of health care and nutrition put patients and consumers at risk. Substandard products also cause considerable financial damage for both producers and users.

Industry, associations, governmental agencies and non-governmental organizations must join together to fight product counterfeiting. Bayer continuously advocates the strengthening and expansion of existing laws and provisions aimed at the identification and confiscation of illegal products. We undertake a wide range of measures to inform our customers about both the danger posed by, and the insufficient effectiveness of, counterfeit products.

ONLINE ANNEX: 3-10-6

Counterfeit pharmaceuticals rank near the top of the E.U.'s customs statistics. The number of investigations in Germany increased by 39% in 2012 compared with the previous year, and has risen by an even more substantial 100% since 2010. In close cooperation with the authorities, Bayer works to protect the health of patients, customers and users. The focus is on education and information to ensure the reliable identification of our original products, as well as on legal steps aimed at minimizing illegal trade.

Through the internet platform "Beware of Counterfeits," HealthCare informs patients about the risks of counterfeit pharmaceuticals and provides patients with tips on how they can protect themselves.

Bayer participates in the Pharmaceutical Industry Initiative to Combat Crime (PIICC) of Interpol to counteract pharmaceutical counterfeiting through global prosecution and the elimination of related criminal networks.

We also support the establishment of a pan-European system for the verification of pharmaceutical packaging that satisfies the requirements of the E.U. Falsified Medicine Directive. We participate in the SecurPharm project in Germany.

According to an estimate by Europol from 2012, illegal products account for 25% of the crop protection market in some E.U. member states. CropScience provides information and anti-counterfeiting training materials (manuals, workshops, etc.) to retailers, farmers and authorities. In 2013 training courses were conducted in the Middle East, in several E.U. countries and in other regions at which Bayer warned of the dangers of product counterfeiting. In this connection, we also support initiatives by global and regional association committees such as the Anti-Counterfeiting Expert Group of the European Crop Protection Association (ECPA) and the Anti-Counterfeiting Steering Committee of the industry association CropLife International (CLI).

CropScience works together intensively with national and international authorities, thus frequently enabling the confiscation of counterfeit products. In 2013 we further intensified our cooperation with the European authorities to support them in their investigation into criminal networks that place illegal and counterfeit crop protection products onto the European market. CropScience works together with shipping companies and European ports of entry to prevent the transport of counterfeit products by more closely inspecting freight and customers, among other measures. Most counterfeit products originate in Asia and reach the trade market through central European cargo ports. With our support, substantial quantities of illegal products were confiscated by the port authorities again in 2013. CropScience also carries out its own inspections of suspicious goods shipments. In the reporting year, legal action was successfully taken four times against sellers of counterfeit parallel imports in Germany alone.

HEALTHCARE

BENEFIT-RISK MANAGEMENT FOR MEDICINAL PRODUCTS AND MEDICAL DEVICES

HealthCare continuously assesses the medical benefit-risk balance of its pharmaceuticals and medical devices throughout their entire life cycle. For this process, experts from various disciplines form cross-functional Safety Management Teams (SMTs). These teams jointly evaluate the available benefit and risk data along with other relevant information on the product in order to identify possible safety risks at an early stage and assess the medical benefit-risk balance. The evaluation also makes use of external databases so as to ensure as broad a base of data as possible. Should significant risks be identified, HealthCare immediately takes measures to minimize them, such as updating the product information for patients and physicians.

ONLINE ANNEX: 3-10-BHC-1

Further tools in risk minimization programs can include targeted information, e.g. patient education brochures, and training measures for health care providers and patients. SMTs compile medical benefit-risk data and information and produce detailed safety risk management plans. These plans are updated as soon as relevant new benefit-risk data become available. Implementation of risk minimization activities is coordinated by local SMTs in the country organizations.

The Global Pharmacovigilance unit of HealthCare pools safety-relevant information on our products in the company's own pharmacovigilance database on an ongoing basis. This information is continuously updated and evaluated by experts. In this process, Bayer works closely with the responsible regulatory and oversight authorities at an international, national and regional level. These include the U.S. Food and Drug Administration (FDA), the European Medicines Agency (EMA) and Germany's Federal Institute for Drugs and Medical Devices (BfArM).

HealthCare's quality and risk management functions make further contributions to increased safety. We examine external and internal quality assurance requirements for our products through systematic internal inspections – not just in research and development, but also in production. These inspections also cover institutes sub-contracted by us and our suppliers. Through our safety risk management system, drug product risks are systematically identified and assessed, and the necessary steps initiated. Countries and regions receive continuous support to help them comply with regulatory requirements for pharmaceuticals.

www.annual-report2013.bayer.com/clinical-trials

Scientific publications by our researchers satisfy recognized international standards that we have undertaken to observe in our Good Publication Policy. We base the implementation of all clinical studies on the Good Clinical Practice guidelines of the World Health Organization (WHO) and on the guidelines of the International Conference on Harmonization (ICH). We disclose the methods and results of clinical trials.

ANALYSIS OF PHARMACEUTICAL TRACE AMOUNTS IN THE ENVIRONMENT

Active pharmaceutical ingredients can enter the environment through human excreta or livestock excrement, improper disposal by users or residues in wastewater from pharmaceutical production.

To assess the potential environmental impact of our pharmaceutical products, HealthCare carries out ecotoxicological investigations of the environmental behavior of trace amounts and degradation products. These assessments are contained in the dossiers submitted to the European regulatory authorities for both veterinary and human pharmaceuticals. It must be demonstrated during the approval procedure that no significant risk exists for the environment when the drug products are used correctly.

Internal company wastewater standards are in place to ensure that no risk to the environment results from the release of traces of active ingredients in wastewater from production sites. The company aims to define specific threshold values that must be met by all HealthCare production sites worldwide.

Measurements carried out by authorities and scientific institutes have revealed that the concentration of individual active pharmaceutical ingredients from human or veterinary medicines present in drinking water is lower than the level that would have pharmacological effects in humans. On the basis of our current knowledge, the presence of individual active pharmaceutical ingredients in bodies of water or drinking water does not pose any risk to humans. This is confirmed by the WHO Report on Pharmaceuticals in Drinking Water published in 2012.

ONLINE ANNEX: 3-10-BHC-2

At the scientific level, HealthCare participates in projects aimed at further researching and reducing pharmaceutical residues in the environment:

Within the PILLS project concluded at the end of 2012, HealthCare and its European partners examined the extent to which new purification technologies at so-called point sources are able to completely eliminate pharmaceutical residues. The project partners demonstrated that the construction of wastewater treatment facilities at hospitals featuring special purification technology can further reduce the active ingredient content in wastewater. However, the cost of this purification technology currently remains substantial. The E.U.-sponsored successor project noPILLS therefore examines whether it is possible to address the problem at a lower cost directly at the point of entry. noPILLS also focuses on studying the influence on consumer behavior, for example, with regard to the disposal of expired drug products. Bayer is a member of the Scientific Advisory Board of noPILLS too.

In Germany, HealthCare participates in the "Risk Management of Emerging Compounds and Pathogens in the Water Cycle" (RISKWA) initiative sponsored by the German Ministry for Education and Research. HealthCare is a member of the steering committee.

SAFETY AND QUALITY STANDARDS AT ANIMAL HEALTH

In line with the statutory requirements, strict quality standards apply to all Animal Health product classes. Safety and quality standards comparable to those governing human medicine apply for veterinary pharmaceuticals such as parasiticides, anthelmintics or antibiotics. Within the scope of the approval procedures, Animal Health carries out studies in order to minimize the environmental impact of the products' use.

We train veterinarians, farmers and private users in the responsible use of our products. In this context, we also support the European Platform for the Responsible Use of Medicines in Animals, which brings together various partner organizations from politics, industry and society.

CROPSCIENCE

Safety is the top priority with products from CropScience. We analyze already prior to the development of a product whether the envisaged solution is compatible with our sustainability approach. During the development phase, we examine the products in stringent tests that are monitored by the authorities. At issue here are an active ingredient's toxicological properties on the one hand and on the other hand the question of how significant the remaining trace amount of a crop protection product is following proper application to the plants. Before a product is introduced to the market, we conduct numerous further safety tests with regard to its use and environmental behavior, depending on the product area.

CropScience allowed the sale of all remaining WHO Class I insecticide formulations for leaf and soil applications and seed treatments to expire at the end of 2012. All insecticides affected were replaced by modern, targeted and more environmentally friendly formulations.

CropScience observes the International Code of Conduct on the Distribution and Use of Pesticides of the United Nations Food and Agriculture Organization (FAO). The principles of this code cover the entire life cycle of a product, from its development to its application and beyond. We implement all major aspects of responsible product handling in our Product Stewardship Program, which is based on the principles of our Product Stewardship Policy.

ONLINE ANNEX: 3-10-BCS-1

Even beyond its core business, CropScience participates specifically in projects aimed at added product stewardship. We are a member of the Better Sugarcane Initiative, which works to promote sustainable sugarcane cultivation in Brazil, and the International Sustainability & Carbon Certification organization, which is working to establish a system for certifying biomass and bioenergy. We also take part in the Round Table for Responsible Soy, which works to promote sustainable soybean production, as well as in the Round Table for Sustainable Palm Oil Production, an organization that promotes sustainable cultivation methods for the production of palm oil.

RESPONSIBILITY FOR CUSTOMERS AND PARTNERS

The application of crop protection products requires the greatest possible care. Supporting our customers and partners in the proper and safe handling of the products is therefore a focus of product stewardship at CropScience. We address farmers and dealers particularly through numerous programs worldwide. Targeted workshops are aimed at enabling effective application of our products and ensuring the safety of users, the environment and consumers. Furthermore, we provide our customers with handbooks explaining the safe use, storage and disposal of all of our products.

ONLINE ANNEX: 3-10-BCS-2

CropScience concentrated its training activities in 2013 on the Asia and Latin America regions. In India, for example, the subgroup has been organizing general training and information events, through which 600 farmers receive training in good agricultural practice. They learn how they can enhance the growth of their produce, use crop protection products effectively and safely, and thus increase the quality of the goods they produce. The smallholders are also shown new ways of marketing their products and thus increasing their profits.

Promoting agricultural development is often a more effective way to fight hunger and poverty than other forms of support. Higher incomes in turn enable farmers in countries such as India to improve their standard of living and invest more in their children's education and their own businesses. Value is created for society as a result of the increased production of high-quality food. With these measures, we contribute to sustainable agricultural development.

In Latin America, we combined all our activities dealing with product safety measures within our AgroVida program. This comprises various initiatives with which we have been continuously increasing the farmers' safety awareness and specialist expertise since the 1990s. Safety training offerings for farmers play a role here, for example. In 2013 we trained some 20,000 farmers in the Andean region and approximately 3,700 farmers in the Central America and Caribbean region (excluding Mexico). We also carried out safety training measures in numerous African countries in 2013.

Bayer supports industry's efforts in various countries to establish a cross-company waste disposal concept for used packaging and containers. In anticipation of such a solution, Bayer also established its own disposal systems.

In the area of water pollution control, we offer customers a biological purification system, Phytobac™. This is intended to prevent the discontinuous discharge of crop protection active ingredients in the disposal of residual liquids that are generated during the filling and cleaning of spraying devices. In Europe, there are already around 2,500 Phytobac™ facilities. It is planned to introduce this system in Asia and Latin America as well.

Furthermore, we also work to improve technical solutions to minimize risks associated with the use of our products: in Europe, for example, we drove forward the optimization of sowing machines to provide better protection for users and the environment. The goal here was primarily to restrict the spread of dust.

The company's range of continuing education programs for product stewardship is rounded out by internal employee training measures. Our aforementioned Product Stewardship Policy also provides information on all principles for the responsible handling of our products, combined with specific instructions for use for our employees and those who work with our products.

BEE HEALTH AND CROP PROTECTION

Crop protection products that benefit farmers, consumers and the environment are necessary to safeguard the nutrition of a growing world population both now and in the future. At the same time, it is essential to protect the pollinators that contribute to a wide variety of healthy foods. In 2013 the debate surrounding the use of certain neonicotinoid crop protection products and the subjective assessment of their impact on bee health had an effect at the political level. As a result, the European Commission restricted the use of a number of products in this active ingredient class for certain applications in Europe. Bayer considers the decision by the European Commission to be scientifically unjustified and legally flawed. The active ingredients in question were extensively examined with regard to their impact on bee health already during the approval procedure. Bayer has appealed the decision by the European Commission in order to ensure legal certainty for approval procedures. Bayer continues to work on behalf of bee health and the responsible use of crop protection products. Within the context of its product stewardship, the company invests in research to minimize the effects of crop protection products on honey bees.

ONLINE ANNEX: 3-10-BCS-3

In 2012 Bayer launched a worldwide bee care program to promote a better understanding of the many factors that can impact bee health. This program included the construction of the first Bayer Bee Care Center at the site of CropScience and HealthCare's Animal Health Division in Monheim, Germany. CropScience's center in Monheim, which opened in June 2012, combines Bayer's extensive knowledge and expertise in bee health under one roof. It also serves as a platform for dialogue with stakeholders who share our interest in promoting bee health worldwide. Following the success of this facility, a second Bayer Bee Care Center will open in 2014 that will deal specifically with bee health

issues in North America. The North America center will be located at the U.S. headquarters of CropScience at Research Triangle Park near Raleigh, North Carolina, United States, and will bring together important technological, scientific and academic resources.

There is broad consensus among scientists who work in the area of bee health that the spread of the difficult-to-combat Varroa mite presents the main risk to bee health, partly because this pest transmits numerous viral diseases to bees. The Animal Health Division of HealthCare is working with researchers at the Institute for Apiculture in Oberursel, Germany, to develop the Varroa gate – an innovative way to control Varroa mites that is intended to keep this parasite from infesting beehives. However, another important factor that can impact bee health is generally more intensive agriculture in some regions, which limits suitable food sources for bees and breeding places for wild bees.

In addition to the focus on bee health, we assign importance to the product stewardship measures we are developing to accompany the use of our crop protection products. These initiatives include a new conveyor technology in the United States for sowing machines that reduces friction and thus promotes the even flow of seed; the additional labeling of seed sacks; two new technologies developed in Europe to treat exhaust air during sowing; and new, even more stringent quality control standards for seed dressing.

We have also launched an extensive bee monitoring program that is being implemented in five European countries (France, the United Kingdom, Germany, Hungary and Poland). The tests are carried out on winter canola, a crop that is very attractive for bees and is generally treated with neonicotinoid seed dressings. The monitoring includes a scientific study led by an independent research institute that will be implemented at various sites in the above countries and will begin with the sowing of the winter canola in summer 2014. In addition, to illustrate the monitoring activities a network of agricultural demonstration plants is being established in these countries that will come into play in spring 2014. These activities are scheduled to take two to three years.

CropScience remains convinced that neonicotinoids are safe for bees if they are used responsibly and properly. Our view is supported by the analysis of monitoring studies that were carried out by independent institutes in addition to the studies generated in extensive approval procedures. The current findings and many years of safe application of these products in agricultural practice confirm the results of the risk assessments performed by the E.U. member states' regulatory authorities on neonicotinoid seed dressings. These results state that the products are harmless to bee colonies provided they are used according to the product information. We initiated the above additional monitoring study independently of the numerous scientific studies that confirm the safety of neonicotinoids.

MATERIALSCIENCE

The products of MaterialScience satisfy the most stringent of safety requirements. This applies not just to those substances subject to standard review in accordance with the European REACH regulation. Within the context of the voluntary Global Product Strategy (GPS) of the chemical industry, we also assess the substances we use and reduce potential health and environmental risks that could result from our chemicals. The product safety assessments apply to the entire life cycle of a product – from research and procurement through production and logistics to application, disposal and recycling. Our product stewardship does not just end with our company, but also includes suppliers, customers and partners. GPS is accessible at MaterialScience through the "Product Safety First" internet portal, and has been available worldwide in seven languages since 2013. Through this website, we inform customers and other interest groups about our activities and product safety assessments.

ONLINE ANNEX: 3-10-BMS-1

A product safety assessment at MaterialScience takes place in several steps: first, chemicals that are subject to statutory regulations are identified and the corresponding laws compiled. Their risk potential is then examined so as to provide a basis for the effective minimization of risks. Such steps can include proposals for technical measures such as protective clothing, or marketing restrictions. Finally, we produce the legally required material safety data sheets, technical information sheets and labeling for the chemicals.

For especially important products such as MDI, TDI, polycarbonate and polyether, MaterialScience additionally works with associations to draw up environmental product declarations and eco-balances certified according to ISO 14040 and 14044 and based on industry averages.

With regard to substances that come into direct contact with food, MaterialScience is following the scientific discussion about the chemical Bisphenol A (BPA), a feedstock for various plastics. Critics are concerned that health risks could result for users if traces of BPA are released from polymers. As documented by numerous scientifically valid studies, we are convinced that the safety of BPA is ensured in its existing areas of application. This assessment is consistent with evaluations by the responsible regulatory authorities in Europe, the United States, Australia, Japan and other countries. In cooperation with the PlasticsEurope association, we work to make the discussion more objective through being based on scientific analysis.

MaterialScience discontinued its work on carbon nanotubes (CNTs) in 2013 due to strategic considerations. Researchers from MaterialScience had collaborated with external partners in recent years to resolve complex issues related to the safe production of specific carbon nanotubes. Much of the knowledge gleaned has already been made available to other companies and research institutions within the Innovation Alliance for Carbon Nanotubes (Inno.CNT).

11. Safety

Safety management is a keystone of corporate responsibility in the Bayer Group. We consider the prevention of accidents in day-to-day work, in the operation of production facilities, and on work-related travel and transportation routes to be a top priority. Our activities in the areas of health, safety, environmental protection and quality (HSEQ) are geared to ensuring the occupational health and safety of employees, contractors and suppliers on our company premises and under the supervision of Bayer, and the smooth and safe operation of our facilities. In this way, we also reduce running costs by avoiding damage and work disruptions.

At the Group level, responsibilities and framework conditions for HSEQ are regulated through appropriate directives. Operational responsibility lies with the boards of management/executive boards of the respective subgroups and service companies and the corresponding line organizations, who have their own management systems, committees and working groups to steer HSEQ. Continuous review and revision of directives and regular internal audits ensure that our HSEQ management systems meet the specific requirements in each case.

OCCUPATIONAL HEALTH AND SAFETY

The rate of occupational injuries with lost workdays at Bayer has been falling for several years. In 2013 we were once again able to report a reduction in injury figures thanks partly to intensive training and awareness-raising.

We record all injuries to Bayer employees requiring medical treatment that goes beyond simple first aid. These are indicated by the Recordable Incident Rate (RIR), which covers both injuries with lost workdays and those without. In 2013 this rate dropped to 0.47 cases per 200,000 hours worked (2012: 0.49) in the Group. This means that, in statistical terms, one recordable incident occurred for around every 425,000 hours worked.

The rate of recordable occupational injuries with lost workdays (LTRIR, Lost Time Recordable Incident Rate) also fell. In 2013 it stood at 0.26 (2012: 0.27).

Unfortunately, in 2013 we had to report the work-related death of a Bayer employee in Mexico and of a contractor's employee in China.

Occupational Injuries [Table 3.11.1]

	2009	2010	2011	2012	2013
Occupational injuries to Bayer employees with lost workdays (LTRIR*)	0.40	0.34	0.31	0.27	0.26
Recordable occupational injuries to Bayer employees (RIR*)	0.62	0.62	0.56	0.49	0.47
Fatal injuries (total)	4	4	3	2	2
of which Bayer employees	4	4	2	2	1
of which contractor employees**	0	0	1	0	1

* The values up to 2010 were calculated on the basis of the former MAQ values and do not include work-related illnesses.
** employees working for third parties whose accidents occurred on our company premises and under Bayer supervision

The injury figures varied both within individual regions and according to subgroup/service company.

ONLINE ANNEX: 3-11-1

Recordable Occupational Injuries (RIR) to Bayer Employees by Region [Table 3.11.1-1]

	2012	2013
Europe	0.21	0.72
North America	0.56	0.49
Asia/Pacific	0.54	0.20
Latin America/Middle East/Africa	0.53	0.40
Total	**0.49**	**0.47**

The unusually sharp increase in the RIR injury rate in Europe is currently being closely investigated.

Since 2012 workplace-related illnesses have been recorded separately from legally listed occupational diseases and are included in the LTRIR parameter. In the reporting period, six new cases of illness directly attributable to work-related factors were recorded throughout the Group. We report such cases when they have been diagnosed and officially recognized by a medical officer.

As in previous years, we hardly recorded any sector-typical accidents involving contact with chemicals in 2013. The absolute number of injuries declined further. A significant proportion of our work-related accidents and injuries relates to traffic accidents. In the previous year (2012) these were even at the top of our list of injury statistics. As a result, road safety was the focus of many programs and training courses in 2013.

ONLINE ANNEX: 3-11-2

Safety in motorized and non-motorized transport was also a central issue at the HealthCare sites worldwide, along with accidents caused by tripping, slipping and falling, as they account for most occupational injuries with lost workdays at HealthCare. Various measures and campaigns to prevent accidents on the road and on company premises were therefore carried out at many sites in 2013. Dedicated training courses and activities were also used to raise awareness in other areas of occupational safety such as workshops on the safe handling of hazardous substances for employees at various Chinese sites.

Road safety was also a big issue at CropScience in 2013, especially in training sessions for employees in Brazil, Colombia, Chile and Venezuela, and in several Asian countries, where motorcyclists in particular were given instruction. In a monthly "QHSE Update," CropScience publishes up-to-date information and advice for its employees worldwide.

In 2013 MaterialScience once again called on its employees to submit their suggestions for the subgroup's own CEO Safety Award. Measures implementing the winning entries will be rolled out worldwide at MaterialScience in 2014.

On the basis of a 2012 employee survey on HSE (Health, Safety, Environment) performed at Bayer Corporation in North America and at MaterialScience worldwide, all MaterialScience sites drew up action plans by the end of 2013. The goal is further improvement in occupational safety and the corresponding HSE management systems.

At the annual Group-wide Safety Day in September 2013 there was also a particular focus on correct road safety procedures.

PROCESS AND PLANT SAFETY

Through the Group-wide process and plant safety (PPS) initiative, Bayer is continuously working to improve the safety culture and corresponding standards in plants and laboratories and to optimize safety technology.

ONLINE ANNEX: 3-11-3

By the end of 2012, the process and plant safety initiative had provided training to approximately 26,000 production and technology employees and had led to the introduction of a standardized risk assessment including a catalog of measures. Based on the experience gained from these initial training courses, work began in 2013 on preparing teaching materials to enable the long-term continuation of the training program using both traditional and web-based training. To maintain the standard achieved in the long term, the process and plant safety training program will be firmly established in the subgroups' HSEQ management systems.

Further standardized KPIs, such as Loss of Primary Containment (LoPC), were also prescribed for all Bayer plants. LoPC refers to unsafe conditions in production facilities, for example chemicals leaking from their primary container such as pipelines, pumps, tanks or drums. LoPC was introduced as an early indicator. We use the associated rate (LoPC Incident Rate) to determine the number of LoPC incidents per 200,000 working hours in areas relevant to plant safety. The LoPC Incident Rate for 2013 was 0.35 (2012: 0.38).

ONLINE ANNEX: 3-11-4

Every incident reported is carefully analyzed with respect to its causes. The result of the cause analysis is publicized across the Group to heighten the safety awareness of employees. The reporting level is set so low that even material and energy leaks that have no impact on employees, neighbors or the environment are systematically recorded and reported. This approach is in line with our commitment to maintaining the integrity of our facilities at all times. As expected, the evaluations from the first few years have indicated areas where there is room for further improvement in the safety of existing facilities. The introduction of both this parameter and the global training program mentioned above is helping us to raise awareness of the significance of minor leaks and releases.

The Bayer Group Regulation "Process and Plant Safety" stipulates uniform processes and standards. The methods and criteria for identifying and assessing the risks posed to people and the environment by plants and processes underwent further development and were globally standardized.

The Bayer Group's competence center for process and plant safety, together with the Group HSEQ Platform for Process and Plant Safety, is managed by Technology Services. This comprises three regional competence centers, which are located in Leverkusen, Germany; Shanghai, China; and the Baytown and Kansas City sites in the United States.

TRANSPORTATION SAFETY

A central objective of the Board of Management is to make transportation safety a very high priority within the Bayer safety culture. The Bayer Group Regulation "Transportation Safety" specifies procedures that ensure that all transported materials are handled in line with applicable regulations and the materials' hazard potential. Logistics service providers are to be selected following a defined procedure, and their fulfillment of safety and quality standards is to be assessed regularly. The regulation requires every organizational unit concerned to appoint people who will be responsible for implementation.

A Group-wide Transportation Safety Platform has been set up that is chaired by each of the subgroups in turn. In 2013 the focus of the platform's activities lay, for example, on sustainable training tools for transportation safety, reviewing internal instructions and evaluating and selecting our logistics service providers. This was documented in corresponding HSEQ targets. As part of our Responsible Care™ activities, transportation safety instructions are also being drawn up for non-hazardous materials. This goes beyond what is required under transportation legislation.

The transportation safety management of the subgroups is part of the audit system of the Bayer Group detailed in the Bayer Group Regulation "Health, Safety, Environment and Quality (HSEQ) Audits."

We classify critical incidents during the transportation of our products as transport incidents. These include accidents that cause personal injury, significant damage to property, environmental impact through the release of substances or leakage of hazardous materials. We record transport incidents using defined criteria. Assessment is based on the leaked load, graded according to the volume and dangerous goods class, personal injury and blocked transportation routes. We take into account both our own chemical transports and those we commission and pay third parties to perform on our behalf.

In total, well over one million transport movements took place in 2013. Despite extensive safety precautions and training activities, it is unfortunately impossible to prevent transport incidents from occurring altogether. We carefully analyze and evaluate all incidents so that adequate steps can be taken to prevent a recurrence. The number of transport incidents in the reporting period rose from six to 11. All incidents occurred on the road or at sea.

Transport Incidents by Means of Transport [Table 3.11.2]

	2009	2010	2011	2012	2013
Road	8	6	6	6	8
Rail	2	1	1	0	0
Inland waterways	0	1	0	0	0
Sea	0	0	0	0	3
Air	0	0	0	0	0
Pipeline	0	0	0	0	0
Total	10	8	7	6	11

A detailed overview of the transport incidents can be found in Chapter 12.6 "Environmental Incidents." See Chapter 12.6

12. Environmental Protection

Bayer takes its responsibility to protect the environment very seriously. It is constantly working to reduce environmental impact and find innovative solutions that benefit the environment. Our environmental standards apply worldwide.

Eco-efficient processes help cut the costs associated with materials, energy, emissions and disposal. After all, an efficient approach to raw materials and energy is now more than ever an economic imperative too. Ever increasing costs oblige us to take measures to improve resource and energy efficiency that relieve the strain on the environment while also cutting costs.

Our commitment to environmental protection, health and safety extends beyond the scope of legal requirements. It includes factoring in environmental aspects and performing a voluntary ecological assessment for capital expenditure projects exceeding €10 million. In the case of acquisitions we examine prior to the transaction whether the applicable environmental and occupational safety regulations and fundamental employee rights are complied with at the production sites in question.

We are committed to the chemical industry's Responsible Care™ initiative and have set out the basic principles of this commitment in our Bayer Sustainable Development Policy. Certified HSEQ management systems control its operational implementation.

12.1 Energy Consumption

Energy and material consumption and emission levels are highly dependent on the manufactured sales volume. Consequently, this is our reference parameter for evaluating energy and resource efficiency.

In 2013 Bayer's manufactured sales volume fell by 1.4%. The Group's total energy consumption meanwhile was even down 2.8% at 80.8 petajoules. We differentiate between primary energy consumption at our sites – mainly of fossil fuels to generate our own electricity and steam – and secondary energy consumption that reflects the purchase of electricity, steam and refrigeration energy and the use of process heat. Primary energy consumption fell by 3.0% and secondary energy consumption by 2.6%. Alongside the lower manufactured sales volume, an increased drive to improve efficiency also contributed to this disproportionately large decrease. The trend away from a correlation between manufactured sales volume and energy consumption already identified in previous years thus continued in 2013.

The volume of the fossil fuels natural gas, oil and coal consumed decreased in 2013. In the area of secondary energy sources, steam consumption fell significantly but electricity consumption was only slightly below the figure for the previous year. Developments varied according to subgroup and site.

Relationship between Energy Consumption and Manufactured Sales Volume [Table 3.12.1]

	2009	2010	2011	2012	2013
	Terajoules	Terajoules	Terajoules	Terajoules	Terajoules
Primary energy consumption for the in-house generation of electricity & steam (1,000 TJ)	48.1	51.6	50.1	49.0	47.6
Natural gas	29,413	31,847	31,162	30,411	29,796
Coal	16,976	17,801	16,776	15,954	15,094
Liquid fuels	772	532	660	656	416
Waste	(33)	678	515	1,005	1,282
Other*	996	774	983	1,021	994
Secondary energy consumption as steam, electricity and refrigeration energy (net, 1,000 TJ)	29.2	34.1	34.8	34.1	33.3
Electricity**	23,675	25,229	25,475	25,849	25,560
Steam (net from purchase/sale)	(2,092)	722	1,054	(121)	(801)
Steam from waste heat (process heat)	8,273	8,722	9,000	9,144	9,146
Refrigeration energy (net from purchase/sale)	(654)	(595)	(683)	(735)	(639)
Total energy consumption (1,000 TJ)	77.3	85.7	84.9	83.2	80.8
Manufactured sales volume (million metric tons)	8.7	10.4	11.0	11.2	11.1
Energy efficiency (MWh/t)***	4.09	3.77	3.63	3.50	3.44

* e.g. hydrogen
** Secondary energy consumption for electricity is based on the raw material mix of the country concerned.
*** Energy efficiency: quotient of total energy consumption and manufactured sales volume. For MaterialScience, only manufactured sales volumes that also form the basis for calculating MaterialScience-specific emissions are taken into account.

Bayer utilizes primary energy as efficiently as possible and applies cogeneration in more than 90% of its energy generation. The electricity and heat generated are used in our own production facilities and third-party facilities (especially of Lanxess Deutschland GmbH as the other shareholder of our service company Currenta). The (secondary) energy purchased via us is also used at third-party production facilities. Furthermore, we purchase electricity on the market – through electricity exchanges, for example. In the reporting period, the proportion of renewable energies Group-wide was 0.7%. We comment in detail on these issues in the CDP (Carbon Disclosure Project-Climate Change Program) Report.

www.annual-report2013.bayer.com/CDP-climate

12.2 Air Emissions

At Bayer, air emissions are caused mainly by the generation and consumption of energy. Our commitment to greater energy efficiency helps reduce both costs and emissions. In addition, we aim to contribute to climate protection on several levels and have established a Group-wide Climate Program for this purpose.

CLIMATE PROGRAM

For some years, we have been working through our Climate Program to improve resource and energy efficiency, one objective being to reduce greenhouse gas emissions during production operations. We also offer market solutions aimed at protecting the climate and adapting to climate change.

By introducing this Climate Program, Bayer already reduced its specific emissions by around 18% between 2005 and the end of 2013. We have therefore achieved our ambitious medium-term targets. By implementing energy management systems and investing in energy efficiency measures we have also improved the Group's energy efficiency by around 18% over the same period as planned.

See Chapter 1.3

As part of our new package of targets (see Chapter 1.3 "Targets and Performance Indicators"), the existing emissions reduction target will be raised slightly and relate to a more recent base year. This new, ambitious emissions reduction target will be supplemented by an energy efficiency target. Between 2012 and 2020, Bayer intends to cut its specific greenhouse gas emissions by 20% and improve its energy efficiency by 10%.

Alongside aiming to achieve the overall Group climate target, the Bayer Climate Program reflects a commitment to three specific areas:

1. More efficient production: reducing emissions at Bayer's own production facilities by increasing energy efficiency and by developing and utilizing new, innovative technologies.

ONLINE ANNEX: 3-12.2-1

By the end of 2013 MaterialScience had introduced the STRUCTese™ (Structured Efficiency System for Energy) energy management system at 58 particularly energy-intensive facilities across the globe. The annual energy saving amounted to over 1.2 million MWh, while CO_2 emissions were cut by over 360,000 metric tons per annum. German MaterialScience sites that have all implemented STRUCTese™ were successfully recertified to ISO 50001 in 2013.

Innovative production processes also help reduce electricity consumption and greenhouse gas emissions. Using oxygen depolarized cathode (ODC) technology in chlorine production cuts electricity requirements, for example, by 30% compared with the standard process. This was revealed during a two-year test period at a demonstration plant with an annual capacity of 20,000 metric tons of chlorine at the Krefeld-Uerdingen site in Germany. The process has been marketed globally since 2013 so as to raise potential for improved efficiency outside Bayer too. If ODC technology were introduced throughout Germany's chlorine industry, for example, it would cut the country's total electricity consumption by 1%.

A further process innovation is gas phase technology in the manufacture of the polyurethane precursor TDI. This technology uses up to 60% less energy and up to 80% less solvent. Among other things, the process is to be used at a new TDI plant with an annual capacity of 300,000 metric tons that is currently being built at the Dormagen site in Germany at a cost of €250 million.

Partially replacing crude oil with CO_2 in the production of plastics could help conserve resources. In this process, polyol, another precursor required to make polyurethane, can be manufactured with the help of CO_2.

A global review of energy management systems is being performed in our life science businesses with the goal of identifying at which production sites certification to ISO 50001 should be envisaged.

Chemical park operator Currenta started introducing energy management systems at the German sites in Dormagen, Leverkusen and Krefeld-Uerdingen in 2012. Certification to ISO 50001 will be completed by the end of 2015 at the latest.

2. Market solutions: using Bayer products – particularly in the areas of building insulation, lightweight construction and agriculture – to reduce customer emissions. Our products play their part in saving energy and conserving resources in many different ways. They help customers reduce emissions and provide them with solutions for adapting to climate change.

ONLINE ANNEX: 3-12.2-2

Products and solutions from MaterialScience help conserve resources and save energy in a number of key industries and areas of life, at the same time also cutting emissions. Prime examples include lightweight construction in the automotive sector and the insulation of buildings and refrigeration equipment. For instance, a particularly fine-pored rigid polyurethane foam has been developed that can bring about a further significant improvement in the insulating performance of refrigerators and freezers.

MaterialScience is also demonstrating possible applications for insulating materials in the EcoCommercial Building Program – a global network of experts for sustainable construction initiated by the company. It brings together over 80 specialists from a variety of sectors including lighting technology, energy management and renewable energies. The objective is to develop solutions for reducing buildings' energy consumption and using renewable sources to cover the remaining requirements. Bayer itself makes use of the global network to construct its own reference buildings. Such buildings have so far been constructed in Germany, Belgium, the United States, India, China and, most recently, Brazil.

The transparent, high-performance plastic polycarbonate also paves the way for energy-efficient market solutions supporting, for example, energy-saving LED technology that can be used in the automotive industry and for innovative street lights. The latter consume up to 70% less energy than conventional models.

Materials from MaterialScience also play a role in generating renewable energies. The latest development projects include transparent polyurethane coatings for solar cells that require no outer glass panel, thus cutting weight, saving costs and making energy generation more efficient. In the area of wind power, the company has developed a new polyurethane infusion resin for rotor blades that outperform rotors based on the epoxy resins previously used in terms of lightness, fracture toughness and durability.

CropScience's seed and crop protection strategy actively helps reduce specific greenhouse gas emissions per yield. Chemical crop protection products that, for example, specifically increase stress tolerance enable customers to make efficient use of resources so as to boost yields. CropScience has expanded its Tabela project in Indonesia, which focuses on rice cultivation with direct seeding, to an area of 10,000 ha – a 40% increase compared with 2012. Under this initiative, the company is working with international and local partners to demonstrate just what can be achieved through direct seeding of pregerminated rice and with the help of a customized package comprising seeds and crop protection. The benefits include enhanced water efficiency, lower greenhouse gas emissions, higher rice yields and improved incomes for farmers. It is expected that the project will be continuously expanded in the future, with the goal of supporting the sustainability of rice cultivation in Indonesia. The Republic of Indonesia has recognized CropScience's Tabela project as a U.N. Clean Development Mechanism through its responsible body.

The successful continuation of the cooperation with the International Vector Control Consortium (IVCC) in combating malaria through targeted defense against the insects transmitting the disease using technological solutions such as long-lasting insecticides helps fight the growing threat of malaria resulting from climate change.

3. Supporting activities: reducing emissions in non-production areas – such as the vehicle fleet and IT – involving the workforce in the process.

ONLINE ANNEX: 3-12.2-3

Bayer maintains a variety of initiatives to cut costs in the Group's non-production areas by saving energy and fuel. Examples include improvements to the vehicle fleet and in the field of information technology. A new reduction target was implemented in 2013 as part of the Bayer EcoFleet initiative. By 2020 Bayer is planning to reduce the specific CO_2 emissions of the Group's global fleet comprising over 25,000 vehicles to 110 g/km. In the area of communication, Bayer is increasingly using energy-efficient workstation solutions with integrated voice and video functions. Such IT solutions reduce the number of business trips necessary and thus emission levels.

GREENHOUSE GAS EMISSIONS

Bayer reports all Group greenhouse gas emissions in line with the requirements of the Greenhouse Gas Protocol (GHG Protocol). Direct emissions from our own power plants, waste incineration plants and production facilities (corresponding to Scope 1 of the GHG Protocol) are determined at all production locations and relevant administrative sites.

In the reporting year, greenhouse gas emissions remained Group-wide at about the same level as the previous year (+0.2%). While direct emissions fell by 3.6%, indirect emissions rose by 4.1% in arithmetical terms. At the site where we consume the most power, Baytown in the United States, the local energy producer has updated the emission factors for electricity and steam procurement, which led to an arithmetical rise in our greenhouse gas emissions.

Specific greenhouse gas emissions for 2013 rose owing to the fall in manufactured sales volume compared to 2012, reaching 1.00 metric ton of CO_2 equivalents per metric ton of sales product.

ONLINE ANNEX: 3-12.2-4

Thanks to their environmentally friendly and resource-efficient combined heat and power (CHP) technology, our power plants convert approximately 80% of the fuel energy used into electricity and heat. Despite this, they cause a significant proportion of the Group's direct greenhouse gas emissions.

It is important to note that, in line with the regulations of the GHG Protocol, we include in our figures all greenhouse gas emissions from the conversion of primary energy sources into electricity, steam or refrigeration energy, even though a significant proportion of direct emissions result from the generation of energy that is supplied to third parties (other companies). Consequently, our absolute figures for greenhouse gas emissions are higher than the actual emissions resulting from Bayer's business activities. The level of specific greenhouse gas emissions is a more meaningful statistic. This indicates only the greenhouse gas emissions for which Bayer is responsible in relation to the manufactured sales volumes of the three Bayer subgroups.

Each year, the waste incineration plants operated by Currenta produce around 1 million metric tons of steam from the incineration of approximately 280,000 metric tons of hazardous waste. Compared to using fossil fuels, this reduces emissions by 200,000 metric tons of CO_2 per year.

Information on subgroup-specific greenhouse gas emissions:

ONLINE ANNEX: 3-12.2-5

Greenhouse Gas Emissions by Subgroup and Service Company [Table 3.12.2-1]

	Total direct and indirect emissions in million metric tons of CO_2 equivalents				
	2009	2010	2011	2012*	2013*
HealthCare	0.55	0.54	0.54	0.55	0.52
CropScience	1.09	1.09	1.00	0.92	0.95
MaterialScience**	4.83	5.24	4.63	4.89	4.98
Others***	0.02	0.02	0.01	–	–
Currenta****	1.62	1.62	1.97	1.88	1.83
Specific greenhouse gas emissions for MaterialScience (CO_2 equivalents per metric ton of manufactured sales volume)*****	1.09	0.96	0.82	0.86	0.89

* Emissions from the Group's vehicle fleet amounting to 0.10 million metric tons of CO_2 equivalents are not assigned to specific subgroups but are reported in the Group direct emissions (see Table 3.12.2 "Group Greenhouse Gas Emissions").

** In collaboration with our energy suppliers we were able to update a large proportion of the conversion factors for calculating emissions. These plant-specific values are increasingly replacing the statistically determined factors of the International Energy Agency (IEA) previously used. This step led to a worsening of MaterialScience's emission reduction (2005–2013) from 27.1% to 23.7%. Bayer does not intend to adjust its targets.

*** Total greenhouse gas emissions for Technology Services and Business Services. These companies' production facilities were incorporated into other subgroups in 2012.

**** The emissions reported for Currenta are attributable to the provision of energy to external companies at the Chempark sites.

***** The by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the manufactured sales volume. Trade products are also not included.

Group Greenhouse Gas Emissions*

[Table 3.12.2]

	Million metric tons of CO_2 equivalents				
	2009	2010	2011	2012	2013
Direct greenhouse gas emissions**	4.57	4.80	4.23	4.24	4.09
Indirect greenhouse gas emissions***	3.53	3.70	3.92	4.12	4.29
Total greenhouse gas emissions	**8.10**	**8.50**	**8.15**	**8.36**	**8.37**
Specific greenhouse gas emissions (metric tons of CO_2 equivalents per metric ton of manufactured sales volume)****	1.23	1.09	0.95	0.98	1.00
Manufactured sales volume (million metric tons)	**8.7**	**10.4**	**11.0**	**11.2**	**11.1**

* portfolio-adjusted in accordance with the GHG Protocol
** In 2013, 89.5% of emissions were CO_2 emissions, 10.0% N_2O emissions, just under 0.5% partially fluorinated hydrocarbons and 0.04% methane.
*** Typically, CO_2 in incineration processes accounts for over 99% of all greenhouse gas emissions. We therefore base our calculation of indirect emissions on CO_2 only.
**** Specific Group emissions are calculated from the total volume of direct and indirect emissions of the subgroups, including from the vehicle fleet, divided by the manufactured sales volume of the three subgroups. Quantities attributable to the supply of energy to external companies are deducted from the direct and indirect emissions. At MaterialScience the by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the production volume as they will occur in much smaller amounts in the future, thanks to measures aimed at enhancing energy efficiency. Trade products are also not included.

Since 2011 the reporting of all relevant indirect Scope 3 emissions under the GHG Protocol has been bindingly regulated by the Corporate Value Chain Accounting & Reporting Standard. Following a thorough examination Bayer has identified nine material Scope 3 categories, which are reported on in detail in the CDP Report.

ONLINE ANNEX: 3-12.2-6

As part of the Carbon Disclosure Project – Climate Change Program, we will again be publishing a detailed report for 2013 on these emissions that result from the value chain. We take particular account of emissions where there is significant potential for reduction. These include our transport-related emissions resulting from business trips.

In 2013 the Bayer Group was involved in European emissions trading with 10 incineration plants and five chemical production plants. The greenhouse gas emissions of these facilities comprised approx. 2.17 million metric tons of CO_2 (incineration plants) and approx. 0.48 million metric tons of CO_2 equivalents (chemical production plants).

OTHER DIRECT EMISSIONS INTO THE AIR

Emissions of ozone depleting substances (ODS) fell by 3.9%. Emissions of volatile organic compounds excluding methane (VOCs) dropped by around 13%. The main source of emissions remains the CropScience site in Vapi, India, which accounts for over 70% of all VOC emissions. The project initiated there to reduce these emissions is starting to have an impact: VOC emissions have fallen by a further 11%, which is equivalent to 8.8% of the Group total. By 2016 at the latest, a central waste air treatment system will bring together the many different emission streams in Vapi and significantly reduce these emissions. At the HealthCare site in Bergkamen, Germany, targeted organizational and technical improvements led to a reduction of almost 70% in local VOC emissions.

Emissions of Ozone Depleting Substances (ODS)*

[Table 3.12.3]

	Metric tons p.a.				
	2009	2010	2011	2012	2013
ODS	**17.5**	**20.8**	**16.3**	**16.3**	**15.7**

* in CFC-11 equivalents

VOC* Emissions

[Table 3.12.4]

	2009	2010	2011	2012	2013
VOC in 1,000 metric tons p.a.	2.59	2.54	2.69	2.60	2.27
VOC in kg per metric ton of manufactured sales volume	0.2979	0.2436	0.2457	0.2316	0.2047

* volatile organic compounds excluding methane

Other direct emissions also fell in 2013.

ONLINE ANNEX: 3-12.2-7

Other Important Direct Air Emissions [Table 3.12.4-1]

	2009	2010	2011	2012	2013
	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.
CO	1.4	1.4	1.3	1.0	0.9
NO_X	3.5	3.7	3.7	3.1	2.5
SO_X	2.8	2.7	2.3	1.9	1.3
Particulates	0.2	0.2	0.2	0.2	0.2

12.3 Use of Water and Emissions into Water

The continuous availability of clean water in sufficient quantities is essential for our production sites and the surrounding areas. However, this cannot be taken for granted in many parts of the world. We safeguard our water supply under the premises that industrial water usage does not lead to local problems such as a shortage of water for the local population.

www.annual-report2013.bayer.com/CDP-water

Bayer supports the CEO Water Mandate of the U.N. Global Compact with the goal of working with key stakeholders to develop sustainable strategies for water usage. Our CDP Water Disclosure reports on our water usage and the associated risks.

ONLINE ANNEX: 3-12.3-1

We are currently actively involved in the CEO Water Mandate's working group to develop Corporate Water Disclosure Guidelines. We provide details of our commitment, the measures implemented and the results achieved within the Group in our annual CDP Water Disclosure response, which represents a progress report for the CEO Water Mandate. In this survey initiated by the Carbon Disclosure Project (CDP), 530 institutional investors call on 629 of the world's biggest companies to disclose details of their water management, their company-specific water footprint, and the opportunities and risks they have identified in connection with the use of water.

Based on our company's Water Position, we have established a program for the targeted and ongoing improvement of our water-related operating procedures. This covers both the protection and the efficient use of resources. As part of the Water Disclosure Project we have performed a screening of all environmentally relevant sites with respect to water shortage. Sites located in arid regions that are subject to particular risks when it comes to the availability and quality of water will establish a water management system with regional targets and measures by 2017 (see also Chapter 1.3 "Targets and Performance Indicators"). This will be performed on the basis of the analysis of environmental aspects in existing Bayer environmental management systems. Previous local reduction targets, as established in Spain, New Zealand and Australia, will be taken into consideration.

See Chapter 1.3

Our three subgroups apply specific systems and standards to tackle the respective challenges they face in their usage of water.

ONLINE ANNEX: 3-12.3-2

In its Water Protection Directive, HealthCare commits itself to responsible water usage. For example, new facilities for collecting, treating and using rainwater are under construction at the Bergkamen site in Germany. HealthCare sees itself as duty-bound to continue developing its strategy for dealing with pharmaceutical residues in the environment.

CropScience is a member of the World Business Council for Sustainable Development's Water Programme Leadership Group. At the end of 2012 a pilot project was launched at the Quart de Poblet site in Spain. As part of the European Water Stewardship Programme, this project will evaluate the sustainable use of water and investigate potential for improvement.

MaterialScience regulates the resource-friendly use of water in its HSEQ policy. This policy includes a commitment to handle resources carefully. The company also feels it has a responsibility to continuously improve its contribution to environmental protection and energy efficiency.

WATER CONSUMPTION AND USAGE

In 2013 the Group's water consumption fell by around 23 million m³ or approx. 6%. The biggest reductions were seen at the Chempark Leverkusen site in Germany and the MaterialScience site in Antwerp, Belgium. The gradual closure of production facilities at the CropScience site in Institute, West Virginia, United States, has reduced water consumption there by almost 24 million m³, which corresponds to over 6% of the Group's total water volume. Water was essentially obtained from the same sources as in the previous year.

Net Water Intake by Source [Table 3.12.5]

	2009	2010	2011	2012	2013
Water consumption (million m³ p.a.)	407	474	411	384	361
Proportion from surface water (%)	58	71	65	64	63
Proportion from bore holes/springs (%)	32	25	31	32	33
Proportion from public drinking water supplies (%)	1	3	2	2	3
Proportion from other sources, generally rainwater (%)*	9	1	2	2	2

* Through an optimization in the accounting of water use, it was possible to assign most of the water to the actual sources from 2010 onward, thus reducing the figure for water from other sources.

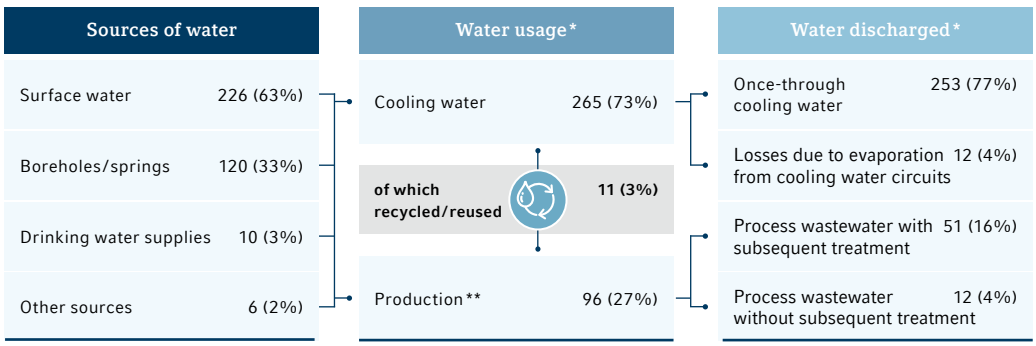
The total volume of once-through cooling water in 2013 was around 253 million m³. This is approximately 12% down on the previous year, which amounts to a reduction of 36 million m³ worldwide. 70% of all water used by Bayer is once-through cooling water. This water is only heated and does not come into contact with products. It can be returned to the water cycle without further treatment in line with the relevant official permits. The main reasons for the reduction in the volume of once-through cooling water are the partial closure of the CropScience site in Institute, West Virginia, United States, and the lower production volume at the MaterialScience site in Antwerp, Belgium.

In our production activities, we endeavor to use water several times and to recycle it. Water is already recycled and reused at 36 sites, e.g. in closed cooling cycles, or through the reuse of treated wastewater or steam condensate recovery as process water. A total of around 11 million m³ of water was reused in the reporting year.

ONLINE ANNEX: 3-12.3-3

The graphic shows the distribution of the different types of water usage within the Bayer Group.

Water Use in the Bayer Group in 2013 (million m³) [Graphic 3.12.2-1]



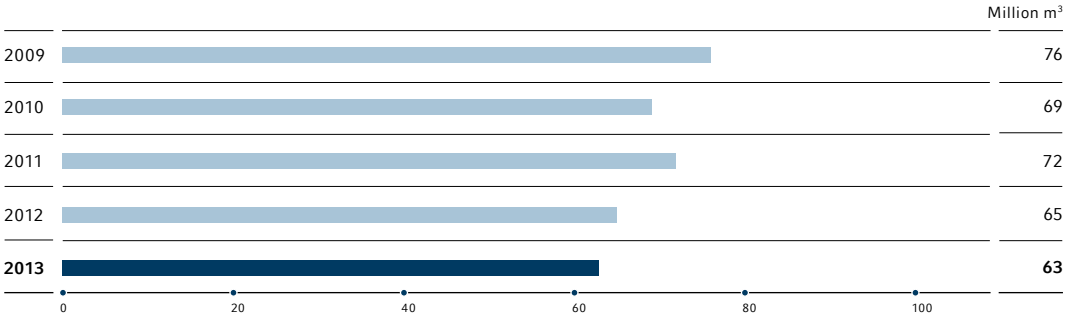
* The differences between volumes of water consumed and water discharged can be explained, for example, by unquantified losses due to evaporation, leaks, quantities of water used as raw materials in products and volumes of condensate generated through the use of steam as a source of energy.

** sum from production processes, sanitary wastewater and rinsing and cleaning processes in production

WASTEWATER AND WASTEWATER DISCHARGES

The total volume of process wastewater fell by around 3.6%. All wastewater is subject to strict monitoring and analysis before it is discharged into disposal channels. 81% of Bayer's process wastewater worldwide is purified in wastewater treatment plants (Bayer or third-party facilities). Following careful analysis, the remaining 19% was categorized as environmentally safe. Part of it contained nutrients and was therefore used to water gardens and agricultural land. The volume of treated wastewater fell by 4% compared to the previous year. Its proportion of the total discharge of water remained at the previous year's level. The decrease in the volume of wastewater not requiring treatment is primarily due to the reduced use of once-through cooling water at the two German Chempark sites in Leverkusen and Krefeld-Uerdingen.

Volume of Process Wastewater (million m³) [Graphic 3.12.1]



Our goal is to minimize emissions into wastewater. In 2013 the amount of nitrogen compounds released into wastewater fell by 2%, and the amount of phosphate discharged decreased by 25%.

In 2013 we recorded an increase of around 8% in total organic carbon (TOC) emissions. The main generators of this were the CropScience sites in Muttenz, Switzerland, and Kansas City, Missouri, United States. The most important reason for this was a considerable increase in production, along with a defect in a heat exchanger in Muttenz.

Emissions into Water [Table 3.12.6]

	Absolute values				
	2009	2010	2011	2012	2013
Phosphorus (1,000 metric tons p.a.)	0.74	0.09	0.08	0.15	0.11
Nitrogen (1,000 metric tons p.a.)	0.64	0.49	0.53	0.70	0.69
Nitrogen (kg per metric ton of manufactured sales volume)	0.0737	0.0474	0.0486	0.0624	0.0620
TOC* (1,000 metric tons p.a. of organically bound carbon)	1.35	1.42	1.50	1.42	1.53
TOC (kg per metric ton of manufactured sales volume)	0.155	0.136	0.137	0.126	0.138
Heavy metals (1,000 metric tons p.a.)	0.0090	0.0114	0.0108	0.0098	0.0091
Inorganic salts (1,000 metric tons p.a.)	726	866	926	1,048	946
COD** (1,000 metric tons p.a.)	4.05	4.26	4.51	4.25	4.58

* total organic carbon
** chemical oxygen demand; calculated value based on TOC figures (TOC x 3 = COD)

12.4 Waste and Recycling

Bayer minimizes material consumption and disposal volumes through systematic waste management. Safe disposal channels with separation according to the type of waste and economically expedient recycling processes serve this purpose. Production fluctuations and building refurbishment/land remediation work also influence waste volumes and recycling paths.

In 2013 the total volume of waste generated fell by around 11%. The main reason for this was the completion of a major soil remediation project at CropScience's Thane site in India. The site has now been sold. Another soil remediation project, at the HealthCare site in Orizaba, Mexico, was also completed, leading to a further drop in waste volumes.

Waste Generated*

[Table 3.12.7]

	2009	2010	2011	2012	2013
Total waste generated (1,000 metric tons p.a.)	914	807	958	1,014	899
Hazardous waste generated**	375	354	474	603	467
of which hazardous waste from production	302	325	354	397	417
Specific volume of hazardous production waste (%)	3.47	3.12	3.23	3.54	3.77

* only waste generated by Bayer
** definition of hazardous waste in accordance with the local laws in each instance

In line with the general reduction in the volume of waste, the amount of waste disposed of fell by 10.4%. This had no significant effect in 2013 on the distribution of waste among the different disposal channels, however.

ONLINE ANNEX: 3-12.4-1

Waste by Means of Disposal

[Table 3.12.7-1]

	2009	2010	2011	2012	2013
Total volume of waste disposed of* (1,000 metric tons p.a.)	**918**	**809**	**966**	**1,021**	**915**
Proportion removed to landfill (%)	40	32	38	36	32
Proportion incinerated (%)	28	36	33	33	38
Proportion recycled (%)	31	31	28	29	27
Waste that cannot be unambiguously assigned (%)	1	1	1	2	2

* Bayer serves as a certified waste disposal plant operator at various sites. At these locations, Bayer disposes not only of its own waste but also of waste from third parties (companies not belonging to the Bayer Group). For that reason the volume of waste disposed of differs slightly from the volume of waste generated by Bayer.

Hazardous Waste* Generated by Means of Disposal

[Table 3.12.7-2]

	2009	2010	2011	2012	2013
	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.	1,000 metric tons p.a.
Total volume of hazardous waste generated	**375**	**354**	**474**	**603**	**467**
Amount removed to landfill	89	56	122	175	53
Amount incinerated/recycled	286	298	352	428	414

* only waste generated by Bayer

RECYCLING

In addition to satisfying economic and environmental criteria, the recycling of our materials also has to comply with legal requirements. This results in restrictions, particularly in the areas of pharmaceuticals and crop protection. Throughout the Group, we are developing opportunities for recycling within the framework of legal regulations.

In the reporting period, the volume of waste recycled was just under 250,000 metric tons (27%) of the total volume of waste disposed of, which is two percentage points down on the previous year. Numerous examples of recycling measures provide proof of Bayer's commitment to recycling.

ONLINE ANNEX: 3-12.4-2

At the Bergkamen site in Germany, HealthCare binds iodine released during the incineration of waste from X-ray contrast medium production and processes it into an iodide solution that can be marketed. This process enabled us to recover and recycle around 220 metric tons of iodine in 2013.

CropScience supports the drawing up of directives on the return of crop protection product packaging in collaboration with national industrial associations. The subgroup is also globally committed to establishing efficient take-back systems with the corresponding reclamation organizations. In 2013, 2,250 metric tons of rinsed primary packaging was collected and, to a great extent, recycled (about 85% of the total volume). The PAMIRA system for the safe and environmentally responsible disposal of crop protection and liquid fertilizer packaging was introduced on a voluntary basis in the 1990s by the crop protection industry and the commercial sector. The amount of packaging taken back in Germany has been steadily growing since 2010. In 2013, 2,666 metric tons of packaging were accepted and passed on for controlled, environmentally responsible recycling.

MaterialScience supports the recycling of its plastic products and items made from them, among other things by working extensively in associations and bodies such as PlasticsEurope's sustainability platform. The subgroup is also a shareholder of BKV GmbH, German industry's competence platform for recycling plastic. In its own production operations, too, MaterialScience uses material recycled from plastic waste. Such high-quality secondary raw materials are used to make certain engineering thermoplastics. Current products include a flame-retardant plastic compound comprising 30% old PET water bottles that is used to make TV housings.

In 2013 MaterialScience also became involved in PlasticEurope's "Zero Pellet Loss" initiative, which aims to prevent plastic granules from being released at any stage in the life cycle of thermoplastic products. In particular, production and logistics processes are to be reviewed.

Currenta has developed a process for the thermal treatment of composite materials. This process destroys all organic, flammable substances, converts the heat released into usable steam and releases the usable precious metals with a recovery rate of up to 99%. Recycling industrial waste, materials from demolitions and chemical waste from the Chempark sites is also part of Currenta's remit. This also involves the inspection of buildings for contamination, the environmentally sound disposal of rubble and the reuse of all recyclable materials. In 2013 Currenta's recycling measures resulted in around 46,000 metric tons of construction materials, 40,000 metric tons of metal and 12,000 metric tons of chemicals such as sulfuric acid, solvents and iodine being returned to the material cycle.

12.5 Biodiversity

A new, Group-wide biodiversity position has applied at Bayer since the beginning of 2013. This incorporates the existing CropScience subgroup position. It takes into account influences on biodiversity along the whole value chain and the sustainable use of raw materials. Particular attention is paid to product innovations that are of specific benefit to biodiversity.

In this position, all subgroups commit themselves to the Convention on Biological Diversity. Under this Convention, the industrialized nations entered into an undertaking in October 2012 to provide developing countries with greater support in implementing international biodiversity goals.

ONLINE ANNEX: 3-12.5-1

CropScience's research and development activities include improving plant health, providing assistance in tackling invasive species, and supporting and implementing measures to promote integrated crop management. Farmers and breeders can use CropScience products to improve their production efficiency with the goal of reducing the area needed for agricultural use, which in turn leaves room for the preservation of valuable ecosystems with a large diversity of species.

Great importance is also attached to the protection of biodiversity as part of the European Union's reform of its Common Agricultural Policy in line with the Convention on Biological Diversity.

Building on the measures initiated as part of the International Year of Biodiversity in 2010, CropScience started a raft of other projects in 2011 and continued them in 2013. The subgroup thus also supports the European Union's Action Plan for Biodiversity in the key areas that we can influence. To protect and encourage pollinating insects, several strips of flowers have been planted in front of and on the grounds of the CropScience site in Monheim, Germany. Under the motto "Blühende Wege" (Areas in bloom), the subgroup is appealing to municipalities, beekeepers and individuals to turn unused strips of grass into feeding areas for bees. The goal is to trigger a dynamic process that will create a network of thriving biotopes throughout Germany. A total of nine sites were supported with special seeds in 2013 and an expansion of the initiative is planned for 2014.

In the Upper Rhine Plain, Germany, a project examining the influence of strips of flowers, beetle banks and other measures on the populations of wild bees and butterflies is already in its fourth year.

The Bayer Forward Farming project earmarked for roll-out throughout Europe was started in 2011 with the goal of demonstrating that it is possible to strike a successful balance between productive agriculture on the one hand and the maintenance and promotion of biodiversity on farmland on the other. Farms in Germany, Belgium, the United Kingdom and France are currently involved, and further activities are planned in the Netherlands and Poland.

HealthCare also attaches great importance to maintaining biological diversity. As a member of the Association of Research-Based Pharmaceutical Companies, it supports the association's position on the U.N. Convention on Biological Diversity. A new biodiversity policy has been in place at HealthCare's sites since June 1, 2013. Among other things, this takes into account that the subgroup concentrates on the chemical synthesis of substances using state-of-the-art technologies in medicinal, combinatorial and computational chemistry. Research on natural substances is not a focal point of its work, accounting for less than 5% of its research activities. If such substances are used during research into new pharmaceuticals, they are first checked with respect to the Convention on Biological Diversity.

A Group-wide directive stipulates that new production sites must not be set up in areas that are protected by statutory requirements of the countries concerned relating to natural characteristics, biodiversity or other factors.

ONLINE ANNEX: 3-12.5-2

Using our global site register, we compared the geographical coordinates of relevant production sites against those of internationally recognized protected areas (ASEAN Heritage, Barcelona Convention, UNESCO-MAB Biosphere Reserve, Wetlands and World Heritage Convention and Ramsar Convention). This analysis showed that three of our sites lie less than three kilometers from protected areas. These are Schorren van de Benenden Schelde, Belgium; the Wadden Sea of Lower Saxony, Germany; and Blesbokspruit, South Africa. For example, we regularly check water usage and discharge at water-intensive sites so as to prevent significant extractions of water and wastewater discharges that could adversely affect the protected areas.

12.6 Environmental Incidents

Bayer uses the term "environmental incidents" to define incidents in the course of our business activities that result in the release of substances into the environment. Factors that determine whether there is a reporting obligation include, in particular, the nature and quantity of the substance, the amount of damage caused and any consequences for nearby residents. In accordance with our internal voluntary commitment, we report any leakage of substances with a high hazard potential from a quantity of 100 kg upward.

Despite extensive safety precautions and training, it is unfortunately impossible to prevent the occurrence of environmental incidents altogether. In 2013 the number of environmental incidents rose from five to 10, and the number of transport incidents from six to 11. Five of these come under both categories. A detailed description of environmental and transport incidents:

ONLINE ANNEX: 3-12.6-1

Environmental and Transport Incidents [Table 3.12.7-3]

	Environment	Transport	Personal injury
CropScience, India, February 12, 2013 While being transported by ship to India, a big bag containing the product Nativo™ was ripped open owing to the container of another company being inadequately secured. Around 400 kg of the product was dispersed on the ship. The carrier received detailed cleaning and decontamination instructions.	⊗	⊗	No
CropScience, Muskegon, Michigan, United States, February 28, 2013 Methanol gas escaped during routine maintenance. The incident was reported to the authorities, because the locally permitted threshold was exceeded. An accident analysis was performed, the responsible technical staff received appropriate training and the control system was reviewed.	⊗		No
CropScience, Vapi, India, March 13, 2013 A plastic pipe leading to a tank ruptured and 20 m^3 of a liquid containing hydrogen chloride (HCl) leaked out. The product was collected and the remnants neutralized.	⊗		No
MaterialScience, Knoxville, Tennessee, United States, April 4, 2013 A fork-lift truck damaged a transport container during loading of the adhesive Desmodur™. Around 225 liters of the product leaked out inside a container and was properly soaked up and disposed of.		⊗	No
MaterialScience, sea route between Brazil and Argentina, April 9, 2013 During routine cleaning of a ship's tank at sea, 500 metric tons of polyol (non-toxic polyurethane precursor) was accidentally mixed with around 10 metric tons of seawater. This resulted in 35 metric tons of polyol being released into the Atlantic Ocean.	⊗	⊗	No
CropScience, Lubbock, Texas, United States, May 8, 2013 One of six hydrogen chloride tanks on a supplier's trailer sprung a leak. The cause was initially unknown. An emergency plan was initiated, with around 100 residents living within a radius of 800 m being evacuated as a precaution. Once the leak had been plugged, they were able to return to their homes. Bayer asked the responsible supplier to perform a detailed investigation to analyze the cause of the incident.	⊗		No
CropScience, Kansas City, United States, May 11, 2013 The actuation of a pressure relief valve resulted in approximately 790 kg of ammonia being released into the atmosphere. The cause was the decomposition of a valve seal. This defect was corrected through the use of another, chemically resistant seal.	⊗		No

Environmental and Transport Incidents [Table 3.12.7-3 (continued)]

	Environment	Transport	Personal injury
MaterialScience, Krefeld-Uerdingen, Germany, June 19, 2013 A residue drain valve in a hydrochloric acid line that connected two tank farms and had a maximum fill volume of approximately 20 m³ developed a defect. The line was not in operation at the time. As a result of hydrostatic pressure, the acid leaked out at the location of the defect. The Fire Department prevented any more serious damage by creating a wall of water. It was possible to drain off a large part of the leaked acid into the in-house sewerage system. The embankment of the adjacent internal rail line was contaminated as a result of this incident and was subsequently decontaminated properly.	⊗		No
MaterialScience, A3 freeway near Neustadt, Germany, June 20, 2013 A traffic accident involving a van and a truck occurred on the A3 freeway. Both vehicles were loaded with Bayer materials. Approximately 3 metric tons of these materials escaped but they were not hazardous. The two injured drivers were taken to hospital and released after a short time. The freeway had to be closed while the debris was cleared away. The regional media visited the scene and reported on the incident.		⊗	Yes
MaterialScience, near Padang, Sumatra, Indonesia, June 26, 2013 A traffic accident resulted in a contractor's truck overturning and plunging down a 200 m cliff. The driver and co-driver were both killed. Around 9 metric tons of polyol (non-toxic polyurethane precursor) escaped.	⊗	⊗	Yes
MaterialScience, Irving, Texas, United States, July 17, 2013 A transport company reported a leak in a 200-liter metal drum filled with Desmodur™. A drum transporter had accidentally collided with and punctured the drum during loading. Approximately 200 l of the product leaked out. No one was injured and no emissions were released into the environment. A specialist company was brought in to clean up and dispose of the product that had leaked.		⊗	No
CropScience, Guatemala, August 3, 2013 A truck loaded with CropScience products collided with an oncoming truck. The truck that was hit overturned and approximately 290 kg of product leaked onto the road, some of it reaching the roadside ditch. The road was closed for 8 hours. The product and the contaminated soil were removed and disposed of. Investigations revealed that the volume and type of product released did not meet the criteria for an environmental incident.		⊗	No
MaterialScience, Ham/Hasselt, Belgium, August 13, 2013 A tire blowout caused a truck loaded with 22.9 metric tons of polyol (no hazardous materials) to overturn and catch fire on the E313 freeway in Belgium. The driver was not injured. No product leaked out thanks to the tank container's special leak protection. The fire was put out and the Belgian police made the truck safe.		⊗	No
CropScience, Brazil, September 15, 2013 A truck loaded with CropScience products collided with an oncoming truck. The loaded truck overturned and a large part of the load fell onto the road. A number of drums were so badly damaged that the product leaked onto the road. All necessary measures were taken to prevent any environmental pollution. The undamaged products were returned to the production site (Belford Roxo) and reprocessed. All waste was transported to a waste incineration plant with the help of a specialist company. The road had to be closed for 5 hours.		⊗	No
MaterialScience, Hürth, Germany, October 29, 2013 The driver of a tanker loaded with 30% hydrochloric acid drove too quickly on the way to a customer. The vehicle tipped on its side. Since the tank and its shell were not seriously damaged, only small amounts of hydrochloric acid (less than 50 l) leaked out. The investigation into the precise damage caused is still under way. The driver suffered minor injuries, and was taken to hospital. Six people (first-aiders) were also taken to hospital because they had breathed in the fumes from the hydrochloric acid.	⊗	⊗	Yes
MaterialScience, Hong Kong, December 3, 2013 While a consignment of polyol (non-toxic polyurethane precursor) was being transported to Hong Kong by sea, a leak was discovered in one of the product containers (a flexi bag). Since the threshold of 1,000 kg for the release of non-hazardous products was slightly exceeded (1,123 kg), we classified this as a transport and environmental incident.	⊗	⊗	No

Of the 16 incidents reported, 10 were environmental incidents and 11 transport incidents. Five incidents fell into both categories, resulting in them (intentionally) being counted twice.

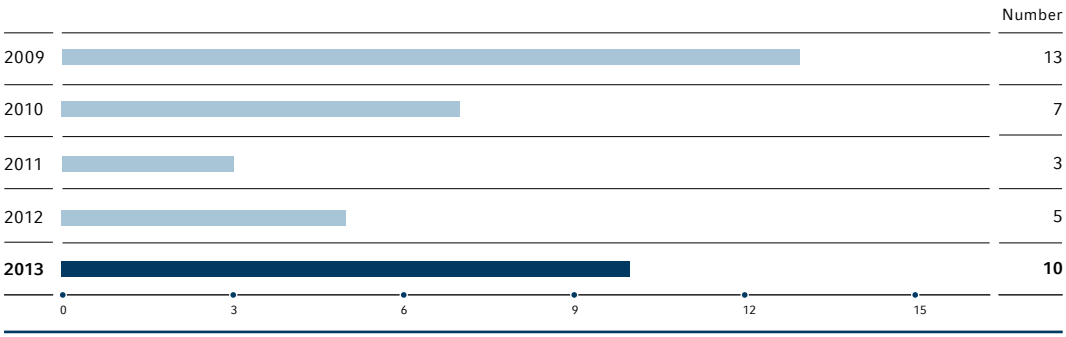
Incidents Observed by Stakeholders

[Table 3.12.7-4]

The following incidents came to the attention of our stakeholders, but are not classed as environmental or transport incidents according to Bayer criteria.

Location of the incident	Description	Comments
HealthCare, Lerma, Mexico, February 24, 2013	Stolen truck	A truck loaded with HealthCare products was stolen at a faked vehicle checkpoint near Guadalajara. The driver, assistant and security personnel reported back the next day. The incident was reported to the local authorities.
HealthCare, Wuppertal, Germany, March 10, 2013	Methanol leak	Approx. 600 l of methanol leaked in a HealthCare plant. The product was soaked up immediately and incinerated as thermal waste. There was no impact outside the plant.
MaterialScience, Caojing, China, May 13, 2013	Fatal workplace injury of a contractor's employee	There was a fatal injury during work at a construction site on the Caojing production location. Heavy metal sheets were being lifted and moved using a crane. During this maneuver, one of the sheets escaped from its binding and injured a construction worker so severely that he later died in hospital. Bayer classified this accident in the "Fatal workplace injury" category and subjected it to a thorough accident investigation.
HealthCare, Bitterfeld, Germany, June 3, 2013	Flooding/disaster alert	The Bayer Bitterfeld site was threatened by floodwater. The company established a temporary Emergency Task Force in Bitterfeld which was in contact with the local community's emergency task force. Appropriate precautions in the plants ensured that this incident had no impact.
MaterialScience, Brunsbüttel, Germany, September 24, 2013	People injured by carbon monoxide	During the start-up of a production facility at the Brunsbüttel production site, carbon monoxide escaped through a leaky underpressure safety feature. Five external employees who were in the immediate vicinity of the leak were taken to the company's Medical Department or to nearby hospitals. They were able to be released the same or the following day. Bayer classified this accident in the "Workplace injury" and "Unsafe plant status (LoPC)" categories, and subjected it to a thorough accident investigation.
HealthCare, Wuppertal, Germany, October 6, 2013	Ruptured water main in the public supply network	There was a ruptured water main on a major public road. Bayer Site Security checked the neighboring construction sites and buildings for possible water ingress. Various kinds of damage were discovered and arrangements made for these to be rectified.
HealthCare, Orizaba Proquina, Mexico, October 23, 2013	Fatal workplace injury of a Bayer employee; explosion and fire in drying area	There was an explosion in a drying area of a facility for intermediates at the Orizaba site. The Fire Department brought the resulting fire under control after a short time. One employee was killed and another taken to hospital with burns as a result of the accident. The public prosecutor opened an investigation to examine the cause and course of the accident. A team of experts from Bayer is also investigating the accident. Bayer classified this accident in the "Fatal workplace injury" category.
HealthCare, Wuppertal, Germany, November 11, 2013	Dripping tank car (water)	A liquid was found to be dripping on public property from a rail tank car hired by HealthCare in Wuppertal that was filled with mixed organic solvents. The Wuppertal municipal Fire Department and the Bayer Safety and Security Control Center were informed. Due to the official tank car signage, it was assumed as a precaution that this was a solvent leak. Tests on the sample taken revealed the leaking liquid to be water, which had probably accumulated as rainwater in the cladding of the tank car.
HealthCare, Chengdu, China, December 25, 2013	Fire on a building site	During welding work, small particles and sparks fell into a container of isoamyl acetate, causing it to ignite. Employees were able to adequately extinguish the fire.
CropScience, Vapi, India, December 27, 2013 – January 2, 2014	Production facilities downtime	The production facilities at CropScience's Vapi site were shut down as part of scheduled downtime. This was due to an inspection of the entire industrial park (12 companies) by the local state authorities. This incident was reported in the local press.

Number of Environmental Incidents [Graphic 3.12.2]



12.7. International Standards and Certifications

To ensure high health, safety, environmental protection and quality (HSEQ) standards throughout the Group, Bayer has established management systems that are aligned to acknowledged international standards and are regularly evaluated and updated. They form an integral part of all our business processes. Regular upkeep of the management systems and appropriate training and certification also demonstrate our commitment to the guidelines of the chemical industry's Responsible Care Global Charter.

With regard to the coverage of our business activities with HSEQ management systems based on energy consumption, around 99% of our production sites had an HSE management system audited internally by Bayer and over 90% of our Group-wide business activities were certified externally to internationally recognized standards in 2013. As part of a Group-wide certification plan, we are seeking to further increase the level of coverage separately for each subgroup by 2017. The goal is for each subgroup to have a coverage based on energy consumption of at least 80% by then. This applies to both environmental and occupational safety management.

Certifications* [Table 3.12.8]

	2011	2012	2013
ISO 14001 certification/EMAS validation	66	84	84
HSEQ management systems based on other external standards**	54	58	67
Certified to OHSAS 18001	27	30	30
HSE management systems audited by Bayer	99	99	99

* % of business activities (based on energy consumption)
** e.g. RCMS (Responsible Care Management System) in the United States or Industria Limpia (Clean Industry) in Mexico

All subgroups also have industry-specific international quality management systems such as ISO 9001, ISO 17025, ISO 13485 or GMP (Good Manufacturing Practice). Group-wide, coverage is over 91%.

In 2012 we started applying ISO 50001, which defines requirements for introducing, implementing, maintaining and improving an energy management system. So far, the MaterialScience sites in Brunsbüttel, Dormagen, Leverkusen and Krefeld-Uerdingen (all Germany) have gained certification. In 2013 CropScience completed the implementation of energy management systems at the Knapsack and Monheim sites in Germany with certification to ISO 50001. Together with the EMAS-certified site in Frankfurt, three of the German sites have thus been prepared to meet the Group's energy efficiency target. HealthCare has started implementing ISO 50001 and the certification process at the Bitterfeld site was completed in 2013. By 2015 the subgroup intends to introduce energy management systems certified to ISO 50001 at all its German production sites. Currenta has also started introducing an energy management system.

13. Social Commitment

€ 50 million
for the development of society

Throughout the world, Bayer is active in a variety of ways in the core fields of education and science, health and social needs, and sports and culture. With its foundations, the Bayer Group promotes cutting-edge research, talented individuals and innovative educational and social projects. In 2013 Bayer provided some €50 million (2012: €49 million) for these activities. As with its business operations, Bayer's social commitment is based on innovation and pioneering spirit.

ONLINE ANNEX: 3-13-1

Expenses for Social Initiatives in 2013 [Table 3.13.0-1]

	€ million	Share of total in %	Share of category in %
Education and science	**14**	**28**	
School projects, focus: natural science and technology	4		30
Medical and clinical research	3		23
Science and research support (e.g. awards, endowed chairs, research funding, symposia)	3		20
Nature and environment, environmental education	2		15
Scholarships for students, talent management programs	2		13
Health and social needs	**17**	**34**	
Health care provision, social medicine, emergency medical care	9		51
Community projects	3		19
Health education, patient groups	3		18
Disaster aid, reconstruction	1		6
Volunteering projects	1		6
Sports and culture	**19**	**38**	
Bayer clubs (sports, leisure, culture)	14		75
Culture incl. Bayer Arts & Culture	5		24
Other sports projects and projects in the communities surrounding the sites	0		1
Total	**50**		

Expenses for Social Initiatives [Table 3.13.1]

Main sponsorship areas	2012	2013
	€ million	€ million
Education and science	13	14
Health and social needs	16	17
Sports and culture	20	19

The Foundation & Donations Management Department within the Corporate Office of Bayer AG is responsible for strategically aligning and coordinating our social commitment, as well as for monitoring and reporting activities. Social initiatives are implemented decentrally.

ONLINE ANNEX: 3-13-2

All project sponsoring is subject to the provisions of a Group-wide donation directive that establishes a framework for its content-related and strategic alignment, as well as the proper handling of the funds. We steer the selection of the projects through allocation guidelines comprising, among other aspects, the indicators "social relevance" and "thematic proximity to the company's fields of expertise." In all activities, we focus on countries in which Bayer is represented and on areas that are of relevance to the company's business strategy. Neither Bayer AG nor other Bayer Group companies make donations to political parties or associations affiliated with them.

EDUCATION AND SCIENCE

The Bayer Science & Education Foundation supports young scientists and renowned researchers across the globe through scientific awards, endowed chairs and research scholarships. In 2013 the foundation approved total funding of €2 million for this purpose.

The international Bayer Early Excellence in Science Award is presented annually in three categories: biology, chemistry and materials. The Bayer foundation presents this award to talented young scientists in the early stages of their academic careers. Further honorary awards presented by the Bayer Science & Education Foundation for scientific achievements include the Otto Bayer Award, the Hansen Family Award and the Bayer Thrombosis Research Award.

Promoting talent and pioneering spirit

Bayer also supports the scientific instruction of young people. We want to help awaken and promote an interest in science, technology and medicine through initiatives for schoolchildren and scholarship programs. In this way, we are helping talented young people at an early age who have the potential to become leading-edge researchers.

ONLINE ANNEX: 3-13-3

The Bayer School Support Program specifically assists teachers near Bayer's German sites who organize scientific and technical instruction in an innovative way. The foundation supported the implementation of such ideas with total funding of €500,000 in 2013.

The international Bayer education initiative "Making Science Make Sense" aims to help elementary school students experience the world of science through target-group-oriented experimental instruction. In 2013 we once again implemented locally specific programs in North and South America, Europe and Asia, some of which involve volunteering activities by our employees.

The Bayer foundation established a total of 100 German scholarships at 22 universities throughout the country, making available €180,000 for this purpose in the reporting period. The foundation accepted 52 students into the international scholarship program in 2013, approving funding of €200,000. In addition, 10 schoolchildren were accepted into the Science Teens Program and 20 physicians from 16 countries were included in the Young Physician Leaders Program. In addition to funding, the Bayer scholarship students also benefit from the opportunity to make valuable contacts at the company.

The Humboldt-Bayer Research Fellowship was initiated in 2013, marking the first time the Alexander von Humboldt Foundation has collaborated with an industrial company. The program gives outstanding young international researchers the opportunity to spend time conducting research in Germany and to engage in intensive exchange with Bayer's science networks. Bayer made available total funding of €500,000 for this purpose.

HEALTH AND SOCIAL NEEDS

We work to improve health services and social conditions in many regions of the world. To achieve this objective, we cooperate with partners within international programs and support local initiatives.

One of the projects Bayer maintains in the area of public health is a collaboration with the Chinese government aimed at promoting advanced training for physicians in rural, medically underserved areas of western China. Supplementing Bayer's economic activities in its core business is the Access to Medicine (ATM) strategy. As part of this program, the company supplies medicines free of charge to combat "neglected" tropical diseases.

To mark the company's 150th anniversary, the Bayer Cares Foundation for the first time supported employees around the world who endeavor to improve living conditions in the communities surrounding the company's sites through their own project ideas.

ONLINE ANNEX: 3-13-4

In its volunteering program, the foundation made available total funding of €680,000 in 2013 for 172 employee and citizen projects in 50 countries. The foundation especially supports measures in its core areas of promoting education and health, and meeting basic social needs. Their goal is to help close supply gaps.

Disaster aid is another area of activity for our social needs foundation. While the company itself provides areas hit by natural disasters with immediate aid in the form of donations of money and goods, the foundation supports sustainable reconstruction projects to help people who find themselves in a state of hardship.

SPORTS AND CULTURE

Bayer has been actively involved in supporting culture and sports for more than a century, thereby making a sustainable contribution to the cultural life and sports opportunities at its sites in Germany. In 2013 the company provided funding of some €13 million for recreational, disabled and competitive sports activities.

ONLINE ANNEX: 3-13-5

Bayer is realigning its charitable sponsorship of sports in the communities near its Lower Rhine sites in Germany. These activities will be gradually concentrated at six major clubs by 2015. Bayer's involvement in professional soccer at Bayer 04 Leverkusen GmbH is not part of its social sports sponsorship activities because it belongs to the company's image advertising.

Report on Economic Position

FISCAL 2013:

Continuous growth in Bayer's Anniversary Year

// Dynamic development in the Life Sciences, MaterialScience below expectations
// Outstanding growth for recently launched pharmaceutical products
// Group sales €40.2 billion (Fx & portfolio adj. +5.1%)
// EBIT €4.9 billion (+25.6%)
// EBITDA before special items €8.4 billion (+1.5%)
// Net income €3.2 billion (+32.7%)
// Core earnings per share €5.61 (+5.8%)
// Forecast for 2014: further growth in sales and earnings

14. Overview of Sales, Earnings and Financial Position

TARGET ATTAINMENT IN 2013

	Forecast issued in February 2013 (calculated at average exchange rates for Q4 2012)	Target attainment (at actual exchange rates for 2013)	Target attainment (calculated at average exchange rates for Q4 2012)
Group sales*	4% – 5% increase to approx. €41 billion	5.1% increase to €40.2 billion	5.1% increase to €41.6 billion
EBITDA before special items	Mid-single-digit percentage increase	1.5% increase	5.6% increase
Core earnings per share	High-single-digit percentage increase	5.8% increase	11.7% increase

* currency- and portfolio-adjusted

FULL YEAR 2013

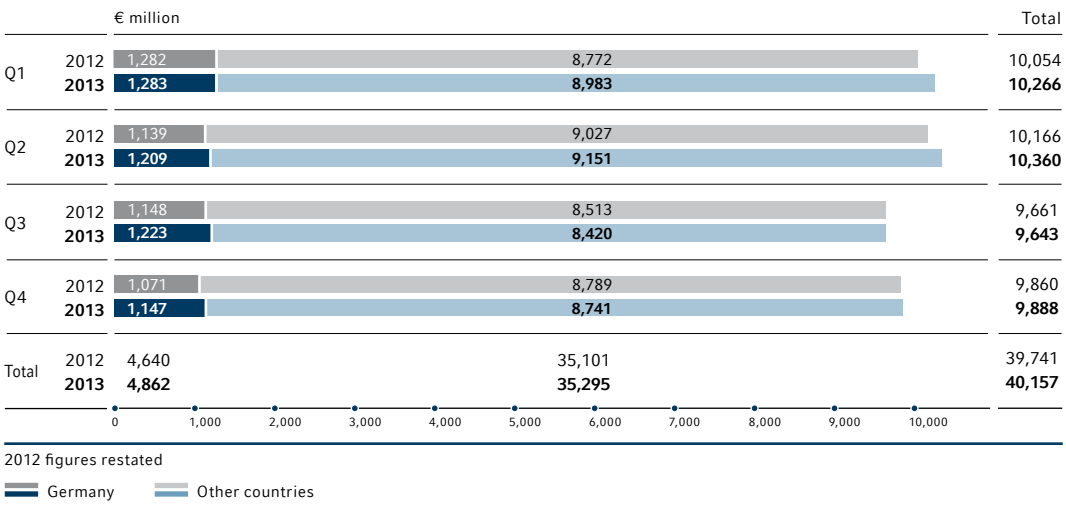
In 2013 we saw continuous growth and met important business objectives. HealthCare posted excellent sales gains for its recently launched pharmaceutical products. CropScience was very successful in a positive environment. In the Life Sciences, we continued to strengthen our businesses through acquisitions. We achieved our operational targets overall despite substantial negative currency effects. The business of MaterialScience continued to be affected by a difficult market situation. We remain optimistic for 2014 and plan to further improve sales and earnings.

Changes in Sales [Table 3.14.1]

	2012	2013
	%	%
Volume	+4.7	+4.3
Price	+0.6	+0.8
Currency	+4.0	−4.4
Portfolio	−0.5	+0.3
Total	**+8.8**	**+1.0**

Group **sales** advanced by 5.1% on a currency- and portfolio-adjusted basis (reported: +1.0%) to €40,157 million (2012: €39,741 million). Sales at HealthCare climbed by 6.8% (Fx & portfolio adj.). CropScience posted a substantial 9.4% sales gain (Fx & portfolio adj.). Sales at MaterialScience were level with the prior year (Fx & portfolio adj. +0.4%).

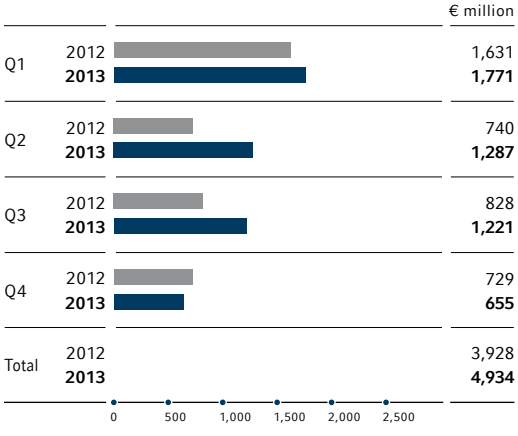
Bayer Group Quarterly Sales [Graphic 3.14.1]



2012 figures restated

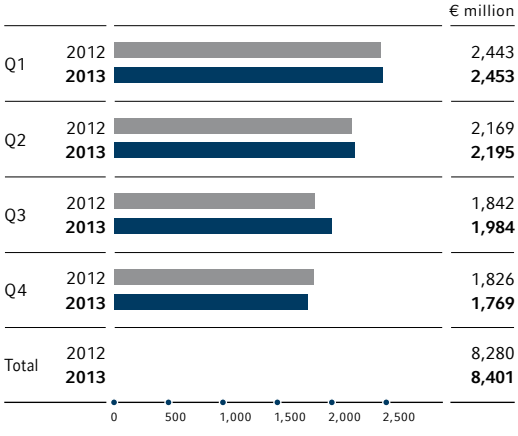
EBIT of the Bayer Group rose by 25.6% to €4,934 million (2012: €3,928 million) after net special charges of €839 million (2012: €1,711 million). The special charges mainly included €358 million in restructuring expenses and €276 million in additional charges related to legal claims. EBIT before special items came in at €5,773 million (2012: €5,639 million). **EBITDA** before special items increased by 1.5% to €8,401 million (2012: €8,280 million). Earnings growth was attributable to good sales development in the Life Science businesses, while MaterialScience saw earnings decline due to market factors. Negative currency effects diminished Group earnings by about €260 million. In addition, expenses for long-term stock-based compensation increased by €70 million in light of the pleasing market performance of Bayer stock. EBITDA before special items at HealthCare advanced by 4.2% to €5,334 million (2012: €5,119 million) as a result of the positive business development in the Pharmaceuticals segment. EBITDA before special items in CropScience rose by 11.0% to €2,248 million (2012: €2,025 million), largely on account of significant volume increases and higher selling prices. EBITDA before special items of MaterialScience fell by 15.1% to €1,072 million (2012: €1,263 million), mainly because of significantly higher raw material costs.

Bayer Group Quarterly EBIT [Graphic 3.14.2]



2012 figures restated

Bayer Group Quarterly EBITDA Before Special Items [Graphic 3.14.3]

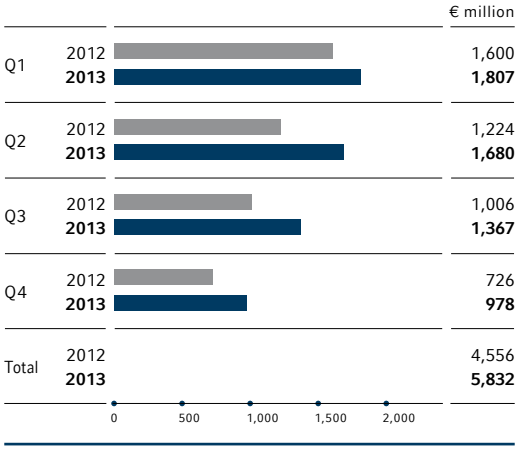


2012 figures restated

After a **financial result** of minus €727 million (2012: minus €752 million), **income before income taxes** amounted to €4,207 million (2012: €3,176 million). After tax expense of €1,021 million (2012: €723 million) and non-controlling interest, **net income** in 2013 came in at €3,189 million (2012: €2,403 million). Earnings per share were €3.86 (2012: €2.91). Core earnings per share advanced by 5.8% to €5.61 (2012: €5.30), calculated as explained in Chapter 16.3 "Core Earnings Per Share."

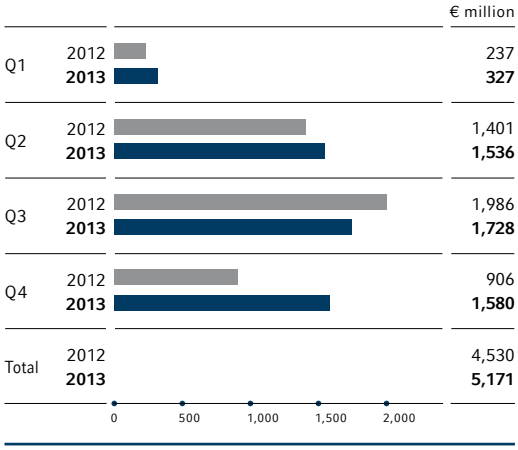
See Chapter 16.3

Gross Cash Flow by Quarter [Graphic 3.14.4]



2012 figures restated

Net Cash Flow by Quarter [Graphic 3.14.5]



2012 figures restated

Gross cash flow climbed by 28.0% in 2013 to €5,832 million (2012: €4,556 million), mainly because of the improvement in EBIT. Cash tied up in working capital increased considerably for business-related reasons. Net cash flow moved ahead by 14.2% to €5,171 million (2012: €4,530 million). Net financial debt fell by €0.3 billion against December 31, 2012, to €6.7 billion. The net defined benefit liability for post-employment benefits – the difference between benefit obligations and plan assets – declined from €9.2 billion at the end of 2012 to €7.3 billion, mainly due to a rise in long-term capital market interest rates.

FOURTH QUARTER OF 2013

Group **sales** in the fourth quarter of 2013 rose by 6.4% (Fx & portfolio adj.) to €9,888 million (reported: +0.3%). Sales of HealthCare gained 7.2% (Fx & portfolio adj.) to €4,939 million (reported: +0.4%). Business in the Pharmaceuticals segment expanded by 11.5% (Fx & portfolio adj.) to €2,975 million (reported: +3.8%), driven by the encouraging development of our recently launched products. Sales at Consumer Health came in slightly ahead of the prior-year quarter at €1,964 million (Fx & portfolio adj. +1.0%; reported: –4.4%). CropScience sales climbed by 12.8% (Fx & portfolio adj.) in the fourth quarter to €1,951 million (reported: +5.1%) as a result of higher volumes. Sales of MaterialScience rose by 1.6% (Fx & portfolio adj.) against the prior-year period, to €2,691 million (reported: –2.5%) thanks to volume increases.

EBIT of the Bayer Group declined by 10.2% in the fourth quarter of 2013, to €655 million (Q4 2012: €729 million). Earnings were diminished by net special charges of €439 million (Q4 2012: €424 million). The special charges mainly included €192 million in restructuring expenses and €182 million in additional charges related to legal claims. Of the latter amount, €155 million related to claims concerning Yasmin™/YAZ™ in the United States. EBIT before special items fell by 5.1% to €1,094 million (Q4 2012: €1,153 million).

EBITDA before special items declined in the fourth quarter of 2013 by 3.1% to €1,769 million (Q4 2012: €1,826 million). Earnings were held back by higher research and development expenses and negative currency effects. In addition, expenses for long-term stock-based compensation increased in light of the pleasing market performance of Bayer stock. HealthCare registered a 1.6% decline in EBITDA before special items to €1,337 million (Q4 2012: €1,359 million), while CropScience posted an 8.1% increase to €319 million (Q4 2012: €295 million). EBITDA before special items at MaterialScience amounted to €248 million (Q4 2012: €264 million), down 6.1% against the prior-year quarter.

The financial result improved in the fourth quarter of 2013 to minus €84 million (Q4 2012: minus €169 million), primarily due to gains from the sale of the shares in Onyx Pharmaceuticals Inc., United States. Income before income taxes amounted to €571 million (Q4 2012: €560 million). After taxes and non-controlling interest, net income came in at €455 million (Q4 2012: €366 million). Earnings per share improved to €0.55 (Q4 2012: €0.45). Core earnings per share rose to €1.10 (Q4 2012: €1.01), calculated as explained in Chapter 16.3 "Core Earnings Per Share."

See Chapter 16.3

Gross cash flow of the Group advanced by 34.7% to €978 million (Q4 2012: €726 million) and net cash flow by 74.4% to €1,580 million (Q4 2012: €906 million). The sharp increase in net cash flow was partly due to lower tax payments. Net financial debt declined by €1.0 billion in the fourth quarter of 2013 to €6.7 billion (September 30, 2013: €7.7 billion), largely thanks to cash inflows from operating activities. The net defined benefit liability for post-employment benefits declined by €0.5 billion against September 30, 2013, to €7.3 billion, mainly due to a rise in long-term capital market interest rates.

Key Data by Subgroup and Segment [Table 3.14.2]

	Sales		EBIT		EBITDA before special items*	
	4th Quarter 2012	4th Quarter 2013	4th Quarter 2012	4th Quarter 2013	4th Quarter 2012	4th Quarter 2013
	€ million	€ million	€ million	€ million	€ million	€ million
HealthCare	**4,921**	**4,939**	**558**	**631**	**1,359**	**1,337**
Pharmaceuticals	2,866	2,975	165	321	835	822
Consumer Health	2,055	1,964	393	310	524	515
CropScience	**1,856**	**1,951**	**247**	**163**	**295**	**319**
MaterialScience	**2,760**	**2,691**	**94**	**70**	**264**	**248**
Reconciliation	**323**	**307**	**(170)**	**(209)**	**(92)**	**(135)**
Group	**9,860**	**9,888**	**729**	**655**	**1,826**	**1,769**

2012 figures restated
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."

15. Business Development by Subgroup, Segment and Region

15.1 HealthCare

Key Data – HealthCare [Table 3.15.1]

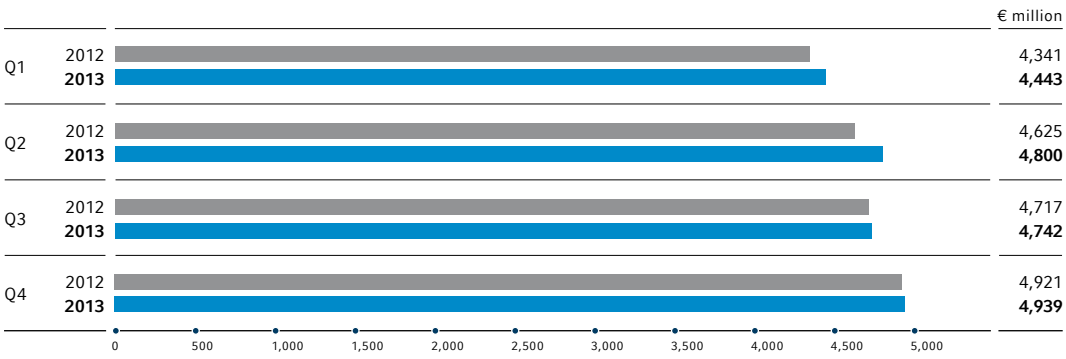
	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx (& p) adj. %	€ million	€ million	%	Fx (& p) adj. %
Sales	**4,921**	**4,939**	**+0.4**	**+7.2**	**18,604**	**18,924**	**+1.7**	**+6.8**
Change in sales								
Volume	+5.3%	+4.7%			+3.7%	+5.9%		
Price	−0.2%	+2.5%			+0.5%	+0.9%		
Currency	+2.4%	−7.7%			+4.5%	−5.7%		
Portfolio	−0.4%	+0.9%			−0.3%	+0.6%		
Sales by segment								
Pharmaceuticals	2,866	2,975	+3.8	+11.5	10,798	11,188	+3.6	+9.4
Consumer Health	2,055	1,964	−4.4	+1.0	7,806	7,736	−0.9	+3.2
Sales by region								
Europe	1,731	1,817	+5.0	+6.5	6,483	6,853	+5.7	+6.8
North America	1,281	1,286	+0.4	+5.5	4,961	5,024	+1.3	+4.7
Asia/Pacific	1,104	1,080	−2.2	+12.5	4,196	4,188	−0.2	+11.1
Latin America/Africa/Middle East	805	756	−6.1	+9.8	2,964	2,859	−3.5	+8.0
EBIT	**558**	**631**	**+13.1**		**2,205**	**3,260**	**+47.8**	
Special items	*(460)*	*(354)*			*(1,582)*	*(713)*		
EBIT before special items*	***1,018***	***985***	***−3.2***		***3,787***	***3,973***	***+4.9***	
EBITDA*	**895**	**1,069**	**+19.4**		**3,866**	**4,858**	**+25.7**	
Special items	*(464)*	*(268)*			*(1,253)*	*(476)*		
EBITDA before special items*	***1,359***	***1,337***	***−1.6***		***5,119***	***5,334***	***+4.2***	
EBITDA margin before special items*	27.6%	27.1%			27.5%	28.2%		
Gross cash flow**	**595**	**840**	**+41.2**		**2,659**	**3,573**	**+34.4**	
Net cash flow**	**1,063**	**959**	**−9.8**		**3,546**	**2,980**	**−16.0**	

2012 figures restated
Fx (& p) adj. = currency- (and portfolio-)adjusted (Fx & p adj.: Sales and Sales by segment; Fx adj.: Sales by region)
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
** For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

PHOTO // The picture above, taken with a scanning electron microscope, shows a blood clot – magnified about 7,500 times.

Sales of the **HealthCare** subgroup rose by 6.8% (Fx & portfolio adj.) in 2013, to €18,924 million (reported: +1.7%). This encouraging growth was driven by our recently launched pharmaceutical products.

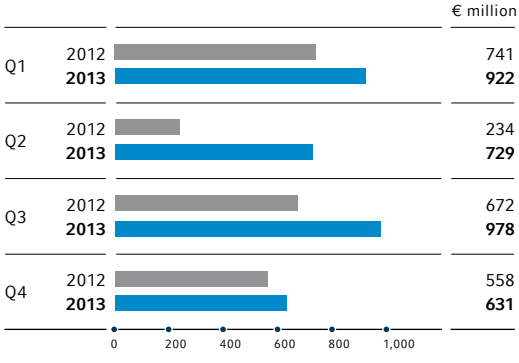
HealthCare Quarterly Sales [Graphic 3.15.1]



2012 figures restated

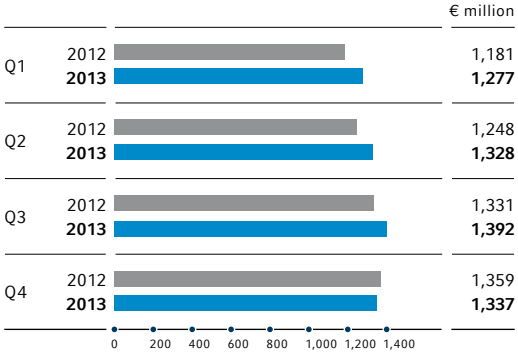
EBIT of the HealthCare subgroup advanced by a substantial 47.8% in 2013 to €3,260 million, mainly because net special charges were much lower at €713 million (2012: €1,582 million). EBIT before special items improved by 4.9% to €3,973 million. **EBITDA** before special items rose by 4.2% to €5,334 million. This was attributable to the gratifying business development in Pharmaceuticals, while earnings in Consumer Health posted a slight decline. Earnings at HealthCare were held back by negative currency effects of about €290 million.

HealthCare Quarterly EBIT [Graphic 3.15.2]



2012 figures restated

HealthCare Quarterly EBITDA Before Special Items [Graphic 3.15.3]



2012 figures restated

The integration of Conceptus, Inc., United States, and Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany, both acquired in 2013, proceeded on schedule.

PHARMACEUTICALS

Key Data – Pharmaceuticals [Table 3.15.2]

	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx (& p) adj. %	€ million	€ million	%	Fx (& p) adj. %
Sales	**2,866**	**2,975**	**+3.8**	**+11.5**	**10,798**	**11,188**	**+3.6**	**+9.4**
Sales by region								
Europe	988	1,049	+6.2	+7.5	3,677	3,918	+6.6	+7.5
North America	601	663	+10.3	+15.6	2,370	2,540	+7.2	+10.6
Asia/Pacific	775	783	+1.0	+16.6	2,939	3,016	+2.6	+14.9
Latin America/Africa/Middle East	502	480	−4.4	+12.4	1,812	1,714	−5.4	+6.8
EBIT	**165**	**321**	**+94.5**		**1,104**	**2,031**	**+84.0**	
Special items	*(437)*	*(259)*			*(1,223)*	*(521)*		
EBIT before special items*	***602***	***580***	***−3.7***		***2,327***	***2,552***	***+9.7***	
EBITDA*	**392**	**618**	**+57.7**		**2,022**	**3,124**	**+54.5**	
Special items	*(443)*	*(204)*			*(1,210)*	*(366)*		
EBITDA before special items*	***835***	***822***	***−1.6***		***3,232***	***3,490***	***+8.0***	
EBITDA margin before special items*	29.1%	27.6%			29.9%	31.2%		
Gross cash flow**	**228**	**510**	**+123.7**		**1,319**	**2,293**	**+73.8**	
Net cash flow**	**545**	**625**	**+14.7**		**2,262**	**1,853**	**−18.1**	

2012 figures restated
Fx (& p) adj. = currency- (and portfolio-)adjusted (Fx & p adj.: Sales; Fx adj.: Sales by region)
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
** For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

Sales of the **Pharmaceuticals** segment registered dynamic growth in 2013, climbing by 9.4% (Fx & portfolio adj.) to €11,188 million. The increase was driven by our recently launched products Xarelto™, Eylea™, Stivarga™ and Xofigo™, which recorded combined sales of €1,520 million (2012: €368 million). Marketing of Adempas™ (active ingredient: riociguat), our new medicine to treat pulmonary hypertension, commenced in the fall following approvals in North America. Our Pharmaceuticals business posted currency-adjusted sales growth in all regions, and especially in Japan, the United States, Germany and China.

Best-Selling Pharmaceuticals Products [Table 3.15.3]

	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx adj. %	€ million	€ million	%	Fx adj. %
Kogenate™	298	274	−8.1	−2.1	1,182	1,202	+1.7	+6.4
Betaferon™/Betaseron™	329	259	−21.3	−17.6	1,216	1,038	−14.6	−11.6
Xarelto™	131	316	+141.2	+158.9	322	949	+194.7	+210.7
YAZ™/Yasmin™/Yasminelle™	270	219	−18.9	−11.4	1,045	853	−18.4	−12.5
Nexavar™	212	194	−8.5	−1.2	792	771	−2.7	+3.3
Mirena™	135	195	+44.4	+51.6	677	719	+6.2	+10.0
Adalat™	169	157	−7.1	+6.1	670	603	−10.0	−0.9
Aspirin™ Cardio	129	120	−7.0	+1.9	476	452	−5.0	+0.6
Avalox™/Avelox™	123	106	−13.8	−7.6	486	426	−12.3	−8.8
Glucobay™	99	112	+13.1	+19.3	408	423	+3.7	+6.6
Eylea™	14	126	.	.	14	333	.	.
Levitra™	87	69	−20.7	−15.2	307	290	−5.5	−1.2
Cipro™/Ciprobay™	56	42	−25.0	−15.4	229	197	−14.0	−7.8
Stivarga™	31	59	+90.3	100.2	32	197	.	.
Zetia™	57	45	−21.1	+3.9	207	172	−16.9	+5.4
Total	**2,140**	**2,293**	**+7.1**	**+15.9**	**8,063**	**8,625**	**+7.0**	**+13.4**
Proportion of Pharmaceuticals sales	75%	77%			75%	77%		

Fx adj. = currency-adjusted

Xarelto™ became the world leader among the novel oral anticoagulants in terms of sales in 2013 following considerable sales gains, especially in Germany, Japan and France.* Business with Xarelto™ also developed very positively in the United States, where it is marketed by a subsidiary of Johnson & Johnson. Sales of the eye medicine Eylea™ rose substantially, particularly in Japan, Australia and Germany. We successfully introduced our cancer drug Stivarga™ in additional countries, and recorded the first sales of the cancer drug Xofigo™ (2013 sales: €41 million).

Sales of our blood-clotting medicine Kogenate™ rose thanks to higher volumes. The cancer drug Nexavar™ posted currency-adjusted gains, mainly as a result of price increases in the United States. Sales of our hormone-releasing intrauterine device Mirena™ also increased, particularly in light of adjustments to provisions for rebates in the United States and higher volumes in other countries. The oral diabetes treatment Glucobay™ benefited from continuing growth in demand in the Emerging Markets.

Sales of the multiple sclerosis drug Betaferon™/Betaseron™ receded as expected, particularly in the United States due to increased competition there. Business with our YAZ™/Yasmin™/Yasminelle™ line of oral contraceptives was hampered mainly by generic competition in Western Europe and the United States. Business with the antibiotic Avalox™/Avelox™ declined, mainly as a result of lower demand in the United States. Our antibiotic Cipro™/Ciprobay™ registered lower sales, particularly in the United Kingdom, where we had benefited from a government contract in the previous year.

EBIT of the **Pharmaceuticals** segment rose by a substantial 84.0% in 2013, to €2,031 million. The main reason for this – apart from the increase in operational earnings – was the decrease in special charges to €521 million (2012: €1,223 million). The special charges comprised €269 million in charges related to legal claims, including €155 million related to claims concerning Yasmin™/YAZ™ in the United States; €140 million in impairment losses recognized on research projects; €66 million in restructuring charges; and €46 million in expenses for the integration of our Conceptus business. EBIT before special items rose by 9.7% to €2,552 million. We raised **EBITDA** before special items by 8.0% to €3,490 million. This earnings growth was mainly attributable to the good business development and especially to sharp sales increases for our recently launched products, while earnings were diminished by higher selling and R&D expenses and roughly €140 million in negative currency effects.

* as of November 2013; source: internal calculations based on IMS Health MIDAS database – monthly sales November 2013

CONSUMER HEALTH

Key Data – Consumer Health [Table 3.15.4]

	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx (& p) adj. %	€ million	€ million	%	Fx (& p) adj. %
Sales	**2,055**	**1,964**	**−4.4**	**+1.0**	**7,806**	**7,736**	**−0.9**	**+3.2**
Consumer Care	1,055	1,015	−3.8	+0.9	3,853	3,904	+1.3	+5.1
Medical Care	716	653	−8.8	−3.1	2,650	2,526	−4.7	−0.3
Animal Health	284	296	+4.2	+11.6	1,303	1,306	+0.2	+4.5
Sales by region								
Europe	743	768	+3.4	+5.2	2,806	2,935	+4.6	+6.0
North America	680	623	−8.4	−3.5	2,591	2,484	−4.1	−0.7
Asia/Pacific	329	297	−9.7	+2.7	1,257	1,172	−6.8	+2.1
Latin America/Africa/Middle East	303	276	−8.9	+5.6	1,152	1,145	−0.6	+10.0
EBIT	**393**	**310**	**−21.1**		**1,101**	**1,229**	**+11.6**	
Special items	*(23)*	*(95)*			*(359)*	*(192)*		
EBIT before special items*	***416***	***405***	***−2.6***		***1,460***	***1,421***	***−2.7***	
EBITDA*	**503**	**451**	**−10.3**		**1,844**	**1,734**	**−6.0**	
Special items	*(21)*	*(64)*			*(43)*	*(110)*		
EBITDA before special items*	***524***	***515***	***−1.7***		***1,887***	***1,844***	***−2.3***	
EBITDA margin before special items*	25.5%	26.2%			24.2%	23.8%		
Gross cash flow**	**367**	**330**	**−10.1**		**1,340**	**1,280**	**−4.5**	
Net cash flow**	**518**	**334**	**−35.5**		**1,284**	**1,127**	**−12.2**	

2012 figures restated
Fx (& p) adj. = currency- (and portfolio-)adjusted (Fx & p adj.: Sales; Fx adj.: Sales by region)
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
** For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

Sales of the **Consumer Health** segment advanced by 3.2% (Fx & portfolio adj.) in 2013 to €7,736 million. The increase was attributable to the Consumer Care and Animal Health divisions and to gratifying overall development in the Emerging Markets, particularly Russia and Brazil.

Best-Selling Consumer Health Products [Table 3.15.5]

	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx adj. %	€ million	€ million	%	Fx adj. %
Contour™ (Medical Care)	193	179	−7.3	−4.1	722	722	0.0	+2.2
Advantage™ product line (Animal Health)	92	98	+6.5	+12.8	495	487	−1.6	+2.0
Aspirin™ (Consumer Care)	138	120	−13.0	−8.1	494	464	−6.1	−2.5
Ultravist™ (Medical Care)	82	80	−2.4	0.0	322	322	0.0	+2.3
Aleve™ (Consumer Care)	87	82	−5.7	−1.0	323	321	−0.6	+3.3
Bepanthen™/Bepanthol™ (Consumer Care)	67	77	+14.9	+23.6	269	310	+15.2	+20.3
Canesten™ (Consumer Care)	65	61	−6.2	+1.5	250	257	+2.8	+8.4
Gadovist™ / Gadavist™ (Medical Care)	60	55	−8.3	−4.8	209	205	−1.9	−0.2
One A Day™ (Consumer Care)	53	48	−9.4	−3.4	196	176	−10.2	−7.0
Supradyn™ (Consumer Care)	42	43	+2.4	+10.4	146	158	+8.2	+14.3
Total	**879**	**843**	**−4.1**	**+0.9**	**3,426**	**3,422**	**−0.1**	**+3.3**
Proportion of Consumer Health sales	43%	43%			44%	44%		

Fx adj.= currency-adjusted
Total sales of Aspirin™ (including Aspirin™ Complex), also including Aspirin™ Cardio, which is reflected in sales of the Pharmaceuticals segment, decreased by 5.6% (Fx adj. −1.0%) in 2013 to €916 million (2012: €970 million). Total sales of this product in the fourth quarter of 2013 declined by 10.1% (Fx adj. −3.3%) to €240 million (Q4 2012: €267 million).

Sales in the **Consumer Care** Division rose by 5.1% (Fx & portfolio adj.) to €3,904 million. Business with our analgesic Aleve™ expanded on a currency-adjusted basis, mainly due to increased marketing activities in Brazil and price increases in the United States. The skincare product Bepanthen™/ Bepanthol™ registered strong growth in the Emerging Markets, especially Brazil and Russia. The antifungal Canesten™ also developed positively. Sales of the dietary supplement Supradyn™ advanced by a double-digit percentage on a currency-adjusted basis, partly as a result of strong business development in Russia. Business with our analgesic Aspirin™ and the dietary supplement One A Day™ declined, primarily due to lower demand in the United States.

Sales in the **Medical Care** Division were level year on year (Fx & portfolio adj.) at €2,526 million (–0.3%). Business in the United States was hampered particularly by reimbursement pressure and lower prices, while sales developed positively elsewhere. Our Diabetes Care business performed at around the previous year's level in a shrinking overall market. However, we achieved slight currency-adjusted sales gains for the Contour™ line of blood glucose meters, mainly thanks to the launch of Contour™ Next. Sales of contrast agents and medical devices in the Radiology & Interventional business were at the prior-year level on a currency-adjusted basis.

Sales of the **Animal Health** Division rose by 4.5% (Fx & portfolio adj.) to €1,306 million. We slightly raised sales of the Advantage™ line of flea, tick and worm control products due to gratifying development in Europe. We achieved robust sales growth for the Seresto™ flea and tick collar (2013 sales: €31 million), which was also launched in the United States in 2013.

EBIT of the **Consumer Health** segment improved by 11.6% in 2013 to €1,229 million. This increase was attributable to the lower net special charges of €192 million (2012: €359 million). The special charges comprised €138 million in restructuring charges, a €44 million impairment loss recognized on an intangible asset and €30 million in expenses for the integration of acquired businesses. EBIT before special items amounted to €1,421 million (–2.7%). **EBITDA** before special items fell by 2.3% to €1,844 million. Positive earnings contributions from sales growth in the Consumer Care and Animal Health divisions were more than offset by higher selling expenses in the Emerging Markets and roughly €150 million in negative currency effects.

15.2 CropScience

Key Data – CropScience [Table 3.15.6]

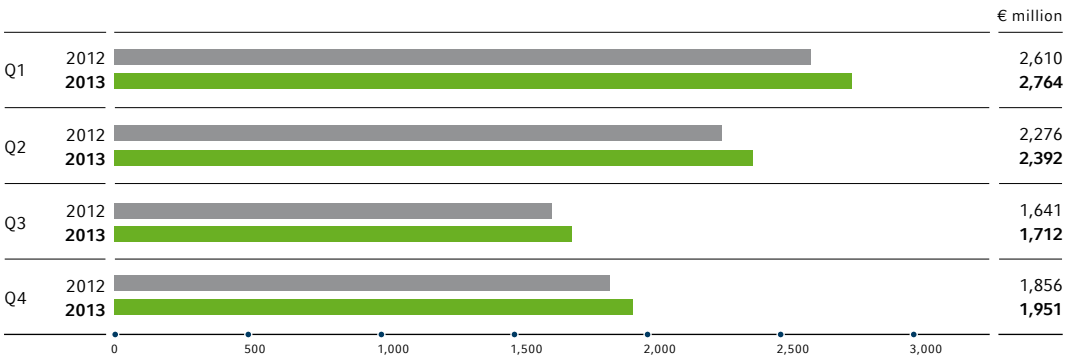
	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx (& p) adj. %	€ million	€ million	%	Fx (& p) adj. %
Sales	**1,856**	**1,951**	**+5.1**	**+12.8**	**8,383**	**8,819**	**+5.2**	**+9.4**
Change in sales								
Volume	+9.0%	+11.8%			+11.6%	+6.8%		
Price	+0.1%	+1.0%			+0.8%	+2.6%		
Currency	+1.9%	−8.2%			+3.8%	−4.7%		
Portfolio	−0.3%	+0.5%			−0.7%	+0.5%		
Sales by operating segment								
Crop Protection/Seeds	1,682	1,797	+6.8	+14.6	7,703	8,168	+6.0	+10.1
Environmental Science	174	154	−11.5	−4.6	680	651	−4.3	+1.3
Sales by region								
Europe	393	411	+4.6	+5.3	2,706	2,799	+3.4	+4.3
North America	287	301	+4.9	+10.5	2,154	2,211	+2.6	+5.0
Asia/Pacific	363	329	−9.4	+4.4	1,386	1,358	−2.0	+7.9
Latin America/Africa/Middle East	813	910	+11.9	+22.3	2,137	2,451	+14.7	+23.6
EBIT	**247**	**163**	**−34.0**		**1,556**	**1,729**	**+11.1**	
Special items	*79*	*(40)*			*13*	*(72)*		
EBIT before special items*	***168***	***203***	***+20.8***		***1,543***	***1,801***	***+16.7***	
EBITDA*	**374**	**282**	**−24.6**		**2,050**	**2,184**	**+6.5**	
Special items	*79*	*(37)*			*25*	*(64)*		
EBITDA before special items*	***295***	***319***	***+8.1***		***2,025***	***2,248***	***+11.0***	
EBITDA margin before special items*	15.9%	16.4%			24.2%	25.5%		
Gross cash flow**	**132**	**228**	**+72.7**		**1,332**	**1,590**	**+19.4**	
Net cash flow**	**105**	**29**	**−72.4**		**899**	**682**	**−24.1**	

2012 figures restated
Fx (& p) adj. = currency- (and portfolio-)adjusted (Fx & p adj.: Sales and Sales by operating segment; Fx adj.: Sales by region)
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
** For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

PHOTO // The scanning electron micrograph above shows part of the surface of a soybean plant leaf – magnified about 4,500 times.

CropScience raised **sales** in 2013 by 9.4% (Fx & portfolio adj.) to €8,819 million (reported: +5.2%). Thus we succeeded in substantially growing the business despite the late start to the season in the northern hemisphere. Sales in Crop Protection/Seeds developed positively, due to the attractive market environment and especially to an increase in sales of the new Crop Protection products we have launched since 2006 to more than €1,510 million (reported: approx. +30%). Sales in the Seeds unit rose slightly overall despite reduced canola and cotton acreages in North America. The Environmental Science unit also registered a small increase in sales.

CropScience Quarterly Sales [Graphic 3.15.4]



2012 figures restated

Sales in **Crop Protection/Seeds** climbed by 10.1% (Fx & portfolio adj.), to €8,168 million. All of the Crop Protection business units developed positively. Fungicides and Insecticides achieved the largest increases in percentage terms, with Herbicides and SeedGrowth posting encouraging gains. Sales of vegetable seeds also moved ahead.

Sales in **Environmental Science** edged upward by 1.3% (Fx & portfolio adj.) to €651 million. The positive development in products for professional users more than offset the decline in the consumer business.

Sales by Business Units [Table 3.15.7]

	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx & p adj. %	€ million	€ million	%	Fx & p adj. %
Herbicides	451	469	+4.0	+11.5	2,356	2,456	+4.2	+8.3
Fungicides	445	445	0.0	+6.7	1,974	2,195	+11.2	+14.9
Insecticides	424	465	+9.7	+20.1	1,514	1,622	+7.1	+14.1
SeedGrowth	220	247	+12.3	+18.6	897	921	+2.7	+7.1
Crop Protection	1,540	1,626	+5.6	+13.6	6,741	7,194	+6.7	+11.4
Seeds	142	171	+20.4	+25.2	962	974	+1.2	+1.2
Crop Protection/Seeds	**1,682**	**1,797**	**+6.8**	**+14.6**	**7,703**	**8,168**	**+6.0**	**+10.1**
Environmental Science	**174**	**154**	**−11.5**	**−4.6**	**680**	**651**	**−4.3**	**+1.3**

2012 figures restated
Fx & p adj. = currency- and portfolio-adjusted

CropScience achieved currency-adjusted sales increases in all regions.

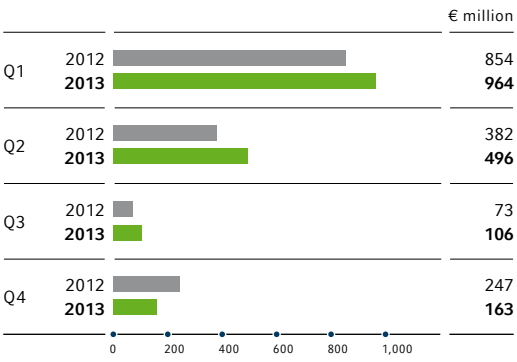
In **Europe**, sales rose by 4.3% (Fx adj.) to €2,799 million, mainly in light of the positive development at Crop Protection/Seeds. Fungicides posted double-digit growth. Both Insecticides and the vegetable seed business developed well, while sales of Herbicides showed only a small increase. Business in SeedGrowth receded overall, partly as a consequence of use restrictions for products containing neonicotinoids. Sales of Environmental Science receded due to the downturn in the consumer business.

Sales in **North America** advanced by 5.0% (Fx adj.) to €2,211 million. This was primarily attributable to the robust business development in SeedGrowth with products for use in corn and soybeans and to positive development in Herbicides. Double-digit growth was also recorded in Fungicides, while sales in the Insecticides unit declined due to lower infestation pressure. Business in Seeds was down against a strong prior year. The positive development of our vegetable seeds business did not fully offset the lower sales of canola and cotton seed, which were due to reduced acreages. Business expanded at Environmental Science.

Sales in the **Asia/Pacific** region advanced by 7.9% (Fx adj.) to €1,358 million, thanks partly to increased sales in Herbicides. Business in Insecticides and Fungicides also expanded. Our Seeds business developed successfully, too, with double-digit growth for vegetable and rice seeds. The region as a whole benefited especially from a significant business improvement in India. Sales in Environmental Science were at the previous year's level.

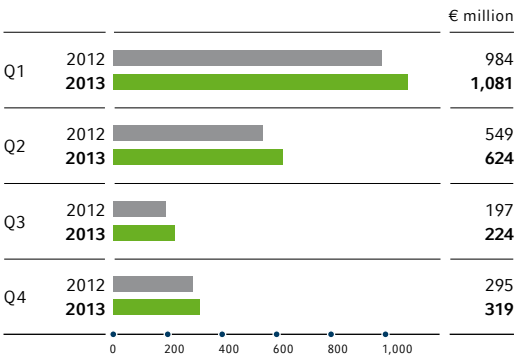
Growth was strongest in **Latin America/Africa/Middle East**, where sales climbed by a substantial 23.6% (Fx adj.) to €2,451 million. We achieved double-digit growth in Crop Protection/Seeds in a very positive market environment. Sales of the Insecticides unit posted particularly good gains, driven by our products for use in soybeans and corn. In Fungicides, products for use in soybeans were especially successful. The SeedGrowth and Herbicides businesses also developed very well. Sales in Seeds advanced in addition, particularly for vegetable and cotton seed. The soybean seed business also developed very well, partly due to acquisitions made in 2013. Brazil and Argentina accounted for a major part of the region's positive sales development. Sales in Environmental Science also moved ahead.

CropScience
Quarterly EBIT [Graphic 3.15.5]



2012 figures restated

CropScience
Quarterly EBITDA Before Special Items [Graphic 3.15.6]



2012 figures restated

EBIT of **CropScience** rose in 2013 by a substantial 11.1%, from €1,556 million in the prior year to €1,729 million after special charges of €72 million (2012: special gain of €13 million). The special charges mainly comprised restructuring expenses in Crop Protection. EBIT before special items advanced by 16.7% to €1,801 million. **EBITDA** before special items moved ahead by 11.0% to €2,248 million. Earnings growth was mainly the result of significant volume increases and higher selling prices, with positive currency effects of some €20 million also contributing to the increase.

15.3 MaterialScience

Key Data – MaterialScience [Table 3.15.8]

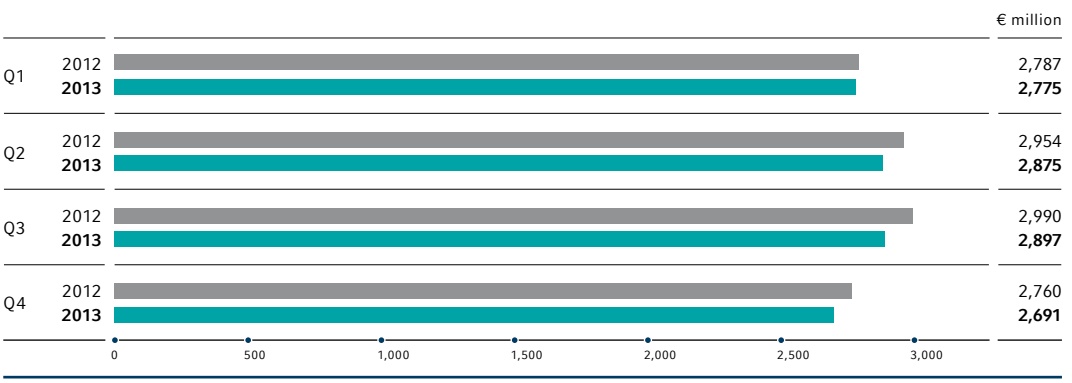
	4th Quarter 2012	4th Quarter 2013	Change		Full Year 2012	Full Year 2013	Change	
	€ million	€ million	%	Fx (& p) adj. %	€ million	€ million	%	Fx (& p) adj. %
Sales	**2,760**	**2,691**	**–2.5**	**+1.6**	**11,491**	**11,238**	**–2.2**	**+0.4**
Change in sales								
Volume	+2.6%	+4.1%			+2.4%	+0.6%		
Price	+2.2%	–2.5%			+0.6%	–0.2%		
Currency	+2.2%	–3.6%			+3.9%	–2.4%		
Portfolio	–0.6%	–0.5%			–0.7%	–0.2%		
Sales by business unit								
Polyurethanes	1,473	1,472	–0.1	+4.0	5,987	6,054	+1.1	+3.9
Polycarbonates	668	640	–4.2	–0.9	2,819	2,640	–6.3	–4.5
Coatings, Adhesives, Specialties	451	417	–7.5	–1.1	1,972	1,863	–5.5	–1.9
Industrial Operations	168	162	–3.6	–2.4	713	681	–4.5	–3.6
Sales by region								
Europe	1,027	1,040	+1.3	+1.5	4,403	4,363	–0.9	–0.8
North America	579	561	–3.1	+1.6	2,441	2,424	–0.7	+2.5
Asia/Pacific	771	762	–1.2	+5.2	3,149	3,048	–3.2	+0.9
Latin America/Africa/Middle East	383	328	–14.4	–8.9	1,498	1,403	–6.3	–2.3
EBIT	**94**	**70**	**–25.5**		**581**	**435**	**–25.1**	
Special items	*(1)*	*(18)*			*(32)*	*6*		
EBIT before special items*	***95***	***88***	***–7.4***		***613***	***429***	***–30.0***	
EBITDA*	**265**	**244**	**–7.9**		**1,236**	**1,101**	**–10.9**	
Special items	*1*	*(4)*			*(27)*	*29*		
EBITDA before special items*	***264***	***248***	***–6.1***		***1,263***	***1,072***	***–15.1***	
EBITDA margin before special items*	9.6%	9.2 %			11.0%	9.5 %		
Gross cash flow**	**216**	**217**	**+0.5**		**952**	**887**	**–6.8**	
Net cash flow**	**250**	**545**	**.**		**735**	**977**	**+32.9**	

2012 figures restated
Fx (& p) adj. = currency- (and portfolio-)adjusted (Fx & p adj.: Sales and Sales by business unit; Fx adj.: Sales by region)
* For definition see Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
** For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

PHOTO // The scanning electron micrograph above shows a cross-section through a flexible polyurethane foam – magnified about 85 times.

The **MaterialScience** subgroup posted **sales** of €11,238 million in 2013, matching the prior-year level on a currency- and portfolio-adjusted basis (+0.4%; reported: –2.2%). There was a slight overall improvement in volumes, with increases in Asia and North America offsetting volume declines in Latin America/Africa/Middle East and Europe. However, selling prices overall were slightly below the prior-year level. Higher prices in North and Latin America roughly compensated for decreases in Asia/Pacific and Europe.

MaterialScience Quarterly Sales [Graphic 3.15.7]



2012 figures restated

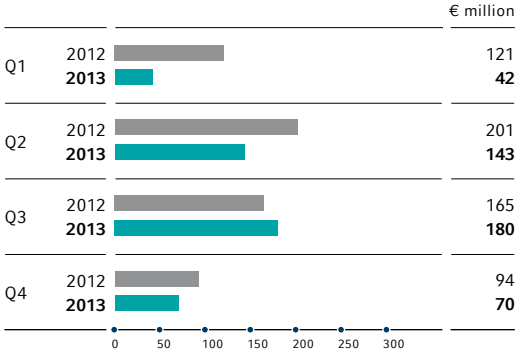
Sales in the **Polyurethanes** business unit rose by 3.9% (Fx & portfolio adj.) to €6,054 million. Volume gains in Asia/Pacific and North America contributed to this increase. Selling prices as a whole were at the prior-year level. Prices for diphenylmethane diisocyanate (MDI) increased, with volumes unchanged from the previous year. Volumes of toluene diisocyanate (TDI) improved significantly, but prices receded. Volumes for polyether (PET) moved somewhat lower, with selling prices at the level of the prior year.

Sales of the **Polycarbonates** business unit receded by 4.5% (Fx & portfolio adj.) to €2,640 million. This decline was mainly due to a drop in volumes in all regions on account of weaker demand. A further factor was the lower level of selling prices in Asia/Pacific caused by market overcapacities.

Sales in the **Coatings, Adhesives, Specialties** business unit fell by 1.9% (Fx & portfolio adj.) to €1,863 million, largely as a result of lower selling prices in Asia/Pacific. Volumes as a whole were flat with the prior year.

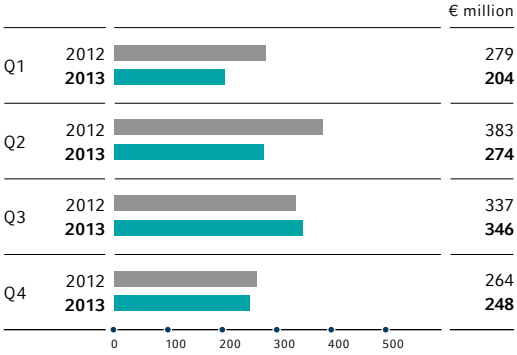
Sales of **Industrial Operations** moved back by 3.6% (Fx & portfolio adj.) to €681 million due to lower overall price levels. Volumes, however, were unchanged.

MaterialScience
Quarterly EBIT [Graphic 3.15.8]



2012 figures restated

MaterialScience
Quarterly EBITDA Before Special Items [Graphic 3.15.9]



2012 figures restated

EBIT of **MaterialScience** receded by 25.1% in 2013 to €435 million. This included a net special gain of €6 million (2012: special charges of €32 million), the €42 million gain from the disposal of parts of our polyester resins business being largely offset by restructuring expenses. EBIT before special items fell by a substantial 30.0% to €429 million. **EBITDA** before special items dropped by 15.1% to €1,072 million. This decline was mainly due to a sharp rise in raw material costs, especially in the first half of the year. Earnings were also diminished by somewhat lower selling prices. These effects were partly offset by a slight rise in volumes, savings from our efficiency improvement measures and positive currency effects of about €10 million. Successful working capital management resulted in a significant improvement in cash flow, to €977 million (2012: €735 million; +32.9%).

15.4 Business Development by Region

Sales by Region and Segment (by Market) [Table 3.15.9]

	Europe				North America				Asia / Pacific				Latin America/Africa/Middle East				Total			
	Full Year 2012	Full Year 2013			Full Year 2012	Full Year 2013			Full Year 2012	Full Year 2013			Full Year 2012	Full Year 2013			Full Year 2012	Full Year 2013		
	€ million	€ million	% yoy	Fx adj. % yoy	€ million	€ million	% yoy	Fx adj. % yoy	€ million	€ million	% yoy	Fx adj. % yoy	€ million	€ million	% yoy	Fx adj. % yoy	€ million	€ million	% yoy	Fx adj. % yoy
HealthCare	**6,483**	**6,853**	**+5.7**	**+6.8**	**4,961**	**5,024**	**+1.3**	**+4.7**	**4,196**	**4,188**	**−0.2**	**+11.1**	**2,964**	**2,859**	**−3.5**	**+8.0**	**18,604**	**18,924**	**+1.7**	**+7.4**
Pharmaceuticals	3,677	3,918	+6.6	+7.5	2,370	2,540	+7.2	+10.6	2,939	3,016	+2.6	+14.9	1,812	1,714	−5.4	+6.8	10,798	11,188	+3.6	+10.1
Consumer Health	2,806	2,935	+4.6	+6.0	2,591	2,484	−4.1	−0.7	1,257	1,172	−6.8	+2.1	1,152	1,145	−0.6	+10.0	7,806	7,736	−0.9	+3.7
CropScience	**2,706**	**2,799**	**+3.4**	**+4.3**	**2,154**	**2,211**	**+2.6**	**+5.0**	**1,386**	**1,358**	**−2.0**	**+7.9**	**2,137**	**2,451**	**+14.7**	**+23.6**	**8,383**	**8,819**	**+5.2**	**+9.9**
MaterialScience	**4,403**	**4,363**	**−0.9**	**−0.8**	**2,441**	**2,424**	**−0.7**	**+2.5**	**3,149**	**3,048**	**−3.2**	**+0.9**	**1,498**	**1,403**	**−6.3**	**−2.3**	**11,491**	**11,238**	**−2.2**	**+0.2**
Group (incl. reconciliation)	**14,722**	**15,086**	**+2.5**	**+3.1**	**9,576**	**9,680**	**+1.1**	**+4.2**	**8,759**	**8,623**	**−1.6**	**+6.9**	**6,684**	**6,768**	**+1.3**	**+10.2**	**39,741**	**40,157**	**+1.0**	**+5.4**

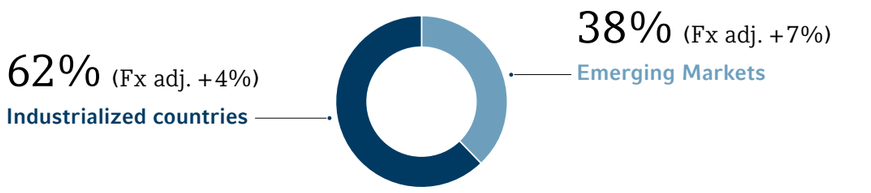
2012 figures restated
yoy = year on year; Fx. adj. = currency-adjusted

15.5 Business Development in the Emerging Markets

The Emerging Markets again accounted for a disproportionately large share of sales growth in 2013. For reporting purposes we have defined the Emerging Markets as Asia (excluding Japan), Latin America, Eastern Europe, Africa and the Middle East.

Sales in these markets rose in 2013 by 7.3% (Fx adj.) to €15,040 million (2012: €14,785 million), with pleasing gains in Latin America, Asia and Eastern Europe. The Emerging Markets accounted for 37.5% of sales (2012: 37.2%).

Sales Development in 2013 [Graphic 3.15.10]



currency-adjusted changes in parentheses

HEALTHCARE

HealthCare raised sales in the Emerging Markets by 8.0% (Fx adj.) in 2013 to €6,236 million (2012: €6,169 million), with the Latin America region posting the highest currency-adjusted growth rate. Here, Argentina and Brazil saw the strongest currency-adjusted increases, especially in sales of our Consumer Care products. The largest increase in absolute terms occurred in China, mainly in light of the continued expansion of our distribution network. We also achieved gratifying sales growth in Russia, primarily in Consumer Care. The Emerging Markets accounted for 33.0% (2012: 33.2%) of total HealthCare sales.

› ONLINE ANNEX: 3-15.5-1

In Russia, HealthCare is supporting the ongoing reorganization of the country's health system that forms part of the government's "Pharma 2020" reform program. This program is designed to achieve a 10-year increase in life expectancy by 2020 by improving health care, establishing a government-run health insurance system and modernizing the pharmaceutical industry. Bayer plans to provide assistance with educational and prevention programs.

CROPSCIENCE

CropScience improved sales in the Emerging Markets by 18.2% (Fx adj.) in 2013, to €3,959 million (2012: €3,570 million). Business developed particularly well in Latin America, especially in Brazil and Argentina. We posted encouraging sales gains in Asia and Eastern Europe. Sales in Africa/Middle East also increased. The Emerging Markets' share of total CropScience sales in 2013 was 44.9% (2012: 42.6%).

› ONLINE ANNEX: 3-15.5-2

Growing the business in the Emerging Markets, and especially in developing countries, also involves finding solutions to specific local challenges.

CropScience aims to contribute to increased agricultural productivity in Africa and intends to expand its presence there. The subgroup's range of products and services is tailored to the needs of African farmers and includes integrated crop solutions based on improved seed varieties and modern crop protection technologies. We also run product safety programs and provide training in good agricultural practice. We regard public-private partnerships as the key to rural development and affluence in Africa and therefore work together with local governments, farmers' associations, cooperatives, non-governmental organizations, agricultural input suppliers, banks and insurers.

CropScience also aims to help raise living standards in rural areas of India by boosting value added and ensuring it is reinvested in the community. An example is the Model Village Project launched in 2010. The aim of this project is to train farmers in sustainable cultivation methods and show them new ways of irrigating their land in order to improve productivity. Parallel measures are also being taken to improve general living conditions, such as the commissioning of a drinking water purification plant and the launch of health promotion and children's educational programs. The Bayer Prayas Rural Development Association coordinates the activities at the local level in the model villages in the state of Karnataka in southwest India.

MATERIALSCIENCE

In the Emerging Markets, MaterialScience had sales of €4,761 million in 2013 (2012: €4,933 million), down 1.0% year on year (Fx. adj.). Sales fell considerably in Africa/Middle East, especially in Turkey. Sales in Asia were practically flat with the prior year, although business expanded in China. In Latin America, too, sales came in at the previous year's level. In Eastern Europe, however, we posted a slight increase. The Emerging Markets accounted for 42.4% (2012: 42.9%) of total sales at MaterialScience.

› ONLINE ANNEX: 3-15.5-3

In cooperation with external partners, MaterialScience is evolving and implementing technical solutions to help low-income people in developing countries and Emerging Markets gain improved access to high-quality, safe and easy-to-build yet affordable housing. These activities currently focus on Asia. The company is mainly contributing its expertise in the field of polyurethane rigid foam for the construction industry.

16. Earnings; Asset and Financial Position of the Bayer Group

16.1 Earnings Performance of the Bayer Group

Bayer Group Summary Income Statements [Table 3.16.1]

	2012	2013	Change
	€ million	€ million	%
Net sales	39,741	40,157	+1.0
Cost of goods sold	19,070	19,347	+1.5
Selling expenses	9,981	10,080	+1.0
Research and development expenses	3,013	3,190	+5.9
General administration expenses	1,866	1,883	+0.9
Other operating income (+) and expenses (–)	(1,883)	(723)	+61.6
EBIT*	**3,928**	**4,934**	**+25.6**
Financial result	**(752)**	**(727)**	**+3.3**
Income before income taxes	**3,176**	**4,207**	**+32.5**
Income taxes	(723)	(1,021)	–41.2
Income after income taxes	**2,453**	**3,186**	**+29.9**
of which attributable to non-controlling interest	50	(3)	–
of which attributable to Bayer AG stockholders (net income)	**2,403**	**3,189**	**+32.7**

2012 figures restated
* EBIT = earnings before financial result and taxes

Sales of the Bayer Group rose to €40,157 million (+1.0%). The increase after adjusting for currency and portfolio effects was 5.1%.

The cost of goods sold increased by 1.5% to €19,347 million, mainly due to higher volumes and a rise in raw material costs at MaterialScience. The ratio of the cost of goods sold to total sales was 48.2% (2012: 48.0%). The selling expenses of €10,080 million (+1.0%) amounted to 25.1% of sales (2012: 25.1%). Research and development (R&D) expenses rose in 2013 by 5.9% to €3,190 million, the increase being attributable to HealthCare and CropScience. The ratio of R&D expenses to sales was slightly higher at 7.9% (2012: 7.6%). General administration expenses, at €1,883 million, were level with the prior year (+0.9%). The ratio of general administration expenses to total sales thus remained unchanged at 4.7%. The negative balance of other operating income and expenses was reduced considerably to minus €723 million (2012: minus €1,883 million), mainly because special charges for accounting measures related to legal claims were lower in 2013 (see also Chapter 16.2 "Calculation of EBIT(DA) Before Special Items").

EBIT climbed by 25.6% in 2013 to €4,934 million.

The financial result improved by 3.3% to minus €727 million. It included €355 million (2012: €252 million) in net interest expense, €297 million (2012: €389 million) in interest cost for pension and other provisions, a €120 million (2012: €69 million) net exchange loss and a €59 million net gain (2012: €23 million net loss) from investments in affiliated companies. Income from investments in affiliated companies included a €77 million gain from the sale of Bayer's interest in Onyx Pharmaceuticals Inc., United States. The net interest position was particularly affected by interest expense in connection with a court proceeding brought by former Schering stockholders. The decrease in pension-related interest cost resulted partly from the effect of lower interest rates on the interest cost for defined benefit plans, which is reported net of the expected return on plan assets.

Tax expense in 2013 increased to €1,021 million as a result of earnings growth (2012: €723 million). Income after income taxes came in at €3,186 million. Income attributable to non-controlling interest fell by €53 million to minus €3 million. The prior-year figure contained minority stockholders' interest in divestiture gains. Bayer Group net income for 2013 was €3,189 million (2012: €2,403 million).

16.2 Calculation of EBIT(DA) Before Special Items

Key performance indicators for the Bayer Group are EBIT before special items and EBITDA before special items. These indicators are reported in order to allow a more accurate assessment of business operations. The special items – comprising effects that are non-recurring or do not regularly recur or attain similar magnitudes – are detailed in the following table. EBITDA, EBITDA before special items and EBIT before special items are not defined in the International Financial Reporting Standards and should therefore be regarded only as supplementary information. EBITDA before special items is a meaningful indicator of operating performance since it is not affected by depreciation, amortization, impairment losses, impairment loss reversals or special items. By reporting this indicator, the company aims to give readers a clear picture of the results of operations and ensure comparability of data over time. The EBITDA margin before special items, which is the ratio of EBITDA before special items to sales, serves as a relative indicator for the internal and external comparison of operational earning power.

Depreciation, amortization and impairments decreased by 3.1% in 2013 to €2,896 million (2012: €2,988 million), comprising €1,572 million (2012: €1,659 million) in amortization and impairments of intangible assets, impairment loss reversals of €13 million (2012: €21 million) and €1,337 million (2012: €1,350 million) in depreciation and impairments of property, plant and equipment. A total of €268 million (2012: €347 million) in depreciation, amortization and impairments constituted special items. This amount comprised €259 million (2012: €315 million) in impairment losses and €22 million (2012: €48 million) in depreciation and amortization, less €13 million (2012: €16 million) in impairment loss reversals.

Special Items Reconciliation [Table 3.16.2

	EBIT* 4th Quarter 2012	EBIT* 4th Quarter 2013	EBIT* Full Year 2012	EBIT* Full Year 2013	EBITDA** 4th Quarter 2012	EBITDA** 4th Quarter 2013	EBITDA** Full Year 2012	EBITDA** Full Year 2013
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Before special items	**1,153**	**1,094**	**5,639**	**5,773**	**1,826**	**1,769**	**8,280**	**8,401**
HealthCare	**(460)**	**(354)**	**(1,582)**	**(713)**	**(464)**	**(268)**	**(1,253)**	**(476)**
Impairment losses/ impairment loss reversals	16	(55)	(289)	(171)	–	–	–	14
Restructuring	(59)	(109)	(182)	(197)	(47)	(78)	(142)	(145)
Litigations	(455)	(180)	(1,160)	(269)	(455)	(180)	(1,160)	(269)
Integration costs	–	(10)	–	(76)	–	(10)	–	(76)
Adjustments to post-employment benefit entitlements	38	–	49	–	38	–	49	–
CropScience	**79**	**(40)**	**13**	**(72)**	**79**	**(37)**	**25**	**(64)**
Restructuring	(25)	(40)	(83)	(67)	(25)	(37)	(71)	(59)
Litigations	(59)	–	(83)	(5)	(59)	–	(83)	(5)
Divestitures	158	–	158	–	158	–	158	–
Adjustments to post-employment benefit entitlements	5	–	21	–	5	–	21	–
MaterialScience	**(1)**	**(18)**	**(32)**	**6**	**1**	**(4)**	**(27)**	**29**
Restructuring	(6)	(18)	(50)	(36)	(4)	(4)	(45)	(13)
Divestitures	–	–	–	42	–	–	–	42
Adjustments to post-employment benefit entitlements	5	–	18	–	5	–	18	–
Reconciliation	**(42)**	**(27)**	**(110)**	**(60)**	**(41)**	**(27)**	**(109)**	**(60)**
Restructuring	(24)	(25)	(81)	(58)	(23)	(25)	(80)	(58)
Litigations	(29)	(2)	(55)	(2)	(29)	(2)	(55)	(2)
Adjustments to post-employment benefit entitlements	11	–	26	–	11	–	26	–
Total special items	**(424)**	**(439)**	**(1,711)**	**(839)**	**(425)**	**(336)**	**(1,364)**	**(571)**
After special items	**729**	**655**	**3,928**	**4,934**	**1,401**	**1,433**	**6,916**	**7,830**

2012 figures restated
* EBIT = earnings before financial result and taxes
** EBITDA = EBIT plus amortization and impairment losses on intangible assets and depreciation and impairment losses on property, plant and equipment, minus impairment loss reversals

16.3 Core Earnings Per Share

Earnings per share according to IFRS are affected by the purchase price allocation for acquisitions and other special factors. To enhance comparability, we also determine core net income after eliminating amortization and impairments/impairment loss reversals of intangible assets, impairments/impairment loss reversals of property, plant and equipment, and special items in EBITDA including the related tax effects.

From this core net income we calculate core earnings per share in the same way as earnings per share. Core earnings per share form the basis for our dividend policy. Core earnings per share in 2013 rose by 5.8% to €5.61 (2012: €5.30).

Core Earnings per Share [Table 3.16.3]

	4th Quarter 2012	4th Quarter 2013	Full Year 2012	Full Year 2013
	€ million	€ million	€ million	€ million
EBIT (as per income statements)	**729**	**655**	**3,928**	**4,934**
Amortization and impairment losses/loss reversals of intangible assets	327	437	1,637	1,559
Impairment losses/loss reversals on property, plant and equipment	9	21	41	48
Special items (other than amortization and impairment losses/loss reversals)	425	336	1,364	571
Core EBIT	**1,490**	**1,449**	**6,970**	**7,112**
Financial result (as per income statements)	(169)	(84)	(752)	(727)
Special items in the financial result	(73)	(72)	(73)	10
Income taxes (as per income statements)	(156)	(129)	(723)	(1,021)
Tax effects related to amortization, impairment losses/loss reversals and special items	(255)	(266)	(1,024)	(734)
Income after income taxes attributable to non-controlling interest (as per income statements)	(38)	13	(50)	3
Special items in income after income taxes attributable to non-controlling interest	35	–	35	–
Core net income	**834**	**911**	**4,383**	**4,643**
	Shares	Shares	Shares	Shares
Number of issued ordinary shares	**826,947,808**	**826,947,808**	**826,947,808**	**826,947,808**
Core earnings per share (€)	**1.01**	**1.10**	**5.30**	**5.61**

2012 figures restated

The calculation of earnings per share according to IFRS is explained in Note [16] to the consolidated financial statements. Core net income, core earnings per share and core EBIT are not defined in IFRS.

Consolidated Financial Statements Note 16

16.4 Value Management

SYSTEM BASED ON CASH VALUE ADDED

The principal value-based steering parameters in the Bayer Group are the cash value added (CVA) and the cash flow return on investment (CFROI). If the CVA is positive, the respective company or business entity has exceeded the minimum requirements of the equity and debt capital providers and has created value. The CFROI is a ratio indicating the profitability of the Group or of individual business entities and must be compared to the cost of capital.

CALCULATING THE COST OF CAPITAL

Bayer calculates the cost of capital according to the debt/equity ratio at the beginning of the year using the weighted average cost of capital (WACC) formula. The cost of equity capital is the return expected by stockholders, computed from capital market information. The cost of debt capital used in calculating WACC is based on the terms for ten-year Eurobonds issued by industrial companies with an "A–"rating.

To take into account the different risk and return profiles of our principal businesses, we calculate individual capital cost factors after income taxes for each of our subgroups. These were 7.9% (2012: 8.1%) for HealthCare, 7.3% for CropScience (2012: 7.5%) and 6.9% (2012: 7.1%) for MaterialScience. The capital cost factor for the Group in 2013 was 7.6% (2012: 7.8%).

Cost of capital for the Bayer Group

7.6%

GROSS CASH FLOW, CASH VALUE ADDED AND CASH FLOW RETURN ON INVESTMENT AS PERFORMANCE YARDSTICKS

The gross cash flow is the measure of our internal financing capability. Bayer has chosen this parameter because it is relatively free of accounting influences and is therefore a more meaningful performance indicator.

Positive CVA = value created

Taking into account the costs of capital and of reproducing depletable assets, we determine the gross cash flow hurdle. If the gross cash flow hurdle is exceeded, the CVA is positive and thus the required return on equity and debt plus the cost of asset reproduction has been earned.

The CFROI is the difference between the gross cash flow and the cost of reproducing depletable assets, divided by the capital invested. The capital invested is calculated from the statement of financial position and basically comprises the property, plant and equipment and intangible assets required for operations – stated at the historical cost of acquisition or construction – plus working capital, less interest-free liabilities (such as current provisions). To mitigate the effect of fluctuations in the capital invested during the year, the CFROI is computed on the basis of the average capital invested for the respective year.

The gross cash flow hurdle for 2013 was €4,260 million (2012: €4,337 million).

Actual gross cash flow came in at €5,832 million, exceeding the hurdle by 36.9%. Thus the entire cost of capital and asset reproduction costs were earned in 2013. The positive CVA of €1,572 million shows that Bayer exceeded the minimum return and reproduction requirements and created value. The CVA rose by a clear €1,353 million compared with 2012. The CFROI for 2013 amounted to 11.1% (2012: 8.2%).

HealthCare and CropScience exceeded their required returns (including asset reproduction), raised their CVA and helped to increase the value of the Group. At MaterialScience, capital expenditures for new production facilities form the basis for profitable growth in the future. This strategic investment is aligned to medium- and long-term market developments and is currently holding back this subgroup's value management indicators.

Value Management Indicators by Subgroup [Table 3.16.4]

	HealthCare		CropScience		MaterialScience		Bayer Group	
	2012	2013	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Gross cash flow* (GCF)	2,659	3,573	1,332	1,590	952	887	4,556	5,832
Gross cash flow hurdle	2,214	2,109	824	906	1,079	1,060	4,337	4,260
Cash value added (CVA)	445	1,464	508	684	(127)	(173)	219	1,572
Cash flow return on investment (CFROI)	10.3%	14.1%	12.5%	14.2%	5.8%	5.5%	8.2%	11.1%
WACC	8.1%	7.9%	7.5%	7.3%	7.1%	6.9%	7.8%	7.6%
Average capital invested	22,180	22,480	9,203	9,881	10,525	10,371	43,247	43,548

2012 figures restated
Delta cash value added is not listed due to its limited importance.
* For definition see Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."

16.5 Liquidity and Capital Expenditures of the Bayer Group

Bayer Group Summary Statements of Cash Flows [Table 3.16.5]

	2012	2013
	€ million	€ million
Gross cash flow*	**4,556**	**5,832**
Changes in working capital/other non-cash items	(26)	(661)
Net cash provided by (used in) operating activities (net cash flow)	**4,530**	**5,171**
Net cash provided by (used in) investing activities	**(814)**	**(2,581)**
Net cash provided by (used in) financing activities	**(3,783)**	**(2,535)**
Change in cash and cash equivalents due to business activities	**(67)**	**55**
Cash and cash equivalents at beginning of period	**1,771**	**1,698**
Change due to exchange rate movements and to changes in scope of consolidation	(6)	(91)
Cash and cash equivalents at end of period	**1,698**	**1,662**

2012 figures restated

* Gross cash flow = income after income taxes, plus income taxes, plus financial result, minus income taxes paid or accrued, plus depreciation, amortization and impairment losses, minus impairment loss reversals, plus/minus changes in pension provisions, minus gains/plus losses on retirements of noncurrent assets, minus gains from the remeasurement of already held assets in step acquisitions. The change in pension provisions includes the elimination of non-cash components of EBIT. It also contains benefit payments during the year.

OPERATING CASH FLOW

Gross cash flow climbed by 28.0% year on year in 2013 to €5,832 million, mainly on account of the increase in EBIT. While HealthCare and CropScience recorded a business-related increase in cash tied up in working capital, MaterialScience was able to release cash thanks to successful working capital management. Cash flow was impacted by higher charges related to legal claims. Income tax payments were lower at €1,281 million (2012: €1,667 million). Net cash flow of the Group rose by 14.2% to €5,171 million.

INVESTING CASH FLOW

Net cash outflow for investing activities in 2013 amounted to €2,581 million. Cash outflows for property, plant and equipment and intangible assets were 11.8% higher at €2,157 million and included €809 million (2012: €720 million) at HealthCare, €538 million (2012: €376 million) at CropScience and €559 million (2012: €621 million) at MaterialScience. The €1,082 million (2012: €466 million) in outflows for acquisitions mainly related to the acquisition of Conceptus, Inc., United States, and Steigerwald Arzneimittelwerk GmbH, Germany. The cash inflows in 2013 comprised €79 million (2012: €178 million) pertaining to divestitures, mainly income from the sale of the global powder polyester resins business and revenue-based payments received in connection with the sale of the hematological oncology portfolio to Genzyme Corp., United States. Interest and dividends totaling €125 million (2012: €104 million) were also received along with income of €301 million (2012: €1,069 million) from noncurrent and current financial assets.

The principal strategically relevant capital expenditures for property, plant and equipment in the operating segments during the past two years are listed in the following table:

Capital Expenditures for Property, Plant and Equipment [Table 3.16.6]

Segment	Description
CAPITAL EXPENDITURES 2013	
Pharmaceuticals	Consolidation of a number of administrative and business operations in Whippany, New Jersey, U.S.A.
	Expansion of Xarelto™ production capacities in Wuppertal and Leverkusen, Germany
	Expansion of production capacities for biologics in Wuppertal, Germany
Consumer Health	–
CropScience	Capacity expansion and process modifications for the production of fungicides in Germany, Switzerland and the U.S.A. and for related formulation units in France
	Expansion of manufacturing capacities for herbicidal active ingredients in Germany and the U.S.A.
	Establishment of breeding stations for wheat in Europe, North America and Asia/Pacific, for soybeans in North America and Latin America, and for other crops and trait development
MaterialScience	Doubling of production capacities for polycarbonates in Shanghai, China
	Expansion of production capacities for MDI (diphenylmethane diisocyanate) in Shanghai, China
	Construction of a world-scale production complex for TDI (toluene diisocyanate) based on gas-phase phosgenation technology in Dormagen, Germany
	Completion of a multi-purpose facility for the aliphatic isocyanates HDI (hexamethylene diisocyanate) and IPDI (isophorone diisocyanate) in Leverkusen, Germany
CAPITAL EXPENDITURES 2012	
Pharmaceuticals	Consolidation of a number of administrative and business operations in Whippany, New Jersey, U.S.A.
	Establishment of a pilot facility for the production of biomolecules for clinical trials in Wuppertal, Germany
	Production facilities for the formulation and packaging of hormonal solids in Weimar, Germany
	Expansion of Xarelto™ production capacities in Wuppertal and Leverkusen, Germany
Consumer Health	Expansion of production and packaging capacities for effervescents in Cimanggis, Jakarta, Indonesia
CropScience	Capacity expansions and process modifications for the production of fungicides in Germany and Switzerland
	Establishment of wheat breeding stations in Europe, North America and Australia
	Construction of a greenhouse in Research Triangle Park, North Carolina, U.S.A.
MaterialScience	Construction of a world-scale production complex for TDI (toluene diisocyanate) based on gas-phase phosgenation technology in Dormagen, Germany
	Construction of a multi-purpose facility for the aliphatic isocyanates HDI (hexamethylene diisocyanate) and IPDI (isophorone diisocyanate) in Leverkusen, Germany
	Completion of a polyurethanes systems house in Qingdao, China

FINANCING CASH FLOW

Net cash outflow for financing activities in 2013 amounted to €2,535 million, including net loan repayments of €619 million (2012: €1,946 million). The increased use of current financial instruments led to a higher debt turnover ratio.

Net interest payments were 27.8% lower at €338 million (2012: €468 million). The cash outflow for "dividend payments and withholding tax on dividends" amounted to €1,574 million (2012: €1,366 million).

LIQUID ASSETS AND NET FINANCIAL DEBT

Net Financial Debt [Table 3.16.7]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Bonds and notes/promissory notes	5,528	4,520
of which hybrid bond	1,364	1,344
Liabilities to banks	2,841	2,302
Liabilities under finance leases	542	382
Liabilities from derivatives	304	310
Other financial liabilities	310	1,516
Positive fair values of hedges of recorded transactions	(456)	(504)
Financial liabilities	**9,069**	**8,526**
Cash and cash equivalents	(1,698)	(1,662)
Current financial assets	(349)	(133)
Net financial debt	**7,022**	**6,731**

2012 figures restated

Net financial debt of the Bayer Group as of December 31, 2013 was lower than on December 31, 2012, at €6.7 billion. Cash inflows from operating activities were partly offset by outflows for dividends and acquisitions. As of December 31, 2013, the Group had cash and cash equivalents of €1.7 billion (2012: €1.7 billion). Financial liabilities at the end of the reporting period amounted to €8.5 billion (2012: €9.1 billion), with the subordinated hybrid bond issued in July 2005 reflected at €1.3 billion. Net financial debt should be viewed against the fact that Moody's and Standard & Poor's treat 75% and 50%, respectively, of the hybrid bond as equity. Unlike conventional borrowings, the hybrid bond thus only has a limited effect on the Group's rating-specific debt indicators. Our noncurrent financial liabilities declined in 2013 from €7.0 billion to €5.6 billion, while current financial liabilities rose from €2.6 billion to €3.4 billion.

16.6 Asset and Capital Structure of the Bayer Group

Bayer Group Summary Statements of Financial Position [Table 3.16.8]

	Dec. 31, 2012	Dec. 31, 2013	Change
	€ million	€ million	%
Noncurrent assets	32,308	32,289	−0.1
Current assets	19,010	19,028	+0.1
Total assets	**51,318**	**51,317**	**–**
Equity	**18,551**	**20,804**	**+12.1**
Noncurrent liabilities	**19,663**	**16,490**	**−16.1**
Current liabilities	**13,104**	**14,023**	**+7.0**
Liabilities	**32,767**	**30,513**	**−6.9**
Total equity and liabilities	**51,318**	**51,317**	**–**

2012 figures restated

Total assets as of December 31, 2013, were unchanged from the previous year at €51.3 billion. Noncurrent assets were at the prior-year level of €32.3 billion and included goodwill of €9.9 billion (2012: €9.3 billion). The increase in goodwill was mainly the result of acquisitions made in 2013. The decline in other intangible assets and fluctuations in exchange rates had a negative effect. The carrying amount of current assets was also level with the previous year, at €19.0 billion.

Equity was higher by €2.2 billion at €20.8 billion. The factors in this increase included the net income of €3.2 billion and the decline of €1.3 billion – recognized outside profit or loss – in post-employment benefit obligations. The €1.6 billion (2012: €1.4 billion) dividend payment and €0.7 billion (2012: €0 billion) in negative exchange differences had an offsetting effect. Our equity ratio (equity coverage of total assets) as of December 31, 2013 was 40.5% (2012: 36.1%).

Liabilities receded by €2.3 billion compared with December 31, 2012, to €30.5 billion, mainly because of the decline in provisions for pensions and other post-employment benefits.

Net Defined Benefit Liability for Post-Employment Benefits [Table 3.16.9]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Provisions for pensions and other post-employment benefits	9,246	7,368
Benefit plan assets in excess of obligation	(27)	(117)
Net defined benefit liability for post-employment benefits	**9,219**	**7,251**

2012 figures restated

The net defined benefit liability for pensions and other post-employment benefits decreased from €9.2 billion to €7.3 billion in 2013, mainly in light of higher long-term capital market interest rates.

Ratios/Indicators [Table 3.16.10]

		2012	2013
Cost of sales ratio (%)	Cost of goods sold / Sales	48.0	48.2
R&D expense ratio (%)	Research and development expenses / Sales	7.6	7.9
Return on sales (%)	Income after income taxes / Sales	6.2	7.9
EBIT margin (%)	EBIT / Sales	9.9	12.3
EBITDA margin before special items (%)	EBITDA before special items / Sales	20.8	20.9
Asset intensity (%)	Property, plant and equipment + intangible assets / Total assets	55.8	56.1
Reinvestment ratio (%)	Capital expenditures* / Depreciation*	119.9	137.5
Liability structure (%)	Current liabilities / Liabilities	40.0	46.0
Gearing	Net debt + pension provisions / Equity	0.9	0.7
Free operating cash flow (€ million)	Net operating cash flow less cash outflows for property, plant and equipment and intangible assets	2,601	3,014
Inventory turnover	Cost of goods sold / Inventories	2.7	2.7
Receivables turnover	Sales / Trade accounts receivable	5.3	5.3
Payables turnover	Cost of goods sold / Trade accounts payable	4.4	4.3
Equity ratio (%)	Equity / Total assets	36.1	40.5
Return on equity (%)	Income after income taxes / Average equity	13.0	16.2
Return on assets (%)	Income before income taxes and interest expense / Average total assets for the year	7.5	9.5

2012 figures restated
* property, plant and equipment

16.7 Financial Management of the Group

The financial management of the Bayer Group is conducted by the strategic management holding company Bayer AG. Capital is a global resource, generally procured centrally and distributed within the 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, raw material price and default risks helps to reduce the volatility of our earnings.

The contracted rating agencies assess Bayer as follows:

Rating [Table 3.16.11]

	Long-term rating	Outlook	Short-term rating
Standard & Poor's	A–	positive	A–2
Moody's	A3	positive	P–2

These credit ratings reflect the company's high solvency and ensure access to a broad investor base for financing purposes. It remains our goal to achieve and maintain financial ratios that support an A rating in order to maintain our financial flexibility.

We pursue a prudent debt management strategy to ensure flexibility, drawing on a balanced financing portfolio. Chief among these resources are a multi-currency European Medium Term Notes program, 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 Group directives.

Further details of our risk management objectives and the ways in which we account for all the major types of hedged transactions – along with price, credit and liquidity risks as they relate to the use of financial instruments – are given in Chapter 20.3 "Opportunity and Risk Report."

17. Earnings; Asset and Financial Position of Bayer AG

Bayer AG is the parent corporation of the Bayer Group and functions as a management holding company. The principal management functions for the entire Group are performed by the Board of Management of Bayer AG. These include strategic planning, resource allocation, executive management and financial management. The performance of Bayer AG is largely determined by the business performance of the Bayer Group.

The financial statements of Bayer AG are prepared in accordance with the German Commercial Code (HGB) and Stock Corporation Act (AktG).

17.1. Earnings Performance of Bayer AG

Bayer AG Summary Income Statements according to the German Commercial Code [Table 3.17.1]

	2012	2013
	€ million	€ million
Income from investments in affiliated companies – net	1,719	3,542
Interest expense – net	(445)	(315)
Other financial income – net	89	110
Other operating income	87	118
General administration expenses	(228)	(266)
Other operating expenses	(106)	(148)
Income before income taxes	**1,116**	**3,041**
Income taxes	(227)	(543)
Net income	**889**	**2,498**
Withdrawal from/allocation to retained earnings	682	(761)
Distributable profit	**1,571**	**1,737**

In fiscal 2013 Bayer AG's net income increased by €1,609 million to €2,498 million, mainly because of significantly higher income from investments in affiliated companies and a decrease in net interest expense. The main negative effect came from higher income taxes.

Income from investments in affiliated companies posted a large increase of €1,823 million to €3,542 million. The previous year's income was impacted by a one-time charge of €256 million in connection with the extension of the period during which various subsidiaries are assuming the pension fund's long-term statutory obligation to raise pensions. Bayer Pharma AG again made the largest contribution to income from investments in affiliated companies with income of €1,934 million (2012: €1,397 million). This significant improvement was mainly attributable to the good business performance resulting from a higher proportion of high-margin, recently launched products, as well as the non-recurrence of the one-time pension charge. Bayer CropScience AG increased its contribution to earnings by €933 million to €1,379 million (2012: €446 million). This amount included €570 million from the intra-Group sale of seed tech-

nologies. Earnings of the CropScience subgroup were also driven by the positive business development, especially the substantial rise in volumes and an improved product mix. A loss of €20 million (2012: €179 million) was assumed for Bayer MaterialScience AG. However, this was considerably lower than in the previous year, principally because of the impact of extensive cost-cutting programs on operational earnings. Other significant earnings contributions comprised €213 million (2012: €291 million) from a subsidiary that receives foreign dividend income. Bayer Business Services GmbH posted a loss of €74 million (2012: €103 million), and Bayer Technology Services GmbH reported a loss of €30 million (2012: €59 million).

Net interest expense declined by €130 million compared with the previous year, to €315 million, thanks mainly to lower interest rates and also to the restructuring of some debt into lower-interest instruments. Of the net interest expense, €218 million was attributable to transactions with third parties and €97 million to intra-Group transactions.

Other financial income and expenses yielded a positive balance of €110 million (2012: €89 million). This mainly comprised income of €162 million (2012: €183 million) from the subgroups and service companies to cover pension expenses for retirees remaining with Bayer AG following the hive-down of the operating business. The non-interest portion of the corresponding expense, amounting to €26 million (2012: €56 million), is included in other financial expenses; the remainder is reflected in net interest expense. A further charge of €14 million (2012: €33 million) resulted from the translation of foreign currency receivables and payables and from currency derivatives.

General administration expenses relating to Bayer AG's performance of its functions as a holding company amounted to €266 million (2012: €228 million). Miscellaneous operating expenses relating to these functions, net of the respective miscellaneous operating income, came to €30 million (2012: €19 million). The increase in administration expenses was attributable to the higher number of employees and higher performance-related compensation. The other operating expenses include an amount of €14 million for the company's 150th anniversary celebrations.

Pre-tax income increased by €1,925 million to €3,041 million (2012: €1,116 million). Tax expense also increased, by €316 million to €543 million. After deduction of taxes, net income was €2,498 million (2012: €889 million). An allocation of €761 million was made to other retained earnings, leaving a distributable profit of €1,737 million.

The Board of Management and Supervisory Board will propose to the Annual Stockholders' Meeting on April 29, 2014 that the distributable profit be used to pay a dividend of €2.10 per share (826,947,808 shares) on the capital stock of €2,117 million entitled to the dividend for 2013.

17.2 Asset and Financial Position of Bayer AG

Bayer AG Summary Statements of Financial Position according to the German Commercial Code [Table 3.17.2]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
ASSETS		
Noncurrent assets		
Intangible assets, property, plant and equipment	22	21
Financial assets	34,310	35,300
	34,332	**35,321**
Current assets		
Receivables from subsidiaries	316	1,712
Remaining receivables, other assets	471	455
Cash and cash equivalents, marketable securities	903	972
	1,690	**3,139**
Total assets	**36,022**	**38,460**
EQUITY AND LIABILITIES		
Equity	**13,888**	**14,815**
Provisions	**2,719**	**2,976**
Other liabilities		
Bonds and notes, liabilities to banks	3,188	2,229
Payables to subsidiaries	15,874	16,983
Remaining liabilities	353	1,457
	19,415	**20,669**
Total equity and liabilities	**36,022**	**38,460**

The asset and liability structure of Bayer AG is dominated by its role as a holding company in managing the subsidiaries and financing corporate activities. This is primarily reflected in the high level of investments in affiliated companies and of receivables from, and payables to, Group companies.

Total assets of Bayer AG as of December 31, 2013 were €38.5 billion (2012: €36.0 billion), which was €2.5 billion more than at the start of the year. Non-current assets rose by €1.0 billion and current assets by €1.5 billion.

Property, plant and equipment and intangible assets totaled €21 million (2012: €22 million) and were therefore of secondary importance. Financial assets increased by €1 billion, from €34.3 billion in the previous year to €35.3 million at year end 2013, principally as a result of capital increases at subsidiaries. Investments in affiliated companies continued to account for by far the greater proportion of total assets (89.7%; 2012: 93.0%).

Receivables from subsidiaries amounted to €1.7 billion (2012: €0.3 billion) while payables to subsidiaries totaled €17.0 billion (2012: €15.9 billion). These amounts accounted for 4.5% of total assets and 44.2% of total equity and liabilities, respectively.

Including the deferred charges, the other receivables reflected in current assets declined by €16 million to €455 million (2012: €471 million) and were of only secondary importance in relation to total assets. Cash and cash equivalents were €69 million higher than in the previous year at €972 million (2012: €903 million) due to higher bank deposits.

Bayer AG had equity of €14.8 billion (2012: €13.9 billion), an increase of €0.9 billion. Equity included net income for 2013 of €2,498 million, but was diminished by the €1,571 million dividend payment for 2012. The equity ratio was virtually unchanged at 38.5% (2012: 38.6%) despite the considerable increase in equity, as total assets also increased.

Provisions rose by €0.3 billion to €3.0 billion (2012: €2.7 billion). The greater part of this increase was attributable to a rise of €304 million in tax provisions to €682 million (2012: €378 million). Provisions for other personnel-related obligations, especially performance-related compensation, were increased by €28 million. By contrast, pension provisions decreased by €55 million to €2,162 million (2012: 2,217 million).

Other liabilities rose by €1.3 billion, mainly due to an increase of €1.2 billion in financial debt, and amounted to €20.7 billion (net of deductible receivables; 2012: €19.4 billion). A bond with a nominal volume of €1 billion, issued in 2006, was redeemed at maturity in May 2013. However, a commercial paper program was increased by €795 million, intra-Group debt rose by €1,304 million and other loans were €51 million higher. Bayer AG had financial liabilities of €22.1 billion at year end 2013 (2012: €20.9 billion). After deduction of cash and cash equivalents of €1.0 billion, net debt was higher than in the previous year at €21.1 billion (2012: €20.0 billion).

Report on Corporate Governance

18. Corporate Governance Report

This Corporate Governance Report also constitutes the report pursuant to Section 3.10 of the German Corporate Governance Code.

18.1 Declaration Concerning the German Corporate Governance Code*

*not part of the audited management report

DECLARATION BY THE BOARD OF MANAGEMENT AND SUPERVISORY BOARD
concerning the German Corporate Governance Code (May 13, 2013 version) pursuant to Section 161 of the German Stock Corporation Act**

Under Section 161 of the German Stock Corporation Act, the Board of Management and the Supervisory Board of Bayer AG are required to issue an annual declaration that the company has been, and is, in compliance with the recommendations of the "Government Commission on the German Corporate Governance Code" as published by the Federal Ministry of Justice in the official section of the Federal Gazette (Bundesanzeiger), or to advise of any recommendations that have not been, or are not being, applied and the reasons for this. An annual declaration was last issued in December 2012.

With respect to the past, the following declaration refers to the May 15, 2012 version of the Code. With respect to present and future corporate governance practices at Bayer AG, the following declaration refers to the recommendations in the May 13, 2013 version of the Code.

Pursuant to Section 161 of the German Stock Corporation Act, the Board of Management and Supervisory Board of Bayer AG hereby declare as follows:

1. The company has been in compliance with the recommendations of the Code since issuance of the last annual compliance declaration in December 2012.

2. All the recommendations of the Code are now being complied with in full.

Leverkusen, December 2013

For the Board of Management:

DR. DEKKERS

BAUMANN

For the Supervisory Board:

WENNING

**This is an English translation of a German document. The German document is the official and controlling version, and this English translation in no event modifies, interprets or limits the official German version.

18.2 Governance *

* not part of the audited management report

BAYER IN COMPLIANCE WITH THE RECOMMENDATIONS OF THE GERMAN CORPORATE GOVERNANCE CODE

Bayer has always placed great importance on responsible corporate governance and will continue to do so. In 2013 the company was able to issue a declaration that it had fully complied with the recommendations of the German Corporate Governance Code in the past and continued to do so.

In 2013, the Board of Management and Supervisory Board again addressed the question of compliance with the Corporate Governance Code, particularly in light of the Code amendments of May 13, 2013. The resulting declaration, which is reproduced on the previous page, was issued in December 2013 and posted on Bayer's website along with previous declarations.

DUTIES AND ACTIVITIES OF THE BOARD OF MANAGEMENT

Bayer AG is a strategic management holding company, run by its Board of Management on the Board's own responsibility with the goal of sustainably increasing the company's enterprise value and achieving defined corporate objectives. The Board of Management performs its tasks according to the law, the Articles of Incorporation and the Board's rules of procedure, and works with the company's other governance bodies in a spirit of trust.

The Board of Management defines the long-term goals and the strategies for the Group, its subgroups and its service companies, and sets forth the principles and directives for the resulting corporate policies. It coordinates and monitors the most important activities, defines the portfolio, develops and deploys managerial staff, allocates resources and decides on the Group's financial steering and reporting.

The members of the Board of Management bear joint responsibility for running the business as a whole. However, the individual members manage the areas assigned to them on their own responsibility within the framework of the decisions made by the entire Board. The allocation of duties among the members of the Board of Management is defined in a written schedule.

The entire Board of Management makes decisions on all matters of fundamental importance and in cases where a decision of the entire Board is prescribed by law or otherwise mandatory. The rules of procedure of the Board of Management contain a list of topics that must be dealt with and resolved by the entire Board.

Meetings of the Board of Management are held regularly. They are convened by the Chairman of the Board of Management. Any member of the Board of Management may also demand that a meeting be held. The Board of Management makes decisions by a simple majority of the votes cast, except where unanimity is required by law. In the event of a tie, the Chairman has the casting vote.

According to the Board of Management's rules of procedure and schedule of duties, the Chairman bears particular responsibility for leading and coordinating the Board's work. He represents the company and the Group in dealings with third parties and the workforce on matters relating to more than one part of the company or the Group. He also bears special responsibility for certain departments of the Corporate Center and their fields of activity.

The schedule of duties also assigns particular areas of specialist responsibility to the other members who served on the Board of Management in 2013 with respective responsibility for Finance; Innovation, Technology and Sustainability; and Human Resources. Each of these members also represents certain geographical regions. The responsibilities for specialist areas and regions were redistributed in 2013 upon the change of the member responsible for Human Resources.

No committees of the Board of Management have been set up in view of the small number of members and the role of Bayer AG as a strategic management holding company.

SUPERVISORY BOARD: OVERSIGHT AND CONTROL FUNCTIONS

The role of the 20-member Supervisory Board is to oversee and advise the Board of Management. Under the German Codetermination Act, half the members of the Supervisory Board are elected by the stockholders, and half by the company's employees. 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 Chairman of the Supervisory Board coordinates its work and presides over the meetings. Through regular discussions with the Board of Management, the Supervisory Board is kept constantly informed of business policy, corporate planning and strategy. The Supervisory Board approves the annual budget and financial framework. It also approves the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group, along with the combined management report, taking into account the reports by the auditor.

COMMITTEES OF THE SUPERVISORY BOARD

The Supervisory Board currently has the following committees:

Presidial Committee: This comprises the Chairman and Vice Chairman 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 plenary meeting. Certain decision-making powers in connection with capital measures, including the power to amend the Articles of Incorporation accordingly, have also been delegated to this committee.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of the Audit Committee in 2013, Dr. Klaus Sturany, satisfies the statutory requirements concerning the independence and the expertise in the field of accounting or auditing that a member of the Supervisory Board and the Audit Committee is required to possess. The Audit Committee meets regularly four times a year. Its tasks include examining the company's financial reporting along with the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group, the combined management report, the proposal for the use of the distributable profit of Bayer AG, and the interim financial statements and management reports of the Bayer Group, all of which are prepared by the Board of Management. On the basis of the auditor's report on the audit of the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report, the Audit Committee develops proposals concerning the approval of the statements by the full Supervisory Board. The Audit Committee is also responsible for the company's relationship with the external auditor. The Audit Committee submits a proposal to the full Supervisory Board concerning the auditor's appointment, prepares the awarding of the audit contract to the audit firm appointed by the Annual Stockholders' Meeting, suggests areas of focus for the audit and determines the auditor's remuneration. It also monitors the independence, qualifications, rotation and efficiency of the auditor.

In addition, the Audit Committee oversees the company's internal control system – along with the procedures used to identify, track and manage risk – and the internal audit system. It also deals with corporate compliance issues and discusses developments in this area at each of its meetings.

Human Resources Committee: On this committee, too, there is parity of representation between stockholders and employees. It consists of the Chairman of the Supervisory Board and three other members. The Human Resources Committee prepares the personnel decisions of the full Supervisory Board, which resolves on appointments or dismissals of members of the Board of Management. The Human Resources 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 and the respective compensation components, as well as to regularly review the compensation system on the basis of recommendations submitted by the Human Resources Committee. The Human Resources Committee also discusses the long-term succession planning for the Board of Management.

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 Nominations Committee comprises the Chairman of the Supervisory Board and the other stockholder representative on the Presidial Committee.

Detailed information on the work of the Supervisory Board and its committees is provided in the Report of the Supervisory Board on page 32ff. of this Annual Report.

OBJECTIVES FOR THE COMPOSITION OF THE SUPERVISORY BOARD

The Supervisory Board should be composed in such a way that its members together possess the necessary expertise, skills and professional experience to properly perform their duties. In view of Bayer AG's global operations, the Supervisory Board has set itself the goal of always having several members with international business experience or an international background. A further objective concerning the composition of the Supervisory Board is that, absent special circumstances, its members 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, the Supervisory Board has set itself the goal that more than half of the stockholder representatives be independent and also that at least three quarters of the total Supervisory Board membership (stockholder and employee representatives) be independent. The Supervisory Board assesses the independence of its members according to the recommendation contained in Section 5.4.2 of the the German Corporate Governance Code. In assessing independence, the Supervisory Board also considers the criteria given in the recommendation of the European Commission of February 15, 2005.[1]

Another goal for the composition of the Supervisory Board is to increase the proportion of women on the Supervisory Board to at least 20% in the medium term and for the female membership to be distributed as evenly as possible between the stockholder and employee groups. It is intended to achieve this goal when the entire Supervisory Board is elected in 2017.

The goals described refer to the Supervisory Board as a whole unless resolved otherwise. However, since the Supervisory Board can only nominate candidates for election as stockholder representatives, it can only take the targets into account in these nominations.

Implementation status of the objectives

The Supervisory Board has several members with international business experience and other international connections. The objective that members should step down from the Supervisory Board at the Annual Stockholders' Meeting following their 72nd birthday is fully met. One member of the Supervisory Board, Werner Wenning, was the Chairman of the company's Board of Management until 2010. One member, Ernst-Ludwig Winnacker, has been a member of the Supervisory Board since 1997, and thus has served more than three terms of office. However, neither Mr. Wenning nor Mr. Winnacker has any personal or business relationship with the company or a governance body of the company that in the opinion of the Supervisory Board gives rise to a material conflict of interest of a more than temporary nature. The proportion of women on the Supervisory Board is currently 15%. A female candidate has been nominated for election to the Supervisory Board at the 2014 Annual Stockholders' Meeting. If she is elected, this will bring the proportion of women on the Supervisory Board to 20%.

DISCLOSURE OF SECURITIES TRANSACTIONS BY MEMBERS OF THE BOARD OF MANAGEMENT OR SUPERVISORY BOARD

Members of the Board of Management and Supervisory Board and their close relatives are legally required to disclose all transactions involving the purchase or sale of Bayer stock where such transactions total €5,000 or more in a calendar year. Bayer publishes details of such transactions immediately on its website and also notifies the German Financial Supervisory Authority accordingly. This information is provided to the company register for archiving. The following transactions in 2013 were reported to Bayer AG:

[1] Annex 2 to the recommendation of the European Commission of February 15, 2005, on the role of non-executive or supervisory directors of listed companies and on the committees of the (supervisory) board (2005/162/EC)

Securities Transactions by Members of the Board of Management or Supervisory Board [Table 3.18.1]

Date/Place	Security/Right	Financial instrument	ISIN	Transaction	Price/ Currency	Quantity	Total transaction volume
Dec. 27, 2013/ Xetra	Werner Baumann, Board of Management	Shares	DE000BAY0017	Sale	EUR 102.87	4,600	EUR 473,211.20
Nov. 11, 2013/ Xetra	Oliver Zühlke, Supervisory Board	Shares	DE000BAY0017	Sale	EUR 93.88	9	EUR 844.92
Nov. 4, 2013/ Düsseldorf	Michael Schmidt-Kiessling, Supervisory Board	Shares	DE000BAY0017	Sale	EUR 92.40	90	EUR 8,316.00
Aug. 15, 2013/ Xetra	Dr. Marijn Dekkers, Board of Management	Shares	DE000BAY0017	Purchase	EUR 85.96	6,000	EUR 515,760.00
April 23, 2013/ Düsseldorf	Oliver Zühlke, Supervisory Board	Shares	DE000BAY0017	Sale	EUR 79.46	50	EUR 3,973.00
March 6, 2013/ Frankfurt	Oliver Zühlke, Supervisory Board	Shares	DE000BAY0017	Sale	EUR 77.86	20	EUR 1,557.20
March 5, 2013/ Xetra	Werner Wenning, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	297	EUR 22,607.79
March 5, 2013/ Xetra	Dr. Paul Achleitner, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	400	EUR 30,448.20
March 5, 2013/ Xetra	Dr. Clemens Börsig, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17
March 5, 2013/ Xetra	Thomas Ebeling, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17
March 5, 2013/ Xetra	Dr. Thomas Fischer, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	400	EUR 30,448.20
March 5, 2013/ Xetra	Dr. Klaus Kleinfeld, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17
March 5, 2013/ NYSE	Sue H. Rataj, Supervisory Board	Bayer AG American Depositary Receipts (ADR)	US0727303028	Purchase	US$ 101.75	273	US$ 27,777.75
March 5, 2013/ Xetra	Michael Schmidt-Kiessling, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17
March 5, 2013/ Xetra	Prof. Dr.-Ing. Ekkehard D. Schulz, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 75.70	500	EUR 37,850.00
March 5, 2013/ Xetra	Dr. Klaus Sturany, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	534	EUR 40,648.35
March 5, 2013/ Xetra	Dr. Helmut Panke, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17
March 5, 2013/ Xetra	Prof. Dr. Ernst-Ludwig Winnacker, Supervisory Board	Shares	DE000BAY0017	Purchase	EUR 76.12	267	EUR 20,324.17

Information filed with the company by members of the Board of Management and Supervisory Board shows that, on the closing date for the financial statements, their total holdings of Bayer AG stock or related financial instruments were equivalent to less than 1% of the issued stock.

COMMON VALUES AND LEADERSHIP PRINCIPLES

Bayer has committed itself to the values of Leadership, Integrity, Flexibility and Efficiency, or "LIFE" for short. These values provide guidance to all Bayer employees, both in business dealings and in working together within the company. All employees are obligated to align their work to the LIFE values. This is taken into account in human resources development and the regular performance evaluations.

SYSTEMATIC RISK MANAGEMENT

The established internal control system enables the company to identify any business or financial risks at an early stage and take appropriate action to manage them. This control system is designed to ensure that risks are monitored in a timely manner, all business transactions are properly accounted for, and reliable data on the company's financial position is always available.

When acquisitions are made, we aim to bring the acquired units' internal control systems into line with those of the Bayer Group as quickly as possible.

However, the control and risk management system cannot provide absolute protection against losses arising from business risks or fraudulent actions.

DETAILED REPORTING

To maximize transparency, we provide regular and timely information on the Group's position and significant changes in business activities to stockholders, financial analysts, stockholders' associations, the media and the general public. Bayer complies with the recommendations of the Corporate Governance Code by publishing reports on business trends, financial position, results of operations and related risks four times a year.

In line with statutory requirements, the members of the Group Management Board provide an assurance that, to the best of their knowledge, the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report provide a true and fair view.

The financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report are published within 90 days following the end of each fiscal year. During the fiscal year, stockholders and other interested parties are kept informed of developments by means of the half-year financial report and additional interim reports for the first and third quarters. The half-year financial report is voluntarily subjected to an audit review by the auditor, whose appointment by the Annual Stockholders' Meeting also relates specifically to this audit review.

Bayer also provides information at news conferences and analysts' meetings. In addition, the company uses the internet as a platform for timely disclosure of information, including details of the dates of major publications and events, such as the annual report, quarterly financial reports (Stockholders' Newsletters) or the Annual Stockholders' Meeting.

In line with the principle of fair disclosure, all stockholders and other principal target groups are treated equally as regards the communication of valuation-relevant information. All significant new facts are disclosed immediately to the general public. Stockholders also have immediate access to the information that Bayer publishes locally in compliance with the stock market regulations of various countries.

In addition to our regular reporting, we issue ad-hoc statements on developments that otherwise might not become publicly known but have the potential to materially affect the price of Bayer stock.

18.3 Compliance

Bayer manages its business responsibly and in compliance with the statutory and regulatory requirements of the countries in which it operates.

We define compliance as legally and ethically impeccable conduct by all employees in their daily work – because the way they carry out their duties affects the company's reputation. Bayer does not tolerate any violation of applicable laws, relevant codes of conduct or internal regulations.

The Board of Management is unreservedly committed to corporate compliance and Bayer will forgo any business transaction that would violate our compliance principles. These principles are enshrined in our Corporate Compliance Policy, which is available in 42 languages. This document details our commitment to fair competition, integrity in business dealings including zero tolerance of corruption, the principles of sustainability and product stewardship, the upholding of foreign trade laws and insider trading laws, the separation of business and private interests, proper record-keeping and transparent financial reporting, fair and respectful working conditions, and avoidance of all forms of discrimination. Every employee is required to immediately report any infringement of this policy (except in France where this requirement does not apply due to national law).

Managerial employees have a vital part to play in implementing the Corporate Compliance Policy. As role models, they must help to ensure that this important code of conduct is adhered to in practice. Managers may lose their entitlement to variable compensation components and be subject to disciplinary measures if systematic violations of applicable law entailing loss or damage to Bayer have occurred in their sphere of responsibility and could have been prevented if they had taken appropriate action. Compliant and lawful conduct forms part of the performance evaluations of all managerial employees.

Bayer's Corporate Auditing department regularly verifies adherence to the Corporate Compliance Policy. In 2013, 205 audits, including 52 compliance audits, were performed on the basis of a risk-oriented audit plan that takes potential corruption and other risks into account. Such audits were either preventive or incident-related. Observance of the Corporate Compliance Policy is also a focus of all regular audits. The head of Corporate Auditing regularly attends the meetings of the Audit Committee of the Supervisory Board and provides it with a list of conducted audits and their outcomes at least once a year.

The head of the Bayer Group's compliance organization is the Group Compliance Officer, who reports directly to the Chairman of the Board of Management. The Group Compliance Officer reports regularly to the Audit Committee of the Supervisory Board on any confirmed compliance violations. The subgroups and service companies each have their own compliance officer, who is responsible for ensuring that the respective subgroup or company adheres to Group-wide standards and any further subgroup- or industry-specific standards that may apply. Operational coordination of Group-wide compliance activities is the task of the central Compliance Department, which was expanded in 2013. There are central Compliance Officers in 35 countries and country groups, supported where necessary by further compliance functions. Their role is to advise employees on lawful and ethically correct behavior in business-related situations.

The compliance organization operates in accordance with international standards such as the OECD Recommendations of the Council for Further Combating Bribery of Foreign Public Officials in International Business Transactions.

Compliance is crucial to the success of our business. In 2013 Bayer adopted a Group-wide Compliance Charter to integrate compliance even more closely into all operating units and their work processes with the aim of making the compliance organization an even stronger partner for our operational business. The priority is to prevent compliance violations from occurring. Extensive communication and training activities are designed to help employees develop a permanent awareness of compliance issues and the associated risks.

ONLINE ANNEX: 3-18.3-1

Through our extensive training activities on specific aspects of compliance, we aim to ensure employees are permanently aware of the meaning of compliance, its importance for Bayer, and how they can avoid inadvertently violating compliance principles.

The web-based training program on the Corporate Compliance Policy is an integral part of the official onboarding process for new managers. They are requested to take this training within three months of becoming a manager or joining Bayer. In 2013 it was taken by 2,800 managers, which was about 50% of the managers newly hired or appointed during the year.

The web-based training program entitled "Anti-Corruption" has been translated into 10 languages and adapted for different media formats. It is already available in 78 countries and has been completed by some 55,000 employees, or about 48% of the total workforce.

At the same time, the HealthCare subgroup has developed a separate online training program relating to the compliance manuals for pharmaceutical products and medical devices to provide preventive training about specific compliance risks. These training modules outline the basic rules for responsible and ethically correct dealings with members of the medical professions, the promotion of HealthCare products, non-reciprocal benefits, and the exchange of services with people working in the health care sector and at medical facilities.

In 2013 we again ran an extensive communication campaign about compliance aimed at providing all employees with further information, explaining who is now available to advise them under the new business partnering concept, and raising awareness for compliance-critical situations. A quarterly newsletter for employees is published on the compliance intranet site.

Bayer's intranet site and internal print media reported widely on the new mandatory web-based anti-corruption training program, the setting-up of a new email address for employees' questions relating to compliance, the Compliance Charter, the tasks and structure of the new central global compliance organization, and the new ICM@BAYER project. ICM stands for Integrated Compliance Management, a new Group-wide system through which the systematic, risk-based approach to the identification of compliance risks is to be developed further and mapped in a closed management system. The goal is to move away from an event-driven approach to a preventive one.

Since 2012 Bayer has used short videos depicting typical compliance-critical situations as an additional communication tool. Employees can view these on the compliance website. The films currently available focus on anti-corruption, conflicts of interest and equal opportunities for everyone and show typical key compliance scenarios.

Compliance was also a focus of communication and training activities at the subgroups and service companies in 2013.

We have established hotlines worldwide through which compliance violations can be reported. This can also be done anonymously. In 2013 the compliance organization registered 72 reports via the central compliance hotline and email address. Of these, 20 were from Germany and 52 from other countries; 58 reports were received by email (24 of them anonymously), 12 by telephone (10 anonymously) and 2 anonymously by regular mail. Suspected compliance violations may also be reported to the Compliance Officers, to Bayer's Corporate Auditing Department or via local hotlines set up by the country organizations. All suspected compliance violations in the Group are recorded according to uniform criteria and processed according to the rules set forth in the Directive on the Management of Compliance Incidents.

18.4 Compensation Report

The Compensation Report describes the essential features of the compensation system for the members of the Board of Management and the Supervisory Board and explains the compensation of the individual members. The report conforms to the requirements of the German Commercial Code including the principles of German Accounting Standard No. 17 (DRS 17). It also complies with the recommendations of the German Corporate Governance Code and the International Financial Reporting Standards (IFRS).

18.4.1 Compensation of the Board of Management

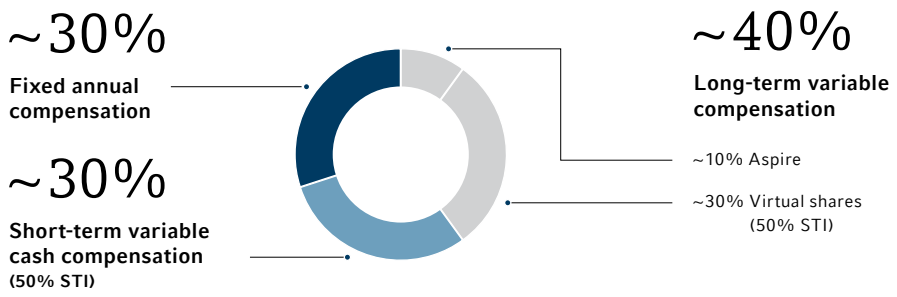
OBJECTIVES

The structure of the compensation system for the Board of Management of Bayer AG is aimed at ensuring performance-oriented corporate governance and a long-term increase in the company's value. The core elements of the system include fixed compensation, which takes into account the tasks and duties of the Board of Management members, and an incentivized component – the short-term incentive (STI) –, which depends on the attainment of the annual corporate performance targets. In addition to the compensation directly related to each year of service, there are two long-term stock-based components that are directly related to the development of Bayer's share price over time and thus are intended to create an incentive for a sustained commitment to the company. The system is also designed to enable the company to successfully compete for highly qualified executives and to ensure statutory and regulatory compliance. Board of Management compensation is in line with the basic principles of the compensation structure for managerial employees in the Bayer Group. The appropriateness of the system and the compensation level are regularly reviewed by the Supervisory Board, which then makes any necessary adjustments.

COMPENSATION STRUCTURE

The compensation paid to the members of the Board of Management includes both non-performance-related and performance-related components. The compensation structure, based on average total annual compensation and 100% target attainment, is as follows:

Board of Management Compensation Structure (German Commercial Code)* [Graphic 3.18.1]



* excluding fringe benefits and pension entitlements

The non-performance-related compensation comprises the fixed annual compensation along with fringe benefits. The performance-related compensation partly comprises a variable component (STI), of which 50% takes the form of short-term variable cash compensation and 50% consists of long-term cash compensation involving a grant of virtual Bayer shares that are retained for three years. The other performance-related compensation component serving as a long-term incentive is the stock-based cash compensation program Aspire. Here, a four-year retention period applies.

The individual performance-related components are capped at the grant date. To comply with the recommendation newly included in the 2013 version of the German Corporate Governance Code, caps have also been agreed for the disbursement of the performance-related components and for the compensation as a whole (total of the annual fixed compensation and the variable components) with effect from the fiscal year 2014. The cap on the total compensation is 1.8 times the respective target compensation and is determined annually when the fixed compensation is set.

The members of the Board of Management also receive pension entitlements for themselves and their surviving dependents.

Non-performance-related components

Fixed annual compensation

The level of the non-performance-related, fixed annual compensation takes into account the functions and responsibilities assigned to the members of the Board of Management as well as market conditions. The fixed compensation is regularly reviewed by the Supervisory Board in light of the consumer price indexes and adjusted if necessary. It is paid out in twelve monthly installments.

Fringe benefits

This component mainly includes perquisites such as a company car with driver or the use of the company carpool, payments toward the cost of security equipment, and the reimbursement of the cost of annual health screening examinations. Fringe benefits are reported at the value assigned to them for tax purposes.

Performance-related components

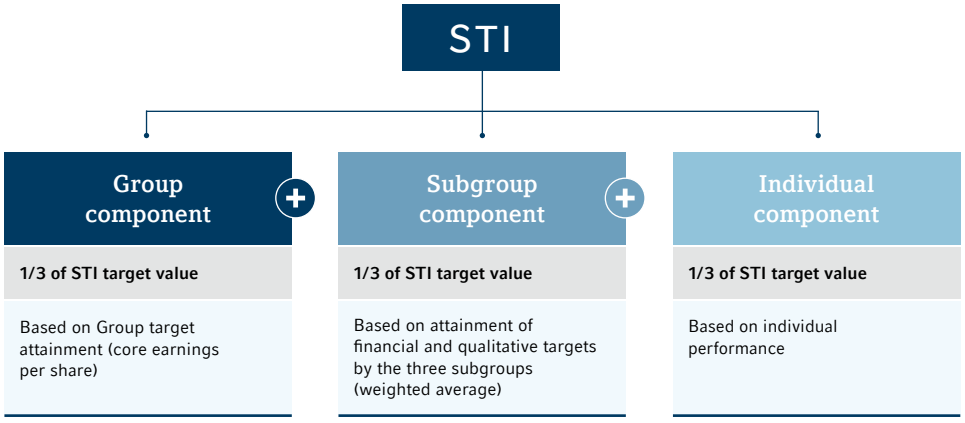
Short-term variable cash compensation

The short-term variable compensation (short-term incentive, or STI) is based on a set percentage of the fixed annual compensation (target value). This amount is adjusted according to the target attainments of the Bayer Group, the subgroups and the individual Board of Management member.

The Group component is determined in relation to core earnings per share of the Group, while the subgroup components are governed by the weighted average target attainments of the HealthCare, CropScience and MaterialScience subgroups. The annual subgroup targets are derived from the respective business strategies and operational priorities. The target attainment for HealthCare and CropScience is mainly based on the comparison of target and actual values for the EBITDA margin before special items and sales growth. At MaterialScience it is measured in terms of the cash flow return on investment (CFROI). Target attainment also takes into account qualitative objectives including safety, compliance and sustainability aspects.

The target attainment for the individual component of the variable compensation is determined by the Supervisory Board. One half of the STI for each year is paid out in the second quarter of the following year, while the other half is granted in the form of virtual Bayer shares.

Short-Term Variable Compensation (STI) Components [Graphic 3.18.2]



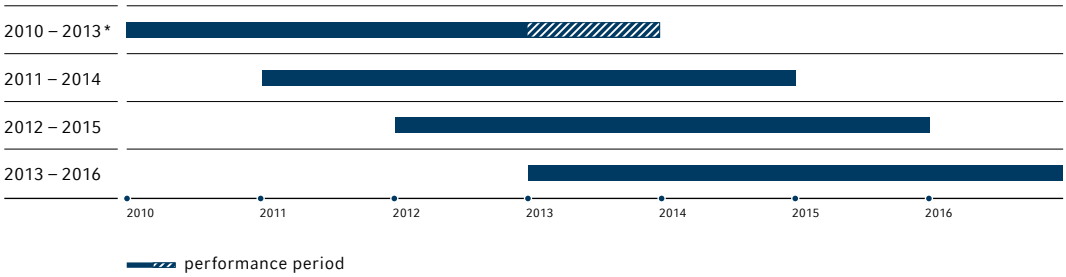
Long-term variable cash compensation based on virtual Bayer shares

Both the number of virtual shares granted and the amount of the payment at the end of a three-year retention period are based on the average official closing price of Bayer shares over the last 30 trading days of the respective year in the Xetra system of the Frankfurt Stock Exchange. A cash payment with respect to the number of virtual shares held is made at the end of the three-year period according to the market price of Bayer shares at that time. In addition, the members of the Board of Management receive an amount equal to the total dividends paid on the equivalent number of real shares during the period. Payment is made in January of the year following the end of the three-year period. This payment is capped at 200% of the amount converted into virtual shares at the beginning of the three-year period. No option exists for the Board of Management members to extend the retention period or defer the payout. When a member leaves the Board of Management, the retention period for two-thirds of each tranche is shortened to two years. If the member leaves during a fiscal year, payment is made immediately with respect to two-thirds of any tranche that has already been retained for more than two years. The remaining one-third of each tranche continues to be subject to the three-year retention period.

Long-term stock-based cash compensation (Aspire I)

Members of the Board of Management are eligible to participate in the annual tranches of the long-term stock-based compensation program Aspire I ("Aspire") on condition that they purchase a certain number of Bayer shares – determined for each individual according to specific guidelines – as a personal investment and for as long as they continue in the service of the Bayer Group. The payments made under this program are based on the Aspire Target Opportunity, which is a contractually agreed percentage of fixed annual compensation. Depending on the performance of Bayer stock, both in absolute terms and relative to the EURO STOXX 50 benchmark index, participants are granted an award of between 0% and 300% of their individual Aspire Target Opportunity for four-year tranches, or between 0% and 200% for three-year tranches, at the end of the respective performance period. The Aspire program was switched from three- to four-year tranches starting in 2010 to increase its long-term incentive effect. For the transition year 2010, a three-year half-tranche was issued in addition to the four-year tranche. Starting in 2011, only tranches with a four-year performance period have been issued. The performance matrix and the respective amounts of the awards depending on the absolute and relative performances of Bayer stock are explained at HTTP://WWW.INVESTOR.BAYER.COM/EN/STOCK/STOCK-PROGRAMS/ASPIRE.

Tranches of the Aspire Program [Graphic 3.18.3]



* three- and four-year tranches of the Aspire program were issued in 2010

When a member of the Board of Management retires, current tranches may be shortened. In this case, tranches up to the one issued in 2011 are shortened on a pro-rated basis according to the duration of the member's active service on the Board of Management during the period of the tranche; tranches issued in 2012 or later are shortened according to the duration of the member's active service on the Board of Management during the first year of the tranche.

Expanded Share Ownership Guidelines

On top of the requirement for participants in the Aspire program to make a personal investment in Bayer shares, the members of the Board of Management have undertaken to comply with expanded Share Ownership Guidelines. These require the Chairman of the Board of Management to build a position in Bayer shares to the value of 150% of his fixed annual compensation, and the other members to the value of 100% of their fixed annual salaries, within four years and to continue to hold them for as long as they remain Board of Management members. Half the number of virtual shares granted to them through conversion of 50% of the STI into virtual shares counts toward this position. The Board of Management members must provide documentary evidence of their compliance with this obligation for the first time at the end of the four-year position-building period and again yearly thereafter. In the event of significant changes in fixed annual compensation, the value to which shares are held must be adjusted accordingly.

Pension entitlements (retirement and surviving dependents' pensions)

The members of the Board of Management appointed prior to 2013 are generally entitled to receive a lifelong company pension after leaving the Bayer Group, though not before the age of 60. This pension is normally paid out in the form of a monthly life annuity. Dr. Dekkers has the option to receive a capital sum in place of an annuity.

The annual pension granted equals at least 15% of final fixed annual compensation. This percentage can increase with continuing service on the Board of Management up to a maximum of 60%, except in the case of a member appointed prior to 2006, who is entitled to a pension of up to 80% of his final fixed annual compensation. The arrangements for surviving dependents basically provide for a widow's pension amounting to 60% of the member's pension entitlement and an orphan's pension amounting to 15% of the member's pension entitlement for each child.

Future pension payments are annually reviewed and adjusted based on the development of consumer prices. Pension rights are suspended if a Management Board member works for a competitor of Bayer AG or of another Group company before the age of 65 without the prior written consent of the Supervisory Board.

The annual pension entitlement for members of the Board of Management appointed in 2013 or thereafter is based on contributions. Bayer provides a hypothetical contribution amounting to 33% of the respective fixed compensation each year. This percentage is comprised of a 6% basic contribution and a 27% matching contribution – three times the member's personal contribution of 9%. The total annual contribution is converted into a pension module according to the annuity table for the applicable tariff of the Rheinische Pensionskasse VVaG pension fund. The annual pension entitlement upon retirement (at 62 years of age at the earliest) is the total amount of the accumulated pension modules including an investment bonus. The investment bonus 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.

The ultimate pension entitlement cannot be precisely determined in advance. It depends on the development of the member's compensation, the number of years of service on the Board of Management and the return on the assets of the Rheinische Pensionskasse VVaG. We currently estimate the achievable total pension entitlement at approximately 45% of a member's annual fixed compensation immediately prior to retirement, with roughly 38% financed by the company and 7% by the member of the Board of Management.

Benefits upon termination of service on the Board of Management

Post-contractual non-compete agreements

Post-contractual non-compete agreements exist with the members of the Board of Management, providing for compensatory payments to be made by the company for the two-year duration of these agreements. For the members newly appointed to the Board of Management on or after January 1, 2010, the compensatory payment is 100% of the average fixed compensation for the twelve months preceding their departure.

Change of control

Agreements exist with the members of the Board of Management providing for severance payments to be made in certain circumstances in the event of a change in control. The amount of any possible severance payments in the case of early termination of service on the Board of Management as a result of a change in control is limited to the value of three years' compensation in line with the recommendation in Section 4.2.3 of the German Corporate Governance Code. Such payments do not exceed the compensation payable for the remaining term of the service contract.

Unfitness for work

In the event of temporary unfitness for work, members of the Board of Management continue to receive the contractually agreed compensation. Bayer AG may early terminate the service contract if the member has been continuously unfit for work for at least 18 months and is likely to be permanently incapable of fully performing his duties (permanent incapacity to work). A disability pension is paid in the event of contract termination before the age of 60 due to permanent incapacity to work. For the members appointed to the Board of Management prior to 2013, the disability pension, like the retirement pension, amounts to at least 15% of the final fixed compensation and can increase with continuing service on the Board of Management up to a maximum of 60%. For members of the Board of Management appointed in 2013 or thereafter, the amount of the disability pension under the service contract corresponds to the entitlement accrued on the date of contract termination, taking into account a fictitious period of service between that date and the member's 55th birthday where applicable.

COMPENSATION OF THE BOARD OF MANAGEMENT IN 2013

The aggregate compensation of the members of the Board of Management in 2013 totaled €13,563 thousand (2012: €12,997 thousand), comprising €3,956 thousand (2012: €3,541 thousand) in non-performance-related components and €9,607 thousand (2012: €9,456 thousand) in performance-related components. The pension service cost amounted to €1,271 thousand (2012: €1,861 thousand). The performance-related components in 2013 included an additional one-time variable component for Prof. Plischke with a target value of €500 thousand, the exact amount of this payment depending on the target attainment of the HealthCare subgroup (in terms of the EBITDA margin before special items and sales growth). It relates to the additional function as head of the HealthCare subgroup that was temporarily assigned to him and to a subsequent period covering the necessary handover to his successor in this function. This one-time payment, amounting to €771 thousand, does not form part of his pensionable income.

The following changes in the membership of the Board of Management took place in 2013: effective April 1, 2013, Mr. König was appointed to the Board of Management of Bayer AG. Effective June 1, 2013, he succeeded Dr. Pott, who retired as of that date.

The following table shows the compensation components of the individual members of the Board of Management in 2013:

Board of Management Compensation (German Commercial Code) [Table 3.18.2]

	Fixed Annual Compensation		Fringe Benefits		Short-term Variable Cash Compensation		Long-term Variable Cash Compensation Based on Virtual Bayer Shares[1]				Long-term Stock-based Cash Compensation (Aspire)[2]		Aggregate Compensation		Pension Service Cost[3]	
	2012	2013	2012	2013	2012	2013	2012	2012	2013	2013	2012	2013	2012	2013	2012	2013
	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	No. of shares[4]	€ thousand	No. of shares[4]	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Dr. Marijn Dekkers (Chairman)	1,271	1,347	35	39	1,702	1,532	24,228	1,702	15,802	1,532	352	382	**5,062**	**4,832**	561	677
Werner Baumann	783	888	44	43	979	881	13,928	979	9,085	881	186	252	**2,971**	**2,945**	1,056	189
Prof. Dr. Wolfgang Plischke[5]	670	710	34	35	783	1,476	11,701	822	7,631	740	186	201	**2,495**	**3,162**	5	6
Michael König	–	533	–	51	0	529	–	–	5,451	529	–	–	–	**1,642**	–	120
Dr. Richard Pott	670	296	34	14	783	294	11,329	796	3,028	294	186	84	**2,469**	**982**	239	279
Total	**3,394**	**3,774**	**147**	**182**	**4,247**	**4,712**	**61,186**	**4,299**	**40,997**	**3,976**	**910**	**919**	12,997	13,563	**1,861**	**1,271**

[1] fair value at conversion date
[2] fair value at grant date
[3] including company contribution to Bayer-Pensionskasse VVaG
[4] In return for their acceptance of the early change made to the system of variable cash compensation in 2010, Prof. Plischke and Dr. Pott since 2010 have received one additional virtual Bayer share for every 20 virtual Bayer shares resulting from the conversion of 50% of the STI into virtual Bayer shares. This arrangement no longer applies to Dr. Pott under his new service contract effective May 1, 2012.
[5] The short-term variable cash compensation total for Prof. Plischke includes the additional one-time variable payment made to him of €771 thousand.

Fixed annual compensation

The fixed compensation of the members of the Board of Management was adjusted in 2013. The total fixed compensation of all the members was €3,774 thousand (2012: €3,394 thousand).

Short-term variable cash compensation

The total short-term variable cash compensation (short-term portion of the STI) for all the members of the Board of Management in 2013 totaled €4,712 thousand (2012: €4,247 thousand) after deduction of the solidarity contribution and including the additional variable one-time payment for Prof. Plischke. The solidarity contribution is paid by all employees of the companies covered by the respective agreements with the employee representatives to help safeguard jobs at the German sites. For 2013 this contribution amounted to 0.47% (2012: 0.67%) of each member's total STI award.

Long-term variable cash compensation based on virtual Bayer shares

The conversion of 50% of the STI into virtual Bayer shares was based on an average price of €96.96 (2012: €70.26). Prof. Plischke and Dr. Pott each received one additional virtual Bayer share for every 20 virtual Bayer shares resulting from the conversion in return for their acceptance of the early change made to the system of variable cash compensation in 2010. This applies for the duration of the service contract in effect at that time. The additional virtual shares are subject to the same retention period and therefore to the same change in value. This arrangement no longer applied to Dr. Pott under his new service contract that became effective May 1, 2012. The retention period for some of Dr. Pott's virtual shares was shortened pursuant to his service contract upon his retirement. He therefore received a first payment in June 2013.

The long-term variable cash compensation based on virtual Bayer shares that is included in the aggregate compensation according to the German Commercial Code was valued at €3,976 thousand (2012: €4,299 thousand). The aggregate compensation according to the IFRS also includes a change of €5,030 thousand (2012: €3,136 thousand) in the value of existing entitlements.

Provisions of €18,310 thousand (2012: €13,222 thousand) existed as of December 31, 2013, for the future cash disbursements to currently serving members of the Board of Management based on the virtual Bayer shares granted in the respective year. This amount also contains the dividend attributable to the respective prior year.

Long-term stock-based cash compensation (Aspire)

The long-term stock-based cash compensation under the Aspire program is included in the aggregate compensation according to the German Commercial Code at its fair value of €919 thousand (2012: €910 thousand) at the grant date.

According to the IFRS, the aggregate compensation includes the fair value of the partial entitlement earned in the respective year. Grants of stock-based compensation with a four-year performance period are therefore expensed at their respective fair values over four years starting with the grant year. The aggregate compensation according to the IFRS also includes the change in the value of existing entitlements under ongoing Aspire tranches granted in prior years.

Board of Management Compensation – Aspire Program (IFRS) [Table 3.18.3]

		Dr. Marijn Dekkers (Chairman)	Werner Baumann	Prof. Dr. Wolfgang Plischke	Michael König	Dr. Richard Pott	Total
		€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Stock-based compensation entitlements earned in the respective year [1]	**2013**	**1,115**	**679**	**651**	**141**	**339**	**2,925**
	2012	535	322	406	–	744	2,007
Change in value of existing entitlements [2]	**2013**	**703**	**444**	**444**	**87**	**634**	**2,312**
	2012	306	214	338	–	338	1,196
Total	**2013**	**1,818**	**1,123**	**1,095**	**228**	**973**	**5,237**
	2012	841	536	744	–	1,082	3,203

[1] The newly earned entitlements are derived from the 2010, 2011, 2012 and 2013 tranches of the Aspire program because this compensation was or is being earned over three- or four-year periods. They are stated at their pro-rated fair values in 2012 and 2013, respectively.
[2] This line shows the change in the value of the entitlements already earned in 2010, 2011 and 2012 (2012: 2010 and 2011).

Provisions of €6,813 thousand (2012: €3,793 thousand) existed as of December 31, 2013, for the entitlements of the currently serving members of the Board of Management under the Aspire program.

Pension entitlements

The pension service cost recognized for the members of the Board of Management in 2013 according to the German Commercial Code was €1,271 thousand (2012: €1,861 thousand), while the current service cost for pension entitlements recognized according to the IFRS was €1,805 thousand (2012: €2,501 thousand).

The service costs and the settlement or present value of the pension obligations attributable to the individual members of the Board of Management are shown in the following table.

Pension Entitlements (German Commercial Code and IFRS) [Table 3.18.4]

	German Commercial Code				IFRS			
	Pension service cost[1]		Settlement value of pension obligation as of December 31		Service cost for pension entitlements		Present value of defined benefit pension obligation as of December 31	
	2012	2013	2012	2013	2012	2013	2012	2013
	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Dr. Marijn Dekkers	561	677	4,354	5,451	637	960	6,282	6,684
Werner Baumann	1,056	189	4,379	4,936	1,600	291	6,888	6,354
Prof. Dr. Wolfgang Plischke	5	6	7,512	7,621	0	0	9,556	8,716
Michael König	–	120	–	1,327	–	185	–	1,719
Dr. Richard Pott	239	279	8,074	0	264	369	10,722	0
Total	**1,861**	**1,271**	**24,319**	**19,335**	**2,501**	**1,805**	**33,448**	**23,473**

[1] including company contribution to Bayer-Pensionskasse VVaG

The difference between the pension service cost according to the German Commercial Code and the service cost for pension entitlements according to the IFRS arises from the difference in the valuation principles used in calculating the settlement value according to the German Commercial Code and the present value of the defined pension benefit obligation according to the IFRS.

In 2012 a contribution was made to Bayer Pension Trust e.V. under a contractual trust arrangement (CTA) to cover direct pension commitments, resulting in a substantial additional security for all direct pension commitments in Germany. In particular, this means that pension commitments not covered by the German Corporate Pension Assurance Association (PSV) are fully and permanently secured. This includes pension commitments toward members of the Board of Management.

The aggregate compensation according to the IFRS is shown in the following table:

Board of Management Compensation according to IFRS [Table 3.18.5]

	2012	2013
	€ thousand	€ thousand
Fixed annual compensation	3,394	3,774
Fringe benefits	147	182
Total short-term non-performance-related compensation	**3,541**	**3,956**
Short-term performance-related cash compensation	4,247	4,712
Total short-term compensation	**7,788**	**8,668**
Stock-based compensation (virtual Bayer shares) earned in the respective year	4,299	3,976
Change in value of existing entitlements to stock-based compensation (virtual Bayer shares)	3,136	5,030
Stock-based compensation (Aspire) earned in the respective year	2,007	2,925
Change in value of existing entitlements to stock-based compensation (Aspire)	1,196	2,312
Total stock-based compensation (long-term incentive)	**10,638**	**14,243**
Service cost for pension entitlements earned in the respective year	2,501	1,805
Total long-term compensation	**13,139**	**16,048**
Aggregate compensation (IFRS)	**20,927**	**24,716**

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18.4.2 Disclosures Pursuant to the Recommendations of the German Corporate Governance Code

The following table lists the compensation and fringe benefits paid for 2013, including the maximum and minimum achievable variable compensation, in line with the recommendations in the May 2013 version of the German Corporate Governance Code.

Compensation and Benefits Granted for 2013 [Table 3.18.6]

	Dr. Marijn Dekkers (Chairman)				Werner Baumann (Finance)					Prof. Dr. Wolfgang Plischke[1] (Technology, Innovation, Sustainability)				Michael König[2] (Human Resources)				Dr. Richard Pott[1] (Strategy, Human Resources)			
	Joined Jan. 1, 2010				Joined Jan. 1, 2010					Joined March 1, 2006				Joined April 1, 2013				Stepped down June 1, 2013			
	Target value 2012	Target value 2013	Min. 2013	Max.[3] 2013	Target value 2012	Target value 2013	Min. 2013	Max.[3] 2013		Target value 2012	Target value 2013	Min. 2013	Max.[3] 2013	Target value 2012	Target value 2013	Min. 2013	Max.[3] 2013	Target value 2012	Target value 2013	Min. 2013	Max.[3] 2013
	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand		€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Fixed annual compensation	1,271	1,347	1,347	1,347	783	888	888	888		670	710	710	710	–	533	533	533	670	296	296	296
Fringe benefits	35	39	39	39	44	43	43	43		34	35	35	35	–	51	51	51	34	14	14	14
Total annual fixed compensation	**1,306**	**1,386**	**1,386**	**1,386**	**827**	**931**	**931**	**931**		**704**	**745**	**745**	**745**	**–**	**584**	**584**	**584**	**704**	**310**	**310**	**310**
Short-term variable cash compensation (50% of STI)	1,420	1,448	0	2,896	816	833	0	1,665		653	666	0	1,332	–	500	–	999	653	278	0	555
Long-term stock-based compensation (Aspire) 2012 (Jan. 1, 2012 – Dec. 31, 2015)[4]	498	–	–	–	263	–	–	–		263	–	–	–	–	–	–	–	263	–	–	–
Long-term stock-based compensation (Aspire) 2013 (Jan. 1, 2013 – Dec. 31, 2016)[4]	–	539	0	1,617	–	355	0	1,066		–	284	0	853	–	93	–	278	–	118	0	355
Long-term variable cash compensation (virtual Bayer shares) in 2012 (Jan. 1, 2013 – Dec. 31, 2015)[5]	1,420	–	–	–	816	–	–	–		686	–	–	–	–	–	–	–	664	–	–	–
Long-term variable cash compensation (virtual Bayer shares) in 2013 (Jan. 1, 2014 – Dec. 31, 2016)[5]	–	1,448	0	5,793	–	833	0	3,330		–	699	0	2,797	–	500	0	1,998	–	278	0	–
HealthCare special bonus	–	–	–	–	–	–	–	–		–	500	–	1,500	–	–	–	–	–	–	–	–
Total compensation	**4,644**	**4,821**	**1,386**	**11,692**	**2,722**	**2,952**	**931**	**6,992**		**2,306**	**2,894**	**745**	**7,227**	**–**	**1,677**	**584**	**3,859**	**2,284**	**984**	**310**	**1,220**
Service cost	561	677	677	677	1,056	189	189	189		5	6	6	6	–	120	120	120	239	279	279	279
Total	**5,205**	**5,498**	**2,063**	**12,369**	**3,778**	**3,141**	**1,120**	**7,181**		**2,311**	**2,900**	**751**	**7,233**	**–**	**1,797**	**704**	**3,979**	**2,523**	**1,263**	**589**	**1,499**

[1] including any contractually agreed free shares in connection with the grant of virtual shares
[2] Benefits granted to Mr. König refer solely to compensation for his duties as a member of the Board of Management. The 2013 Aspire tranche was granted to him prior to his appointment to the Board of Management. Its vesting period extends past the date on which he joined the Board of Management.
[3] The caps applicable with effect from 2014 are not yet accounted for in the total of maximum achievable compensation.
[4] capped at 300%
[5] capped at 200%

Allocation of Compensation in/for 2012 and 2013

[Table 3.18.7]

	Dr. Marijn Dekkers (Chairman)		Werner Baumann (Finance)		Prof. Dr. Wolfgang Plischke (Technology, Innovation, Sustainability)		Michael König (Human Resources)		Dr. Richard Pott (Strategy, Human Resources)	
	Joined Jan. 1, 2010		Joined Jan. 1, 2010		Joined March 1, 2006		Joined April 1, 2013		Stepped down June 1, 2013	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Fixed annual compensation	1,271	1,347	783	888	670	710	–	533	670	296
Fringe benefits	35	39	44	43	34	35	–	51	34	14
Total	**1,306**	**1,386**	**827**	**931**	**704**	**745**	**–**	**584**	**704**	**310**
Short-term variable cash compensation for the period Jan. 1. – Dec. 31, 2011	1,420	–	653	–	653	–	–	–	653	–
Short-term variable cash compensation for the period Jan. 1 – Dec. 31, 2012	–	1,702	–	979	–	783	–	–	–	783
Long-term stock-based cash compensation (Aspire) 2009 (Jan. 1, 2009 – Dec. 31, 2011)[1]	–	–	202	–	430	–	–	–	430	–
Long-term stock-based cash compensation (Aspire) 2010 (Jan. 1, 2010 – Dec. 31, 2012)	–	–	–	–	–	253	–	–	–	253
Advance payment of 2/3 of long-term cash compensation (virtual Bayer shares) 2010 (Jan. 1, 2011 – Dec. 31, 2013)	–	–	–	–	–	–	–	–	–	587
Total	**2,726**	**3,088**	**1,682**	**1,910**	**1,787**	**1,781**	**–**	**584**	**1,787**	**1,933**
Service cost/benefit expense	561	677	1,056	189	5	6	–	120	239	279
Total compensation	**3,287**	**3,765**	**2,738**	**2,099**	**1,792**	**1,787**	**–**	**704**	**2,026**	**2,212**

[1] The payment to Mr. Baumann from the 2009 Aspire tranche applied to a vesting period that began before he joined the Board of Management. The tranche was not yet fully vested at the date on which he joined the Board of Management.

18.4.3 Compensation of the Supervisory Board

The Supervisory Board is compensated according to the relevant provisions of the Articles of Incorporation, which were amended effective April 28, 2012 by resolution of the Annual Stockholders' Meeting held on April 27, 2012.

SUPERVISORY BOARD COMPENSATION SYSTEM EFFECTIVE APRIL 28, 2012

The members of the Supervisory Board receive fixed annual compensation of €120,000 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. The Chairman of the Supervisory Board receives fixed annual compensation of €360,000, the Vice Chairman €240,000. These amounts also cover membership and chairmanship of committees. The other members receive additional compensation for committee membership. The chairman of the Audit Committee receives an additional €120,000, the other members of the Audit Committee €60,000 each. The chairmen of the remaining committees receive €60,000 each, the other members of those committees €30,000 each. No additional compensation is paid for membership of the Nominations Committee. A Supervisory Board member who is a member of more than two committees receives compensation only for the two committees with the highest compensation. If changes are made to the Supervisory Board and/or its committees during the year, members receive compensation on a pro-rated basis. The members of the Supervisory Board also receive an attendance fee of €1,000 each time they personally attend a meeting of the Supervisory Board or a committee. The attendance fee is limited to €1,000 per day.

The members of the Supervisory Board have given a voluntary pledge that they will each purchase Bayer shares for 25% of their fixed compensation, including any compensation for committee membership (before taxes), and hold these shares for as long as they remain members of the Supervisory Board. This does not apply to members who transfer at least 85% of their fixed compensation to the Hans Böckler Foundation in accordance with the rules of the German Trade Union Confederation or whose service or employment contract with a company requires them to transfer such compensation to that company. If less than 85% of the fixed compensation is transferred, the voluntary pledge applies to the portion not transferred. By voluntarily pledging to invest in and hold Bayer shares, the Supervisory Board members reinforce their interest in the long-term, sustainable success of the company. With respect to the fiscal year 2012, the voluntary pledge applies to the fixed compensation paid for the period from April 28, 2012.

SUPERVISORY BOARD COMPENSATION SYSTEM UNTIL APRIL 27, 2012

Until April 27, 2012, the compensation of the Supervisory Board was based on the relevant provisions of the Articles of Incorporation decided by the Annual Stockholders' Meeting on April 29, 2005. Each member of the Supervisory Board received fixed annual compensation of €60,000 plus reimbursement of their expenses and a variable annual compensation component. The variable component was based on corporate performance in terms of the gross cash flow reported in the consolidated financial statements of the Bayer Group for the respective fiscal year. The members of the Supervisory Board received €2,000 for every €50 million or part thereof by which the gross cash flow exceeded €3.1 billion, but the variable component for each member could not exceed €30,000.

In accordance with the recommendations of the German Corporate Governance Code, additional compensation was paid to the Chairman and Vice Chairman of the Supervisory Board and for chairing and membership of committees. The Chairman of the Supervisory Board received three times the basic compensation, while the Vice Chairman received one-and-a-half times the basic compensation. Members of the Supervisory Board who were also members of a committee received an additional one quarter of the amount, with those chairing a committee receiving a further quarter. However, no member of the Supervisory Board received total compensation exceeding three times the basic compensation. It was agreed that no additional compensation should be paid for membership of the Nominations Committee. If changes were made to the Supervisory Board or its committees during the fiscal year, members received compensation on a pro-rated basis.

COMPENSATION OF THE SUPERVISORY BOARD IN 2013

The following table shows the components of each Supervisory Board member's compensation for 2013.

Compensation of the Members of the Supervisory Board of Bayer AG in 2013 [Table 3.18.8]

	Fixed Compensation		Attendance Fee		Variable Compensation		Compensation for Committee Membership		Total	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand	€ thousand
Members of the Supervisory Board as of December 31, 2013										
Dr. Paul Achleitner	100	180	2	4	10	–	48	–	160	184
Dr. Clemens Börsig	100	120	3	4	10	–	–	–	113	124
André van Broich	81	120	3	4	–	–	–	–	84	124
Thomas Ebeling	81	120	2	4	–	–	–	–	83	124
Dr. Thomas Fischer	100	180	4	8	10	–	48	–	162	188
Peter Hausmann	100	150	3	4	10	–	28	–	141	154
Reiner Hoffmann	100	180	3	8	10	–	41	–	154	188
Yüksel Karaaslan	81	120	2	4	–	–	–	–	83	124
Dr. Klaus Kleinfeld	100	120	1	4	10	–	–	–	111	124
Petra Kronen	100	150	4	3	10	–	28	–	142	153
Dr. Helmut Panke	100	120	2	3	10	–	–	–	112	123
Sue H. Rataj	81	120	2	3	–	–	–	–	83	123
Petra Reinbold-Knape	81	120	3	3	–	–	–	–	84	123
Michael Schmidt-Kiessling	81	120	2	4	–	–	–	–	83	124
Prof. Dr. Ekkehard D. Schulz	100	180	4	8	10	–	41	–	155	188
Dr. Klaus Sturany	100	240	4	8	10	–	96	–	210	248
Werner Wenning (Chairman effective October 1, 2012)	90	360	2	8	–	–	–	–	92	368
Thomas de Win (Vice Chairman)	192	240	4	7	15	–	14	–	225	247
Prof. Dr. Dr. Ernst-Ludwig Winnacker	100	120	2	4	10	–	–	–	112	124
Oliver Zühlke	100	150	4	4	10	–	20	–	135	154
Members who left the Supervisory Board during 2012										
André Aich	19	–	–	–	10	–	–	–	29	–
Willy Beumann	19	–	–	–	10	–	7	–	36	–
Prof. Dr. Hans-Olaf Henkel	19	–	–	–	10	–	7	–	36	–
Hubertus Schmoldt	19	–	–	–	10	–	7	–	36	–
Dr. Manfred Schneider (Chairman until September 30, 2012)	211	–	3	–	29	–	–	–	243	–
Roswitha Süsselbeck	19	–	–	–	10	–	–	–	29	–
Dr. Jürgen Weber	19	–	–	–	10	–	7	–	36	–

* Further details on the membership of the committees of the Supervisory Board are given under "Further Information," page 337ff.

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2013 was €727 thousand (2012: €670 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.

18.4.4 Further Information

ADVANCES OR LOANS TO MEMBERS OF THE BOARD OF MANAGEMENT OR SUPERVISORY BOARD

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2013, nor at any time during 2013 or 2012.

PENSION PAYMENTS TO FORMER MEMBERS OF THE BOARD OF MANAGEMENT OR THEIR SURVIVING DEPENDENTS

We currently pay retired members of the Board of Management a monthly pension equal to a maximum of 80% of the fixed compensation received immediately prior to retirement. The pensions of former members of the Board of Management or their surviving dependents have been reassessed annually since January 1, 2009 and adjusted taking into account the development of consumer prices. The pensions paid to former members of the Board of Management or their surviving dependents in 2013 totaled €12,871 thousand (2012: €12,673 thousand). These benefits are in addition to any amounts they receive under previous employee pension arrangements. The present value of the pension obligation for former members of the Board of Management and their surviving dependents at the closing date amounted to €150,148 thousand (2012: €149,746 thousand) according to IFRS and €136,307 thousand (2012: €126,424 thousand) according to the German Commercial Code.

Events After the End of the Reporting Period

19. Events After the End of the Reporting Period

On January 21, 2014, Bayer AG issued three tranches of bonds with a combined nominal volume of €2 billion under the multi-currency European Medium Term Notes program.

HEALTHCARE

On December 19, 2013, Bayer announced its intention to acquire the pharmaceutical company Algeta ASA, Norway. The formal takeover offer at a price of NOK 362 per share in cash was made to Algeta ASA shareholders on January 20, 2014. The offer, which implies an equity value of NOK 17.6 billion (€2.1 billion), is subject to a minimum acceptance level of 90% of the outstanding shares of Algeta ASA by the end of the offer period. The offer period expires at 9:00 a.m. Central European Time on February 24, 2014. If the offer is successful, payment to Algeta shareholders is to be made at the beginning of March 2014.

Report on Future Perspectives and on Opportunities and Risks

20. Future Perspectives

20.1 Economic Outlook

GLOBAL ECONOMY

Economic Outlook [Table 3.20.1]

	Growth* 2013	Growth forecast* 2014
World	+2.5%	+3.3%
European Union	+0.1%	+1.3%
of which Germany	+0.4%	+1.8%
United States	+1.9%	+2.7%
Emerging markets**	+4.7%	+5.3%

* real growth of gross domestic product, source: Global Insight; source for Germany: Federal Statistical Office (2013) / Federal Ministry of Economics and Technology (2014)
** including about 50 countries defined by Global Insight as emerging markets in line with the World Bank as of February 2014

The global economy will probably grow more quickly in 2014 than in the previous year, with positive impetus coming mainly from the industrialized countries, especially the United States. At the same time, the European economy appears to have overcome the recession. The major central banks will likely continue to support global growth overall, although a cautious normalization of monetary policy is expected in the United States.

We anticipate moderate growth in the European Union as a whole, supported in particular by the relatively favorable economic situation in Germany and the United Kingdom. Some southern European countries, however, are likely to see only slight or even negative GDP growth. The economy will continue to be hampered by high unemployment and a lack of international competitiveness in some countries.

The economic recovery in the United States is predicted to continue, buoyed by low energy prices, the recovery in the property market and other factors.

We also expect the emerging countries to grow faster than in the previous year, mainly because their exports are likely to benefit from higher demand from the industrialized countries. China will probably remain among the principal drivers of global economic expansion in 2014, with growth matching the previous year.

Economic Outlook for the Subgroups [Table 3.20.2]

	Growth* 2013	Growth forecast* 2014
HealthCare		
Pharmaceuticals market	+3%	+4%
Consumer Care market	+5%	+4%
Medical Care market	−2%	−2%
Animal Health market	+3%	+4%
CropScience		
Seed and crop protection market	≥5%	≥5%
MaterialScience (main customer industries)		
Automotive industry	+3%	+5%
Construction industry	+3%	+4%
Electrical/electronics industry	+4%	+6%
Furniture market	+3%	+4%

* Bayer's estimate; excluding pharmaceuticals market, source: IMS Health. IMS Market Prognosis. Copyright 2014. All rights reserved; currency-adjusted; 2013 data provisional
as of February 2014

HEALTHCARE

The **pharmaceuticals market** is predicted to grow somewhat faster in 2014 than in the prior year. We expect a further increase in the demand for medicines in the emerging economies. Pharmaceutical sales will probably increase in the United States and a number of European countries, mainly due to the launch of new products – despite a persistently restrictive health policy environment.

Following the strong cold season in the previous year, the **consumer care market** will likely normalize and expand at a somewhat slower pace in 2014. We expect to see further slight shrinkage in the **medical care market** in 2014, with the diabetes care market weakening and the market for contrast agents and medical equipment (Radiology & Interventional business unit) almost reaching the previous year's level. Growth in the **animal health market** in 2014 is forecasted to exceed the previous year in view of favorable economic prospects in important markets.

CROPSCIENCE

Following the dynamic growth in the global **seed and crop protection market** last year, we expect the market environment to remain favorable in 2014 but weaken over the course of the year. Price levels are expected to stay relatively high from a historical perspective, mainly in light of the steady rise in demand for food and feed products. However, prices for agricultural commodities are likely to be lower than in the previous year. As a result, the economic prospects for farmers will likely remain positive, encouraging investment in high-value seed and crop protection products. However, it is also predicted that global inventories for most agricultural commodities will increase. We thus anticipate an overall growth rate in the mid-single digits in 2014, which would be lower than in the preceding year.

We expect Latin America to continue experiencing the strongest growth. This region's seed and crop protection market is mainly characterized by the steady expansion of soybean farming, which accounts for nearly 40% of the cultivated land area. In Asia/Pacific, too, we expect agricultural production to continue expanding, though with markedly lower growth rates than in Latin America. The trend in this region will mainly depend on cereals and rice along with specialty crops such as fruit and vegetables. We see Eastern Europe and parts of Africa as further regions with above-average growth potential, albeit from relatively low levels. In the industrialized regions of the northern hemisphere, however, we expect markets to expand much more slowly than in 2013.

MATERIALSCIENCE

We expect the business climate for our **principal customer industries** to improve during 2014. In North America there are clear stimuli to growth, raising hopes that the economy will continue to stabilize. Distinct recovery trends are also apparent in the emerging economies of Asia. On the other hand, the economic recovery in Western Europe will likely progress at a slower pace, while the development in Latin America involves certain risks.

We expect the **automotive industry** to develop positively in 2014, with the principal growth stimuli coming from Asia and North America because of rising demand. The sector will post a slight expansion in Europe.

The global **construction industry** will probably continue to recover in 2014, mainly as a result of robust investment activity in North America and Asia. Continuing positive development in private housing construction in the United States and stable investment in China and India are likely to contribute to this.

Robust growth is predicted for the global **electrical/electronics industry** in 2014. Demand is forecasted to grow briskly in nearly all market segments, mainly in Asia and especially in China. In Western Europe, however, we expect to see persistently weak growth due to the ongoing debt crisis.

We expect the development of the global **furniture industry** to show regional variations in 2014. The demand for furniture in Europe as a whole will probably show only a slight increase, while there are signs that the market in North America will continue to recover. In Asia we expect to see stable growth.

20.2 Forecast for Key Data

The following forecast is based on the business development described in this report, taking into account the potential risks and opportunities.

BAYER GROUP

Our forecast for fiscal 2014 is based on average exchange rates for the fourth quarter of 2013, including a rate of US$1.36 to the euro. A 1% appreciation (depreciation) of the euro against all other currencies would decrease (increase) sales on an annual basis by some €260 million and EBITDA before special items by about €70 million.

In 2014 we plan to grow sales by about 5% on a currency- and portfolio-adjusted basis. Allowing for expected negative currency effects of about 2% compared to the previous year, Group sales would be approximately €41 billion to €42 billion. We plan to raise EBITDA before special items by a low- to mid-single-digit percentage, allowing for expected negative currency effects of about €450 million or roughly 5%. We aim to increase core earnings per share (calculated as explained in Chapter 16.3 "Core Earnings Per Share") by a mid-single-digit percentage, allowing for expected negative currency effects of around 6%.

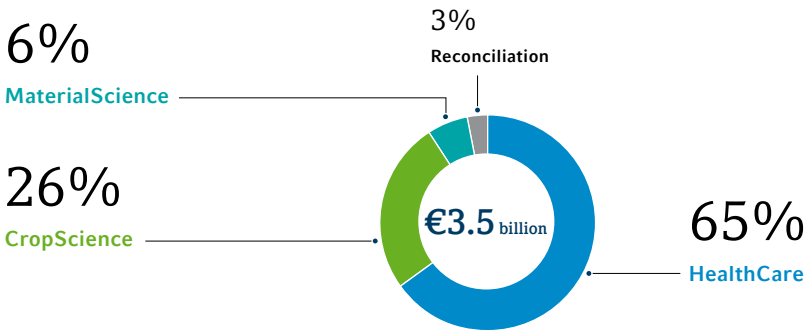
See Chapter 16.3

	Forecast 2014	Currency effects allowed for in the forecast **
Group sales	Approx. 5% increase*	
	Approx. €41 billion to €42 billion	Minus approx. 2%
EBITDA before special items	Low- to mid-single-digit percentage increase	Minus approx. 5% Minus approx. €450 million
Core earnings per share	Mid-single-digit percentage increase	Minus approx. 6%

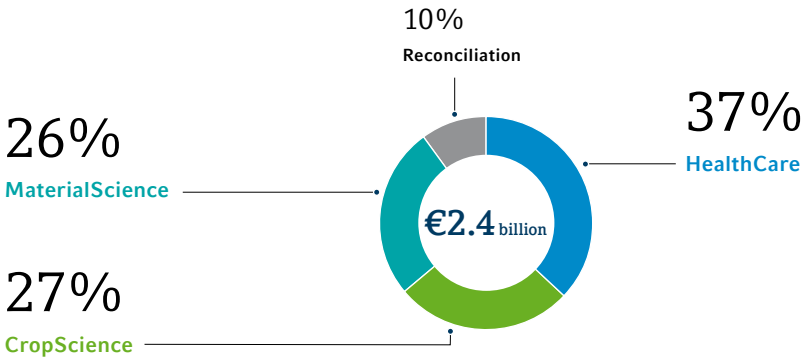
* currency- and portfolio-adjusted
** 2014 calculated at Q4 2013 exchange rates compared to full year 2013 rates

We expect to take special charges of approximately €200 million for restructuring in 2014.

Research and Development Budget 2014 by Subgroup [Graphic 3.20.1]



Capital Expenditure Budget 2014 by Subgroup [Graphic 3.20.2]



We intend to increase our research and development expenses to €3.5 billion in 2014. We have planned capital expenditures of about €2.1 billion for property, plant and equipment and €0.3 billion for intangible assets. Depreciation and amortization are estimated at about €2.6 billion, including €1.3 billion in amortization of intangible assets.

We predict the financial result to come in at around minus €0.8 billion. The effective tax rate is likely to be around 25%. Taking into account the planned acquisition of Algeta ASA, Norway, we expect net financial debt to be below €9 billion at the end of 2014.

HEALTHCARE

The main priority for HealthCare in 2014 continues to be the successful commercialization of the recently launched pharmaceutical products. We expect sales to advance by a mid-single-digit percentage on a currency- and portfolio-adjusted basis. Allowing for expected negative currency effects of about 2%, sales would be approximately €19.5 billion to €20 billion. We predict EBITDA before special items to slightly exceed the prior-year level, allowing for negative currency effects of roughly €250 million.

In the Pharmaceuticals segment, we expect sales to move ahead by a high-single-digit percentage on a currency- and portfolio-adjusted basis. We predict negative currency effects of around 2% compared to 2013. We intend to raise sales of our recently launched products to about €2.8 billion and are planning significantly higher investment in order to continue marketing them successfully. We will also intensify the activities aimed at exploiting the potential of our development pipeline. Additional marketing and R&D expenditures totaling €0.5 billion are planned for 2014. Against this background we expect a low-to mid-single-digit percentage increase in EBITDA before special items, allowing for negative currency effects of about €150 million. The EBITDA margin before special items is expected to be level with the previous year.

In 2016 we plan to achieve an EBITDA margin before special items of at least 33%. We have increased our estimate for the peak sales potential of our recently launched products to at least €7.5 billion.

In the Consumer Health segment, we predict sales to rise by a low- to mid-single-digit percentage on a currency- and portfolio-adjusted basis. We anticipate negative currency effects of around 3% compared to 2013. We expect EBITDA before special items to come in slightly below the level of the prior year, allowing for negative currency effects of about €100 million.

CROPSCIENCE

For 2014 we continue to predict favorable market conditions for our CropScience business, although we will not see quite such a positive environment as in 2013.

We expect to grow faster than the market and raise sales by a mid- to high-single-digit percentage on a currency- and portfolio-adjusted basis. We anticipate negative currency effects of about 3% compared to 2013. We plan to increase EBITDA before special items by a low-single-digit percentage, allowing for negative currency effects of approximately €150 million.

MATERIALSCIENCE

We plan to raise sales in 2014 by a mid-single-digit percentage on a currency- and portfolio-adjusted basis. We predict negative currency effects of about 2% compared to 2013. We anticipate an increase in EBITDA before special items, allowing for negative currency effects of roughly €50 million.

For the first quarter of 2014, we expect sales to increase on a currency- and portfolio-adjusted basis against the prior-year period and EBITDA before special items to gain significantly.

RECONCILIATION

For 2014 we expect sales on a currency- and portfolio-adjusted basis to be level with the previous year. We are planning EBITDA before special items of roughly minus €0.2 billion.

Bayer AG

As the holding company for the Bayer Group, Bayer AG derives most of its income from its subsidiaries. The earnings of the major subsidiaries in Germany are transferred directly to Bayer AG under profit and loss transfer agreements. The earnings of Bayer AG are therefore expected to reflect the positive business development anticipated in the Bayer Group. A concerted dividend policy within the Group ensures the availability of sufficient distributable income. We anticipate that the net interest position will remain steady in light of the continuing low level of interest rates. Based on these factors, we expect Bayer AG to report a distributable profit that will again enable our stockholders to adequately participate in the Bayer Group's earnings.

20.3 Opportunity and Risk Report

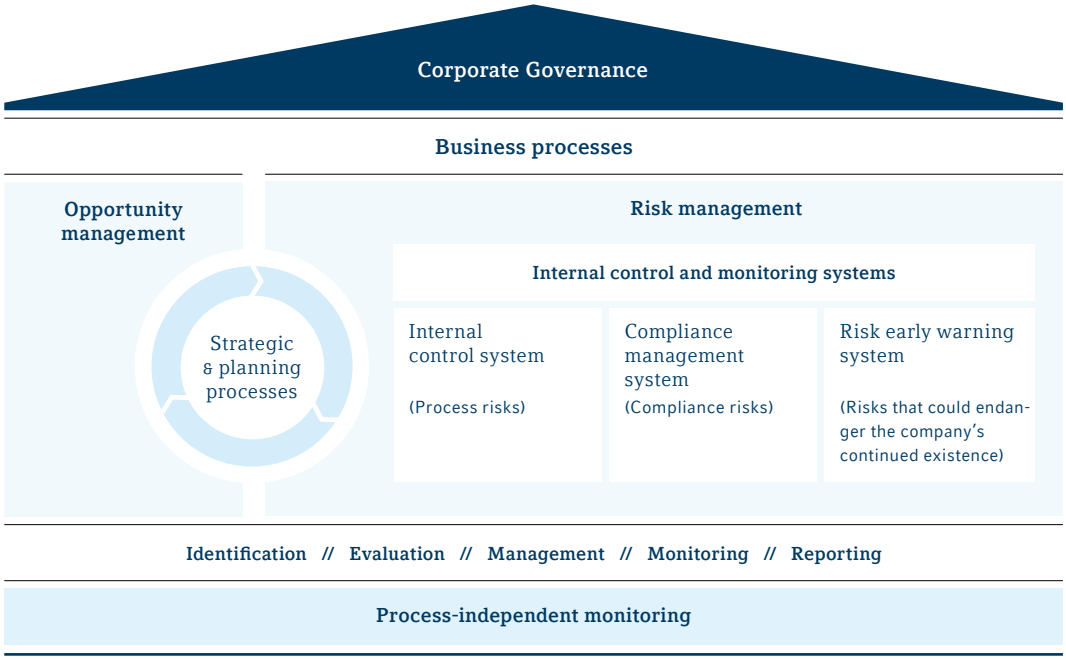
// Opportunity and risk management integral to Bayer's Group-wide corporate governance system

// No risks currently identified that could endanger the Bayer Group's continued existence

20.3.1 Group-wide Risk Management System

Corporate governance forms the basis for sustainable growth and economic success. One factor for corporate governance is the ability to systematically detect and take advantage of opportunities while identifying any risks to the company's operations at an early stage.

Corporate Governance [Graphic 3.20.3]



The entrepreneurial decisions we make daily in the course of business processes are based on balancing opportunities and risks. We therefore regard risk management as an integral part of our business management system rather than the task of a specific organizational unit. The starting-point for our risk management is our strategy and planning processes, from which relevant external and internal opportunities are derived and risks of an economic, ecological or social nature are identified. Opportunities and risks are identified by observing and analyzing trends along with macroeconomic, industry-specific, regional and local developments. The identified opportunities and risks are subsequently incorporated into the subgroups' strategic and operational planning. We attempt to avoid or mitigate risks by taking appropriate countermeasures, or to transfer them to third parties (such as insurers) to the extent possible and economically acceptable. We consciously accept and bear calculable and manageable risks commensurate with the anticipated opportunities. Opportunities and risks are continuously monitored using indicators so that changes in the economic or legal environment, for example, can be identified and suitable countermeasures initiated at an early stage if necessary.

To enable the Board of Management and the Supervisory Board to monitor material business risks as required by law, the following systems are also in place: an internal control system ensuring proper and effective financial reporting pursuant to Section 289 Paragraph 5 and Section 315 Paragraph 2 No. 5 of the German Commercial Code; a compliance management system; and a risk early warning system pursuant to Section 91 Paragraph 2 of the German Stock Corporation Act.

Differences exist among these management systems with regard to the processes, methods and IT systems used to identify, evaluate, manage, monitor and report risks depending on the type and level of risk and the time horizon. The principles underlying the various systems are documented in Group directives that are integrated into our central document control process (Margo) and accessible to all employees via the Bayer intranet. Depending on the system, responsibilities are assigned at the management level and coordinators are appointed in the subgroups, service companies and country companies and in the central functions of the Bayer Group. Overall responsibility for the effectiveness and appropriateness of the systems lies with the Chief Financial Officer.

The different systems are described below.

INTERNAL CONTROL SYSTEM FOR (GROUP) ACCOUNTING AND FINANCIAL REPORTING

(report pursuant to Sections 289 Paragraph 5 and 315 Paragraph 2 No. 5 of the German Commercial Code)

Bayer has an internal control system (ICS) in place for the (Group) accounting and financial reporting process. This process comprises defined structures and workflows implemented throughout the organization. The purpose of our ICS is to ensure proper and effective accounting and financial reporting in accordance with Section 289 Paragraph 5 and Section 315 Paragraph 2 No. 5 of the German Commercial Code.

The ICS is designed to guarantee timely, uniform and accurate accounting for all business processes and transactions based on applicable statutory regulations, accounting and financial reporting standards and the internal Group directives that are binding upon all consolidated companies.

The ICS is based on the COSO I (Committee of the Sponsoring Organizations of the Treadway Commission) and COBIT (Control Objectives for Information and Related Technology) frameworks and addresses misreporting risks in the consolidated financial statements. Risks are identified and evaluated, and steps are taken to counter them. Mandatory ICS standards such as system-based and manual reconciliation processes and functional separation have been derived from these frameworks and promulgated throughout the Group by the Group Accounting and Controlling unit of Bayer AG.

The management of each Group company holds responsibility for implementing the ICS standards at the local level. Using the Group's own shared service centers, the Group companies prepare their financial statements locally and transmit them with the aid of a data model that is standardized throughout the Group and based on the Group accounting directive. This ensures the regulatory compliance of the consolidated financial statements.

The effectiveness of the ICS processes for accounting and financial reporting is evaluated based on a cascaded self-assessment system that starts with the persons directly involved in the processes, then involves the principal responsible managers and ends with the Group Management Board. The system also makes use of internal and external audits. An IT system in use throughout the Group ensures uniform and audit-proof documentation and transparent presentation of all ICS-relevant business processes along with the relevant risks, controls and effectiveness evaluations.

The Group Management Board has confirmed the effective functioning of the internal control system for accounting and financial reporting and the relevant criteria for the 2013 business year. However, it should be noted that an internal control system, irrespective of its design, cannot provide absolute assurance that material misstatements in the accounting will be avoided or identified.

COMPLIANCE MANAGEMENT SYSTEM

Our compliance management system aims to encourage and ensure lawful, responsible and sustainable 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.

In light of the Bayer Group's diversified structure and international alignment, we are active in different industry sectors, markets and geographical regions worldwide, each of which has its own local legislation and industry codes. All significant compliance risks are identified by evaluating cases reported around the world and performing a trend analysis on this basis. New tools were also developed and communicated in 2013 together with the subgroups to enhance the systematic, preventive identification and assessment of risks. Risk identification will be carried out both bottom-up via the country organizations and top-down via the global functions, taking global, local and business-specific aspects into account. In addition, the Corporate Auditing department performed compliance program audits for the first time beginning in mid-2013. These audits proactively evaluate the implementation of the Corporate Compliance Policy in the country organizations.

RISK EARLY WARNING SYSTEM PURSUANT TO SECTION 91 PARAGRAPH 2 OF THE GERMAN STOCK CORPORATION ACT

A process known as BayRisk has been established to enable the early identification of developments that could endanger the company's continued existence, thus satisfying the legal requirements regarding an early warning system for corporate risks pursuant to Section 91 Paragraph 2 of the German Stock Corporation Act. A central unit within the Corporate Center establishes the framework and standards for the design of the Group's early warning system.

The BayRisk process is decentrally organized, with each subgroup, service company or central function being originally responsible for identifying, evaluating, managing and reporting at an early stage any potential developments or events that could prevent our company from sustainably increasing its value. It not only includes risks that could immediately impact our financial targets, but also those that could affect the achievement of qualitative objectives. In the Life Science subgroups, the information required for the BayRisk process is supported by separate enterprise risk management systems. Risk officers are appointed to evaluate, manage and monitor the identified risks according to both financial and non-financial criteria.

Risks are evaluated using estimates of the likelihood that they will materialize, the potential impact and/or their relevance for our external stakeholders. The following matrix illustrates the financial criteria for rating a risk as high, medium or low.

Assessment Matrix According to Financial Criteria [Table 3.20.3]

	Likelihood of occurrence based on a ten-year period		
	Unlikely (< 10%)	Possible (10 – 70%)	Very likely (> 70%)
Accumulated impact (€ million)			
>1,250	H	H	H
500–1,250	M	M	H
<500	L	L	L

* H = high risk, M = medium risk, L = low risk

All significant risks and the respective countermeasures are documented in a Group-wide database. The risk portfolio is reviewed three times a year. Significant changes must be quickly entered in the database and reported directly to the Group Management Board. Details of the risk portfolio form part of a management information system accessible to the members of the Group Leadership Circle. A report on the risk portfolio is submitted to the Audit Committee of the Supervisory Board once a year.

PROCESS-INDEPENDENT MONITORING

The effectiveness of our management systems is monitored and evaluated by Bayer's internal audit department (Corporate Auditing) at regular intervals. Corporate Auditing performs an independent and objective audit function that is designed to verify compliance with laws and directives. The unit also supports the company in achieving its goals by systematically and deliberately evaluating the efficiency and effectiveness of governance and control environments, management systems and the implemented controls, and helping to improve them. The selection of audit targets follows a risk-based approach. Corporate Auditing performs its tasks according to internationally recognized standards and delivers reliable audit outcomes. This is confirmed by a quality assessment undertaken in 2012 by the American Institute of Internal Auditors (IAA). A report is presented annually to the Audit Committee of the Supervisory Board on the internal control system and its effectiveness.

Risks in the areas of occupational health and safety, plant safety, hazard prevention, environmental protection and product quality are assessed through specific HSEQ (health, safety, environment and quality) audits.

In addition, the external auditor, as part of its audit of the annual financial statements, assesses the basic suitability of the early warning system for identifying at an early stage any risks that could endanger the company's continued existence. The auditor regularly reports to the Group Management Board and the Supervisory Board on the identification of any weaknesses in the internal control system.

Audit outcomes are taken into account in the continuous enhancement of our management processes.

20.3.2 Opportunities and Risks

As a global enterprise with a diversified portfolio, the Bayer Group is constantly exposed to a wide range of internal or external developments or events that could significantly impact the achievement of our financial and non-financial objectives.

This chapter outlines both opportunities and risks. Only those risks that are classified in our risk matrix as "medium" or "high" are included. The risks are more highly aggregated here than in our internal documentation. The sequence in which the risks are listed does not imply any order of significance. The opportunities and risks described apply to all subgroups unless otherwise indicated.

ENVIRONMENT

Ethical conduct is a matter of essential importance for society. Many stakeholders evaluate companies according to whether they conduct themselves not just "legally" – but also "legitimately." The Bayer Group is dedicated to sustainable development in all areas of its business activity. Any violations of this voluntary commitment and the resulting adverse media reporting or negative public perception of the company may damage the reputation of the Bayer brand. We counter this risk through responsible corporate governance that is geared toward generating not only economic but also ecological and social benefit.

In the Emerging Markets – particularly Asia and Latin America, and prospectively in Africa – we see opportunities arising out of increasing affluence and the associated growth in demand for pharmaceutical products, for example. Bayer is therefore systematically expanding its business in these regions in particular.

At the same time, however, the risk exists that our growth could be impeded by increasing global cost pressure on health systems. Pharmaceutical products are subject to regulatory price controls in many markets, and government reimbursement systems often favor less expensive generic medicines over branded products. In addition, in some markets, major suppliers in the health care sector can exert substantial pressure on prices. Price controls and pricing pressure reduce earnings from our pharmaceutical

products and may occasionally make the market launch of a new product unprofitable. We expect the current extent of regulatory controls and market pressures on pricing to persist or increase. Changes with respect to price development and governmental price controls in our key markets are continuously monitored. Where necessary, we adjust our business model depending on the extent of such price controls and the pressure on prices.

Further opportunities and risks may also result if actual market developments vary from those we predict in Chapter 20.1 "Economic Outlook." Where macroeconomic developments deviate from forecasts, this may either positively or negatively impact our sales and earnings expectations.

For MaterialScience, an economic downturn, changes in competitors' behavior or the market entry of new competitors can lead to a more intense competitive situation characterized by overcapacities and increased pressure on prices.

Continuous analysis of the business environment and of economic forecasts enables us to pursue the opportunities we identify and mitigate risks. We respond to fluctuations in demand by adjusting our capacities.

INNOVATION

Innovation is the key driver of Bayer's future growth.

The trends described below not only pose challenges, but also offer opportunities for us to develop and market innovative solutions to overcome them.

Increase in life expectancy

Certain diseases, such as cancer or chronic cardiovascular disorders, are on the rise as a consequence of higher life expectancy. HealthCare is responding to the increased demand for innovative health care products to treat age-related diseases by focusing its R&D activities on therapeutic areas such as oncology and cardiology.

Shortage of arable land, increasing demand for food

The growing world population poses one of the principal challenges to the sustainable supply of food, particularly in view of the reduction in arable land caused by increasing urbanization and extreme weather events associated with climate change. Increasing affluence in the emerging countries is boosting the demand for animal-based food products. We expect there to be an increasing need for high-value seed and crop protection products to allow sufficient food and animal feed to be produced to satisfy rising demand despite limited acreages. For example, CropScience is developing processes to better protect crops against climate and environmental stresses.

Conserving natural resources and protecting the climate

The finite nature of certain natural resources and efforts to protect the climate are boosting the demand for innovative products and technologies that reduce resource consumption and lead to lower emissions. This trend is being reinforced by increasingly stringent regulatory requirements and growing consumer awareness for the need to use resources sustainably. MaterialScience is therefore developing new materials that help to raise energy efficiency and reduce emissions. For example, polyurethane from MaterialScience is used in the construction industry for thermal insulation, giving a positive energy balance, while its polycarbonate is used in the automotive industry to reduce vehicle weight.

Our activities concentrate on the development of innovative solutions to address these trends and global challenges. To strengthen our innovation capability, we place special importance on networking and cooperation both within and outside of our company. Of particular significance here is interdisciplinary research at the interface between human, animal and plant health, which is being driven forward by Nimbus, a joint project of our two Life Science subgroups. Substantial research synergies can be achieved in this way and new mechanisms of action investigated that could lead to the development of new products

in the long term. Our strategy also encompasses research projects with outside partners from academia and industry that give us access to complementary technologies and external innovation potential.

For further information, see Chapter 5 "Research, Development, Innovation" and Chapter 3 "Strategies of the Subgroups."

See Chapters 5 and 3

Despite all our efforts, we cannot assure that all of the products we are currently developing or will develop in the future will achieve planned approval/registration or commercial success, if, for example, a drug candidate fails to meet trial endpoints. The Bayer Group pursues a holistic portfolio management strategy in order to estimate the probability of success and prioritize its development projects. Furthermore, the expectations of the public and the regulatory authorities with regard to the safety and efficacy of chemical and pharmaceutical products are constantly rising. Against this background, we continue to anticipate increasing regulatory requirements for clinical or (eco)toxicological studies, for example. This increases product development costs and the time it takes to obtain registration or marketing approval. Special projects are set up to coordinate the successful implementation of new regulations.

Where it appears strategically advantageous, we may supplement our organic growth through acquisitions of companies or businesses. Failure to successfully integrate a newly acquired business or unexpectedly high integration costs could jeopardize the achievement of qualitative or quantitative targets and adversely impact earnings. Teams of experts therefore manage both the due diligence process and the integration itself. Due diligence includes reviewing risk-relevant factors such as compliance with applicable environmental regulations and occupational health and safety standards at production sites.

PATENT PROTECTION

Patents guarantee the protection of our intellectual property. In the event of successful commercialization, profits can be invested to enable continued, sustainable research and development. Due to the long period of time between the patent application and the market launch of a product, Bayer generally only has a few years in which to earn an adequate return on its intellectual property. This makes effective and reliable patent protection all the more important.

A large proportion of our products, especially in our Life Science businesses, is protected by patents. Generic manufacturers and others attempt to contest patents prior to their expiration. Sometimes a generic version of a product may even be launched "at-risk" prior to the issuance of a final patent decision. We are currently involved in legal proceedings to enforce patent rights relating to our products. Details of these proceedings are given in Note [32] to the consolidated financial statements. When a patent defense is unsuccessful, or if one of our patents expires, our prices are likely to come under pressure because of increased competition from generic products entering the market. Legal action by third parties for alleged infringement of patent or proprietary rights by Bayer may impede or even halt the development or manufacturing of certain products or require us to pay monetary damages or royalties to third parties. Our patents department regularly reviews the patent situation in conjunction with the respective operating units and watches for potential patent infringements so that legal action can be taken if necessary.

Consolidated Financial Statements Note 32

PRODUCTS AND PRODUCT STEWARDSHIP

Bayer assesses the potential health and environmental risks of a product along the entire value chain – from research and development through production, marketing and use by the customer to disposal.

Despite extensive studies prior to approval or registration, it is possible that products could be partially or completely withdrawn from the market due to the occurrence of adverse side effects or other factors. Such a withdrawal may be voluntary or result from legal or regulatory measures. The possibility that unwanted trace amounts of genetically modified organisms may occur in agricultural products and/or foodstuffs cannot be entirely excluded. Potential payments of damages in connection with the above risks may materially diminish our earnings.

Our Life Science businesses counter these risks through a holistic organizational structure and process organization in the areas of pharmaceutical and crop protection product safety and testing. In addition, a comprehensive product stewardship program is in place at CropScience. For further information, see Chapter 10 "Product Stewardship."

See Chapter 10

Another risk we face is that of illegal trading of counterfeit medicines and crop protection products by criminal third parties. In most cases, the composition and quality of counterfeit products is inferior to that of the original products. No local regulatory authority assures the quality of the manufacturing or distribution process, so product recall is not possible. Products originating from illegal third-party manufacturing not only endanger patients, users, animals and the environment, but also jeopardize the good reputation of our company and our products and undermine our competitiveness.

Bayer actively cooperates with authorities' efforts to combat product counterfeiting through preventive measures and the prosecution of offenders.

PROCUREMENT AND PRODUCTION

Our Supplier Code of Conduct sets forth our sustainability principles and explains what we expect from our partners along the value chain. The Code requires, among other things, that our suppliers observe environmental regulations, occupational health and safety rules, human rights and other provisions – such as forgoing all forms of child labor. Violations of the Code may harm our company's reputation. Through supplier assessments and audits, we verify that our partners along the supply chain actually implement and adhere to our Code of Conduct (see Chapter 8 "Procurement and Production").

See Chapter 8

The Bayer Group requires significant quantities of energy and petrochemical feedstocks for its production processes. Procurement prices for energy and raw materials may fluctuate significantly. Experience has shown that higher production costs cannot always be passed on to our customers through price adjustments. This applies especially at MaterialScience.

We place great importance not only on product safety and compatibility but also on protecting our employees and the environment. Risks associated with the manufacturing, filling, storage or shipping of products are mitigated through integrated quality, health, environmental protection and safety management. The materialization of such risks may result in personal injury, property damage, environmental contamination, loss of production, business interruptions and/or liability for compensation payments.

Operations at our sites may be disrupted by natural disasters, fires or explosions, sabotage or supply shortages for our principal raw materials or intermediates. This applies particularly to the biotech products of HealthCare because of the highly complex manufacturing processes. If we are unable to meet demand, structural sales declines may occur, particularly in our Pharmaceuticals business. We counter this risk by distributing production for certain products among multiple sites or by building up safety stocks. Furthermore, the Bayer Emergency Response System (BayErs) was developed for our production sites as a mandatory component of our HSEQ management. It is aimed at protecting employees, neighbors, the environment and production facilities from the risks described. The Group Regulation "Safety and Crisis Management" forms the basis for this.

Increased ecological awareness creates opportunities for MaterialScience in two ways. On the one hand, market potential results from the development of innovative materials for our customers (see Chapter 5 "Research, Development, Innovation"). On the other hand, if we succeed in increasing the efficiency of our production processes, this benefits the environment and reduces our costs at the same time. By developing new production technologies and applying internationally recognized energy management systems, we aim to help meet increasingly stringent environmental regulations, further reduce emissions and waste, and increase energy efficiency. In this way we not only contribute to sustainable climate protection and the conservation of natural resources, but also achieve cost and competitive advantages.

See Chapter 5

EMPLOYEES

Skilled and dedicated employees are essential for the company's success. Particularly in the Emerging Markets of Asia and Latin America, the number of people with the technical and language skills needed to meet the demanding requirements of an international enterprise remains relatively small. Accordingly, those who possess these skills are highly sought after by locally based companies. If we are unable to recruit a sufficient number of employees in these countries and retain them within Bayer, this could have significant adverse consequences for the company's future development.

We aim to convince our target groups of the benefits offered by our company through comprehensive human resources marketing. These include competitive compensation with performance-related components as well as an extensive range of training and development opportunities. We also pursue a diversity-based human resources policy to tap the full potential of the employment market. Our human resources policy is based on the principles of our Human Rights Position, corporate values and Corporate Compliance Policy.

For more information see Chapter 7 "Employees."

See Chapter 7

INFORMATION TECHNOLOGY

Business and production processes and the internal and external communications of the Bayer Group are increasingly dependent on global IT systems.

A significant technical disruption or failures of IT systems could severely impair our business and production processes. Technical precautions such as data recovery and continuity plans are defined and continuously evolved together with our internal IT service provider.

The confidentiality of internal and external data is of fundamental importance to us. A loss of data confidentiality, integrity or authenticity could lead to manipulation and/or the uncontrolled outflow of data and know-how. We have measures in place to counter this risk, including a comprehensive authorization concept.

A Group-wide committee has been established to determine the fundamental strategy, architecture and safety measures for the Bayer Group. The measures are now being implemented by the subgroups and service companies in conjunction with this central organization.

LAW AND COMPLIANCE

The Bayer Group is exposed to numerous legal risks from legal disputes or proceedings to which we are currently a party or which could arise in the future, particularly in the areas of product liability, competition and antitrust law, patent disputes, tax assessments and environmental protection.

Investigations of possible legal or regulatory violations, such as potential infringements of antitrust law or certain marketing and/or distribution methods, may result in the imposition of civil or criminal penalties – including substantial monetary fines – and/or other adverse financial consequences, harm Bayer's reputation and ultimately detract from the company's success.

To encourage and ensure the observance of laws and regulations, Bayer has established a global compliance management system that forms part of its corporate culture (see Chapter 18.3 "Compliance").

See Chapter 18.3

Legal proceedings currently considered to involve material risks are described in Note [32] to the consolidated financial statements.

Consolidated Financial Statements Note 32

FINANCIAL OPPORTUNITIES AND RISKS

The Bayer Group has financial opportunities at its disposal in the form of the market prices it can command for its products, and is exposed to financial risks in the form of liquidity, credit and market price risks, as well as risks resulting from pension obligations.

The management of financial opportunities and risks takes place using established, documented processes. One component is financial planning, which serves as the basis for determining the liquidity risk and the future foreign currency and interest-rate risks and covers all Group companies that are relevant from a cash-flow perspective. Financial planning comprises a planning horizon of 12 months and is regularly updated.

The following paragraphs provide details of these and other financial opportunities and risks and how they are managed.

See Chapter 16.7

Further information is provided in Chapter 16.7 "Financial Management of the Group."

Liquidity risk

Liquidity risks result from the possible inability of the Bayer Group to meet current or future payment obligations due to a lack of cash or cash equivalents. The liquidity risk is determined and managed by the central finance department as part of our same-day and medium-term liquidity planning.

Consolidated Financial Statements Note 30.2

Payment obligations from financial instruments are explained according to their maturity in Note [30.2] to the consolidated financial statements.

The Group holds sufficient liquidity to ensure the fulfillment of all planned payment obligations at maturity. In addition, a reserve is maintained for unbudgeted shortfalls in cash receipts or unexpected disbursements. The amount of this liquidity reserve is regularly reviewed and adjusted as necessary according to circumstances.

Liquid assets are held mainly in the form of overnight and term deposits. Credit facilities also exist with banks. These include, in particular, a €3.5 billion syndicated credit facility, which is undrawn.

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 Bayer Group does not conclude master netting arrangements with its customers for non-derivative financial instruments. Here, the total value of the financial assets represents the maximum credit risk exposure. In the case of derivatives, positive and negative market values may be netted under certain conditions.

To manage credit risks from trade receivables, the respective invoicing companies appoint credit managers who regularly analyze customers' creditworthiness. Some of these receivables are collateralized, and the collateral is used according to local conditions. It includes credit insurance, advance payments, letters of credit and guarantees. Reservation of title is generally agreed with our customers. Credit limits are set for all customers. All credit limits for debtors where total exposure is €10 million or more are evaluated by local credit management and submitted to the Group's Central Financial Risk Committee.

Credit risks from financial transactions are managed centrally in the finance department. To minimize risks, financial transactions are only conducted within predefined exposure limits and with banks and other partners that preferably have investment-grade ratings. All risk limits are based on methodical models. Adherence to the risk limits is continuously monitored.

Opportunities and risks resulting from market price changes

Opportunities and risks resulting from changes in market currency and interest rates are managed by the central finance department. Risks are eliminated or mitigated through the use of derivative financial instruments. Further details on derivatives are given in Note [30.3] to the consolidated financial statements.

Consolidated Financial Statements Note 30.3

The type and level of currency and interest-rate risks are explained in the following paragraphs using sensitivity analyses based on hypothetical changes in risk variables (such as interest curves) to determine the potential effects of market price fluctuations on equity and earnings. The assumptions used in the sensitivity analyses reflect our view of the changes in currency exchange and interest rates that are reasonably possible over a one-year period. These assumptions are regularly reviewed.

Foreign currencies

Foreign currency opportunities and risks for the Bayer Group result 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 in the functional currency.

Receivables and payables in liquid currencies from operating activities and financial items are generally fully exchange-hedged through forward exchange contracts and cross-currency interest-rate swaps.

Anticipated payment receipts and disbursements are hedged according to the rules agreed between the Group Management Board, the finance department and the operating units. Hedging takes place through forward exchange contracts and currency options.

Sensitivities were determined based on a hypothetical adverse scenario in which the euro depreciates by 10% against all other currencies compared with the year-end exchange rates. Under this scenario, the estimated hypothetical loss of cash flows from derivative and non-derivative financial instruments would have diminished earnings and equity (other comprehensive income) as of December 31, 2013 by €250 million (December 31, 2012: €256 million). Of this amount, €122 million is related to the U.S. dollar, €35 million to the Japanese yen and €28 million to the Canadian dollar.

Derivatives used to hedge anticipated currency exposure that are designated for hedge accounting would have diminished other comprehensive income by €267 million.

Interest rates

Interest-rate opportunities and risks result for the Bayer Group through 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 opportunities and risks are managed over a target duration established by management for Bayer Group debt. This target duration is subject to regular review. Interest-rate swaps are concluded to achieve the target structure for Group debt.

A sensitivity analysis based on our net floating-rate receivables and payables position at year end 2013, taking into account the interest rates relevant for our receivables and payables in all principal currencies, produced the following result: a hypothetical increase of 100 basis points, or 1 percentage point, in these interest rates (assuming constant currency exchange rates) as of January 1, 2013 would have raised our interest expense for the year ended December 31, 2013 by €33 million (December 31, 2012: €46 million).

Risk to pension obligations from capital market developments

The Bayer Group has obligations to current and former employees related to pensions and other post-employment benefits. Changes in relevant valuation parameters such as interest rates, mortality and rates of increases in compensation 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 outside profit or loss. 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. This in turn may diminish equity, and/or it may necessitate additional contributions by the company. Further details are given in Note [25] to the consolidated financial statements.

Consolidated Financial Statements Note 25

We address the risk of market-related fluctuations in the fair value of our plan assets through prudent strategic investment, and we constantly monitor investment risks in regard to our global pension obligations.

OVERALL ASSESSMENT OF OPPORTUNITIES AND RISKS

The risks reported above do not endanger the company's continued existence. There are also no risks with mutually reinforcing dependencies that could combine to endanger the company's continued existence.

Risks rated as "medium" or "high" did not change significantly compared with the previous year.

Based on our product portfolio, our know-how and our innovation capability, we are 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.

21. Takeover-Relevant Information

EXPLANATORY REPORT PURSUANT TO SECTIONS 289 PARAGRAPH 4 AND 315 PARAGRAPH 4 OF THE GERMAN COMMERCIAL CODE (HGB)

The capital stock of Bayer AG amounted as of December 31, 2013 to €2,117 million, divided into 826,947,808 no-par bearer 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 publish voting rights announcements at WWW.INVESTOR.BAYER.DE/EN/STOCK/OWNERSHIP-STRUCTURE

We received no notifications in 2013 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.

Pursuant to Section 84, Paragraph 1 of the German Stock Corporation Act (AktG), the members of the Board of Management are appointed and dismissed by the Supervisory Board. Since Bayer AG falls within the scope of the German Codetermination Act, the appointment or dismissal of members of the Board of Management requires a majority of two thirds of the votes of the members of the Supervisory Board on the first ballot. If no such majority is achieved, the appointment may be approved pursuant to Section 31, Paragraph 3 of the Codetermination Act on a second ballot by a simple majority of the votes of the members of the Supervisory Board. If the required majority still is not achieved, a third ballot is held. Here again, a simple majority of the votes suffices, but in this ballot the Chairman of the Supervisory Board has two votes pursuant to Section 31, Paragraph 4 of the Codetermination Act. Under Section 6, Paragraph 1 of the Articles of Incorporation of Bayer AG, the Board of Management must comprise at least two members. The Supervisory Board may appoint one member to be Chairman of the Board of Management pursuant to Section 84, Paragraph 2 of the German Stock Corporation Act or Section 6, Paragraph 1 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 or, where a capital majority is required, by a simple majority of the capital.

Provisions of the Articles of Incorporation concerning Authorized Capital I and Authorized Capital II are entered in the commercial register of Bayer AG. With the approval of the Supervisory Board and until April 29, 2015, the Board of Management may use the Authorized Capital I to increase the capital stock by up to a total of €530 million. New shares may be issued against cash contributions and/or contributions in kind, but capital increases against contributions in kind may not exceed a total of €423 million. If the Authorized Capital I is used to issue shares in return for cash contributions, stockholders must normally be granted subscription rights. The Board of Management may only exclude stockholders' subscription rights to shares issued out of the Authorized Capital I that do not represent more than 20% of the existing capital stock. Absent a further resolution on the exclusion of stockholders' subscription rights, the Board of Management also may only exclude stockholders' subscription rights to shares issued under other authorizations regarding capital measures (Authorized Capital II, bonds with warrants or convertible bonds, purchase and sale of own shares) provided that such shares do not in total represent more than 20% of the existing capital stock.

With the approval of the Supervisory Board and until April 29, 2015, the Board of Management is also authorized to increase the capital by up to €212 million in one or more installments by issuing shares out of the Authorized Capital II in exchange for cash contributions. The stockholders must normally be granted subscription rights. However, the Board of Management is authorized, with the approval of the Supervisory Board, to exclude subscription rights for stockholders provided the capital increase out of the Authorized Capital II does not exceed 10% of the capital stock existing at the time this authorization becomes effective or the time this authorization is exercised and the issue price of the new shares is not significantly below the market price of the already listed shares.

Conditional capital of €212 million exists in connection with an authorization – valid through April 29, 2015 – to issue bonds with warrants or convertible bonds, profit-sharing rights or profit participation bonds (collectively referred to as "bonds") with a total face value of €6 billion. The Board of Management may, with the consent of the Supervisory Board and under certain conditions, exclude the bond subscription rights that would otherwise be granted to stockholders. One of the conditions is that the total amount of the shares required to service the bonds does not exceed 10% of the capital stock. Any other shares issued without granting subscription rights to the stockholders in direct or analogous application of Section 186, Paragraph 3, Sentence 4 of the German Stock Corporation Act shall be credited against this 10% limit. Further, the 2010 Annual Stockholders' Meeting authorized the Board of Management to purchase and sell company shares representing up to 10% of the capital stock. This authorization also expires on April 29, 2015.

A material agreement that is subject to the condition precedent of a change of control pertains to the undrawn €3.5 billion syndicated credit facility arranged by Bayer AG and its U.S. subsidiary Bayer Corporation. This facility is available until December 2018 and can be extended to run for up to two further one-year periods. 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.

In addition, the terms of the €2.4 billion (as of December 31, 2013) in notes issued by Bayer in the years 2006 to 2013 under its multi-currency European Medium Term Notes program also contain a change-of-control clause. Holders of these notes have the right to demand the redemption of their notes by Bayer AG in the event of a change of control if Bayer AG's credit rating is downgraded within 120 days after such change of control becomes effective.

Agreements exist for the members of the Board of Management in compliance with Section 4.2.3 of the German Corporate Governance Code to cover the eventuality of a takeover offer being made for Bayer AG. Under these agreements, payments promised in the event of early termination of the service contract of a Board of Management member due to a change of control are limited to the value of three years' compensation and may not compensate more than the remaining term of the contract.

02
Consolidated Financial Statements

For direct access to a chapter, simply click on its name.

Bayer Group Consolidated Income Statements

[Table 4.1]

	Note	2012	2013
		€ million	€ million
Net sales	[7]	**39,741**	**40,157**
Cost of goods sold		(19,070)	(19,347)
Gross profit		**20,671**	**20,810**
Selling expenses	[8]	(9,981)	(10,080)
Research and development expenses	[9]	(3,013)	(3,190)
General administration expenses		(1,866)	(1,883)
Other operating income	[10]	1,087	897
Other operating expenses	[11]	(2,970)	(1,620)
EBIT*		**3,928**	**4,934**
Equity-method loss	[13.1]	(18)	(16)
Financial income		503	389
Financial expenses		(1,237)	(1,100)
Financial result	[13]	**(752)**	**(727)**
Income before income taxes		**3,176**	**4,207**
Income taxes	[14]	(723)	(1,021)
Income after income taxes		**2,453**	**3,186**
of which attributable to non-controlling interest	[15]	50	(3)
of which attributable to Bayer AG stockholders (net income)		**2,403**	**3,189**
		€	€
Earnings per share	[16]		
Basic		2.91	3.86
Diluted		2.91	3.86

2012 figures restated
* EBIT: earnings before financial result and taxes

Bayer Group Consolidated Statements of Comprehensive Income

[Table 4.2]

	Note	2012	2013
		€ million	€ million
Income after income taxes		**2,453**	**3,186**
of which attributable to non-controlling interest	*[15]*	*50*	*(3)*
of which attributable to Bayer AG stockholders		*2,403*	*3,189*
Remeasurements of the net defined benefit liability for post-employment benefit plans	[25]	(2,779)	1,946
Income taxes	[14]	848	(604)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**(1,931)**	**1,342**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**(1,931)**	**1,342**
Changes in fair values of derivatives designated as cash flow hedges	[30.3]	38	221
Reclassified to profit or loss		148	(156)
Income taxes	[14]	(53)	(18)
Other comprehensive income from cash flow hedges		**133**	**47**
Changes in fair values of available-for-sale financial assets	[20]	30	52
Reclassified to profit or loss		–	(76)
Income taxes	[14]	(12)	16
Other comprehensive income from available-for-sale financial assets		**18**	**(8)**
Changes in exchange differences recognized on translation of operations outside the eurozone		(17)	(737)
Reclassified to profit or loss		–	–
Other comprehensive income from exchange differences		**(17)**	**(737)**
Other comprehensive income that may be reclassified subsequently to profit or loss		**134**	**(698)**
Effects of changes in scope of consolidation		**5**	**(1)**
Total other comprehensive income*		**(1,792)**	**643**
of which attributable to non-controlling interest		*(4)*	*(14)*
of which attributable to Bayer AG stockholders		*(1,788)*	*657*
Total comprehensive income		**661**	**3,829**
of which attributable to non-controlling interest		*46*	*(17)*
of which attributable to Bayer AG stockholders		*615*	*3,846*

2012 figures restated
* total changes recognized outside profit or loss

Bayer Group Consolidated Statements of Financial Position

[Table 4.3]

	Note	Jan. 1, 2012	Dec. 31, 2012	Dec. 31, 2013
		€ million	€ million	€ million
Noncurrent assets				
Goodwill	[17]	9,148	9,293	9,862
Other intangible assets	[17]	10,284	9,464	8,914
Property, plant and equipment	[18]	9,887	9,898	10,015
Investments accounted for using the equity method	[19]	265	225	203
Other financial assets	[20]	1,348	1,308	1,203
Other receivables	[23]	425	541	496
Deferred taxes	[14]	1,312	1,579	1,596
		32,669	**32,308**	**32,289**
Current assets				
Inventories	[21]	6,370	6,991	7,129
Trade accounts receivable	[22]	7,060	7,433	7,569
Other financial assets	[20]	2,784	857	779
Other receivables	[23]	1,636	1,655	1,476
Claims for income tax refunds		372	376	413
Cash and cash equivalents		1,771	1,698	1,662
Assets held for sale		84	–	–
		20,077	**19,010**	**19,028**
Total assets		**52,746**	**51,318**	**51,317**
Equity	[24]			
Capital stock of Bayer AG		2,117	2,117	2,117
Capital reserves of Bayer AG		6,167	6,167	6,167
Other reserves		10,912	10,167	12,434
Equity attributable to Bayer AG stockholders		**19,196**	**18,451**	**20,718**
Equity attributable to non-controlling interest		59	100	86
		19,255	**18,551**	**20,804**
Noncurrent liabilities				
Provisions for pensions and other post-employment benefits	[25]	7,787	9,246	7,368
Other provisions	[26]	1,726	2,111	1,977
Financial liabilities	[27]	7,995	6,962	5,590
Other liabilities	[29]	474	409	362
Deferred taxes	[14]	2,116	935	1,193
		20,098	**19,663**	**16,490**
Current liabilities				
Other provisions	[26]	4,217	4,844	4,727
Financial liabilities	[27]	3,683	2,568	3,441
Trade accounts payable	[28]	3,785	4,305	4,473
Income tax liabilities	[26.1]	76	72	101
Other liabilities	[29]	1,629	1,315	1,281
Liabilities directly related to assets held for sale		3	–	–
		13,393	**13,104**	**14,023**
Total equity and liabilities		**52,746**	**51,318**	**51,317**

2012 figures restated

Bayer Group Consolidated Statements of Cash Flows

[Table 4.4]

	Note	2012	2013
		€ million	€ million
Income after income taxes		2,453	3,186
Income taxes		723	1,021
Financial result		752	727
Income taxes paid or accrued		(1,560)	(1,644)
Depreciation, amortization and impairments		2,988	2,896
Change in pension provisions		(581)	(249)
(Gains) losses on retirements of noncurrent assets		(219)	(105)
Gross cash flow		**4,556**	**5,832**
Decrease (increase) in inventories		(680)	(608)
Decrease (increase) in trade accounts receivable		(455)	(751)
(Decrease) increase in trade accounts payable		550	389
Changes in other working capital, other non-cash items		559	309
Net cash provided by (used in) operating activities (net cash flow)	[33]	**4,530**	**5,171**
Cash outflows for additions to property, plant, equipment and intangible assets		(1,929)	(2,157)
Cash inflows from sales of property, plant, equipment and other assets		230	153
Cash inflows from divestitures		178	79
Cash inflows from (outflows for) noncurrent financial assets		(258)	204
Cash outflows for acquisitions less acquired cash		(466)	(1,082)
Interest and dividends received		104	125
Cash inflows from (outflows for) current financial assets		1,327	97
Net cash provided by (used in) investing activities	[34]	**(814)**	**(2,581)**
Dividend payments and withholding tax on dividends		(1,366)	(1,574)
Issuances of debt		1,308	9,078
Retirements of debt		(3,254)	(9,697)
Interest paid including interest rate swaps		(793)	(550)
Interest received from interest rate swaps		325	212
Cash outflows for the purchase of additional interests in subsidiaries		(3)	(4)
Net cash provided by (used in) financing activities	[35]	**(3,783)**	**(2,535)**
Change in cash and cash equivalents due to business activities		**(67)**	**55**
Cash and cash equivalents at beginning of year		**1,771**	**1,698**
Change in cash and cash equivalents due to changes in scope of consolidation		–	–
Change in cash and cash equivalents due to exchange rate movements		(6)	(91)
Cash and cash equivalents at end of year		**1,698**	**1,662**

2012 figures restated

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Bayer Group Consolidated Statements of Changes in Equity

[Table 4.5]

					Accumulated Comprehensive Income					
	Capital stock of Bayer AG	Capital reserves of Bayer AG	Retained earnings incl. net income	Exchange differences	Fair-value measurement of securities	Cash flow hedges	Revaluation surplus	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Dec. 31, 2011 as reported	**2,117**	**6,167**	**12,755**	**(1,811)**	**24**	**(81)**	**41**	**19,212**	**59**	**19,271**
Restatement			(16)	2	(2)			(16)		(16)
Dec. 31, 2011 restated	**2,117**	**6,167**	**12,739**	**(1,809)**	**22**	**(81)**	**41**	**19,196**	**59**	**19,255**
Equity transactions with owners										
Capital increase/decrease										
Dividend payments			(1,364)					(1,364)	(2)	(1,366)
Other changes			9				(5)	4	(3)	1
Other comprehensive income			(1,926)	(13)	18	133		(1,788)	(4)	(1,792)
Income after income taxes			2,403					2,403	50	2,453
Dec. 31, 2012	**2,117**	**6,167**	**11,861**	**(1,822)**	**40**	**52**	**36**	**18,451**	**100**	**18,551**
Equity transactions with owners										
Capital increase/decrease										
Dividend payments			(1,571)					(1,571)	(3)	(1,574)
Other changes			(3)				(5)	(8)	6	(2)
Other comprehensive income			1,341	(723)	(8)	47		657	(14)	643
Income after income taxes			3,189					3,189	(3)	3,186
Dec. 31, 2013	**2,117**	**6,167**	**14,817**	**(2,545)**	**32**	**99**	**31**	**20,718**	**86**	**20,804**

2012 figures restated

Bayer Annual Report 2013

Notes to the Consolidated Financial Statements of the Bayer Group

1. Key data by segment and region

Key Data by Segment [Table 4.6]

	HealthCare				CropScience		MaterialScience		Reconciliation					
	Pharmaceuticals		Consumer Health		CropScience		MaterialScience		All Other Segments		Corporate Center and Consolidation		Group	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Net sales (external)	10,798	11,188	7,806	7,736	8,383	8,819	11,491	11,238	1,260	1,169	3	7	39,741	40,157
Change	+8.5%	+3.6%	+8.1%	−0.9%	+15.5%	+5.2%	+6.1%	−2.2%	−0.7%	−7.2%	−25.0%	+133.3%	+8.8%	+1.0%
Currency-adjusted change	+4.1%	+10.1%	+3.5%	+3.7%	+11.7%	+9.9%	+2.2%	+0.2%	−1.0%	−6.6%	−25.0%	+133.3%	+4.7%	+5.4%
Intersegment sales	383	70	6	7	30	34	49	56	1,971	2,196	(2,439)	(2,363)	–	–
Net sales (total)	11,181	11,258	7,812	7,743	8,413	8,853	11,540	11,294	3,231	3,365	(2,436)	(2,356)	39,741	40,157
Other operating income	255	150	80	93	432	171	93	112	77	55	150	316	1,087	897
EBIT	1,104	2,031	1,101	1,229	1,556	1,729	581	435	(75)	(11)	(339)	(479)	3,928	4,934
EBIT before special items	2,327	2,552	1,460	1,421	1,543	1,801	613	429	42	49	(346)	(479)	5,639	5,773
EBITDA before special items	3,232	3,490	1,887	1,844	2,025	2,248	1,263	1,072	214	222	(341)	(475)	8,280	8,401
Gross cash flow	1,319	2,293	1,340	1,280	1,332	1,590	952	887	(131)	113	(256)	(331)	4,556	5,832
Capital invested	13,579	14,953	8,061	8,367	9,852	9,909	10,713	10,029	1,366	597	(224)	(107)	43,347	43,748
CFROI	7.7%	14.2%	14.8%	14.0%	12.5%	14.2%	5.8%	5.5%	–	–	–	–	8.2%	11.1%
Net cash flow	2,262	1,853	1,284	1,127	899	682	735	977	(370)	308	(280)	224	4,530	5,171
Equity-method income (loss)	(1)	–	–	–	–	–	(17)	(16)	–	–	–	–	(18)	(16)
Equity-method investments	1	–	–	–	–	–	224	203	–	–	–	–	225	203
Assets	16,433	16,585	8,576	8,515	10,364	10,826	8,968	8,429	1,709	1,981	5,268	4,981	51,318	51,317
Capital expenditures	527	564	257	209	365	532	638	605	223	239	2	6	2,012	2,155
Additions to noncurrent assets from acquisitions	–	1,121	24	419	518	97	57	–	–	–	–	–	599	1,637
Depreciation, amortization and impairments	918	1,093	743	505	494	455	655	666	173	173	5	4	2,988	2,896
of which impairment losses	23	150	320	101	15	3	7	29	3	15	–	–	368	298
of which impairment loss reversals	(16)	–	–	(13)	(5)	–	–	–	–	–	–	–	(21)	(13)
Liabilities	6,007	4,873	2,413	2,108	4,405	4,114	2,861	2,473	2,992	3,657	14,089	13,288	32,767	30,513
Research and development expenses	1,561	1,654	394	386	779	857	241	208	19	21	19	64	3,013	3,190
Number of employees (as of Dec. 31)	37,200	38,000	17,600	18,000	20,800	22,400	14,500	14,300	19,200	19,800	700	700	110,000	113,200

2012 figures restated

Key Data by Region [Table 4.7]

	Europe		North America		Asia/Pacific		Latin America/ Africa/Middle East		Reconciliation		Total	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Net sales (external) – by market	14,722	15,086	9,576	9,680	8,759	8,623	6,684	6,768	–	–	39,741	40,157
Change	+2.0%	+2.5%	+17.1%	+1.1%	+11.7%	−1.6%	+10.2%	+1.3%	–	–	+8.8%	+1.0%
Currency-adjusted change	+1.5%	+3.1%	+8.8%	+4.2%	+3.9%	+6.9%	+8.3%	+10.2%	–	–	+4.7%	+5.4%
Net sales (external) – by point of origin	16,371	16,649	9,469	9,556	8,479	8,442	5,422	5,510	–	–	39,741	40,157
Change	+1.7%	+1.7%	+15.9%	+0.9%	+12.8%	−0.4%	+14.3%	+1.6%	–	–	+8.8%	+1.0%
Currency-adjusted change	+1.3%	+2.3%	+7.4%	+4.2%	+4.6%	+8.3%	+12.2%	+12.6%	–	–	+4.7%	+5.4%
Interregional sales	7,880	8,828	2,934	3,285	653	642	518	607	(11,985)	(13,362)	–	–
Other operating income	495	576	195	103	223	85	174	133	–	–	1,087	897
EBIT	2,623	3,965	160	83	802	612	682	753	(339)	(479)	3,928	4,934
Assets	27,715	27,359	10,480	11,178	7,215	6,694	4,330	4,490	1,578	1,596	51,318	51,317
Capital expenditures	949	1,136	574	531	366	363	123	125	–	–	2,012	2,155
Depreciation, amortization and impairments	1,845	1,758	675	672	366	373	97	89	5	4	2,988	2,896
Liabilities	20,380	19,756	6,644	5,444	3,449	2,937	1,355	1,183	939	1,193	32,767	30,513
Research and development expenses	2,198	2,153	588	812	186	174	41	51	–	–	3,013	3,190
Number of employees (as of Dec. 31)	52,300	53,600	15,300	15,200	26,200	28,000	16,200	16,400	–	–	110,000	113,200

2012 figures restated

2. General information

The consolidated financial statements of the Bayer Group as of December 31, 2013, were prepared by Bayer Aktiengesellschaft (Bayer AG) according to the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), London, and the interpretations of the IFRS Interpretations Committee (IFRS IC), both as endorsed by the European Union and in effect at the end of the reporting period. The applicable further requirements of Section 315a of the German Commercial Code were also taken into account.

Bayer AG is a global enterprise based in Germany. Its registered office is at Kaiser-Wilhelm-Allee 1, 51368 Leverkusen. Its material business activities in the fields of health care, agriculture and high-tech polymer materials take place in the HealthCare, CropScience and MaterialScience subgroups, respectively. The activities of the various segments are outlined in NOTE [5].

A declaration concerning the German Corporate Governance Code has been issued pursuant to Section 161 of the German Stock Corporation Act and made available to stockholders.

The Board of Management of Bayer AG prepared the consolidated financial statements of the Bayer Group on February 17, 2014. They were discussed by the Audit Committee of the Supervisory Board of Bayer AG at its meeting on February 25, 2014, and approved by the Supervisory Board at its plenary meeting on February 26, 2014.

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 is 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 of the company or the Group, 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 consolidated financial statements of the Bayer Group are drawn up in euros. Amounts are stated in millions of euros (€ million) except where otherwise indicated.

The financial statements of the individual consolidated companies are prepared as of the closing date of the Group financial statements.

3. Effects of new financial reporting standards

FINANCIAL REPORTING STANDARDS APPLIED FOR THE FIRST TIME IN 2013

The first-time application of the following financial reporting standards was of material importance. The prior-year figures have been restated accordingly.

IAS 19 (Employee Benefits) as revised in 2011, referred to in the following as IAS 19R (IAS 19 revised), contains amended accounting rules for defined benefit pension plans and severance agreements. Contrary to the previous rule, IAS 19R requires that past service cost be recognized immediately in profit or loss. In addition, the net interest cost calculated on the net pension liability by applying a discount rate for high-quality corporate bonds is now recognized

in profit or loss. Remeasurement amounts resulting from actuarial gains and losses, the balance of the return on plan assets and amounts already recognized as net interest income, and the effect of the asset ceiling are recognized outside profit or loss in the statement of comprehensive income. Net interest expense continues to be recognized in the financial result.

IAS 19R further specifies that severance payments to be earned in future periods must be recognized in profit or loss over the respective period of service. This revision led to a change in the accounting for top-up payments to employees under pre-retirement part-time working agreements in Germany. In the past, provisions were established at the time the offer of a pre-retirement part-time working agreement was made or the agreement was concluded, even when service remained to be provided by the employee in the future.

In view of the clarifying information contained in IAS 19R, "other post-employment benefit obligations" in Germany (particularly from pre- and early retirement obligations) were reclassified from provisions for pensions and other post-employment benefits to other provisions for personnel commitments.

IFRS 11 (Joint Arrangements) prescribes the accounting for joint arrangements and supersedes IAS 31 (Interests in Joint Ventures) and SIC-13 (Jointly Controlled Entities – Non-Monetary Contributions by Venturers). A joint arrangement is deemed to exist if the Bayer Group through a contractual agreement jointly controls activities managed with a third party. Joint control is only deemed to exist if decisions regarding the relevant activities require the unanimous consent of the parties sharing control. Joint arrangements are classified as either joint operations or joint ventures. The Bayer Group recognizes the share of assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with its rights and obligations. The investment in a joint venture is accounted for using the equity method in accordance with the provisions of the amended IAS 28 (Investments in Associates and Joint Ventures). The application of IFRS 11 (Joint Arrangements) and IAS 28 (Investments in Associates and Joint Ventures) is mandatory in the E.U. for annual periods beginning on or after January 1, 2014. Earlier application is permitted. The Bayer Group has applied these standards retrospectively since January 1, 2013 in compliance with the transitional provisions.

Due to the first-time application of IFRS 11, Lyondell Bayer Manufacturing Maasvlakte VOF, Netherlands – which was previously accounted for using the equity method – is now accounted for as a joint operation and therefore the share of the Bayer Group in the assets, liabilities, revenues and expenses is included in the consolidated financial statements in accordance with the Bayer Group's rights and obligations. The €15 million difference, arising from the reclassification, between the previous carrying amount according to the equity method and the pro-rated net assets was reflected as a reduction in other reserves.

Pursuant to IFRS 11, the joint ventures Bayer IMSA, S.A. de C.V., Mexico, and Bayer Zydus Pharma Private Limited, India, which were previously included by proportionate consolidation, are now accounted for using the equity method.

The interest in Baulé S.A.S., France, was accounted for retrospectively for the first quarter of 2012 using the equity method. Prior to the application of IFRS 11 it was included by proportionate consolidation. The remaining shares of Baulé were acquired effective March 31, 2012, and the company has been fully consolidated since that date.

The effects that the new financial reporting standards applied for the first time in 2013 would have had on the relevant figures for the prior-year period or the respective opening/closing dates are shown in the following tables.

Accounting Changes: Consolidated Income Statement 2012

[Table 4.8]

	2012				
		Accounting changes			
			IFRS 11		
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	After accounting changes
	€ million	€ million	€ million	€ million	€ million
Net sales	**39,760**	**–**	**(8)**	**(11)**	**39,741**
Cost of goods sold	(19,059)	–	(16)	5	(19,070)
Gross profit	**20,701**	**–**	**(24)**	**(6)**	**20,671**
Selling expenses	(9,987)	–	–	6	(9,981)
Other operating income	1,083	5	–	(1)	1,087
Other operating expenses	(2,958)	(8)	(3)	(1)	(2,970)
EBIT*	**3,960**	**(3)**	**(27)**	**(2)**	**3,928**
Equity-method loss	(46)	–	29	(1)	(18)
Financial income	502	–	–	1	503
Financial expenses	(1,168)	(70)	–	1	(1,237)
Financial result	**(712)**	**(70)**	**29**	**1**	**(752)**
Income before income taxes	**3,248**	**(73)**	**2**	**(1)**	**3,176**
Income taxes	(752)	29	–	–	(723)
Income after income taxes	**2,496**	**(44)**	**2**	**(1)**	**2,453**
of which attributable to Bayer AG stockholders (net income)	**2,446**	**(44)**	**2**	**(1)**	**2,403**
Earnings per share (€)	**2.96**	**(0.05)**	**–**	**–**	**2.91**

* EBIT: earnings before financial result and taxes

Accounting Changes: Consolidated Statement of Comprehensive Income 2012 [Table 4.9]

	2012				
		Accounting changes			
			IFRS 11		
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	After accounting changes
	€ million	€ million	€ million	€ million	€ million
Income after income taxes	**2,496**	**(44)**	**2**	**(1)**	**2,453**
of which attributable to Bayer AG stockholders	*2,446*	*(44)*	*2*	*(1)*	*2,403*
Remeasurements of the net defined benefit liability for post-employment benefit plans	(2,849)	70	–	–	(2,779)
Income taxes	876	(28)	–	–	848
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans	**(1,973)**	**42**	**–**	**–**	**(1,931)**
Other comprehensive income that will not be reclassified subsequently to profit or loss	**(1,973)**	**42**	**–**	**–**	**(1,931)**
Changes in exchange differences recognized on translation of operations outside the eurozone	(16)	–	–	(1)	(17)
Other comprehensive income from exchange differences	**(16)**	**–**	**–**	**(1)**	**(17)**
Other comprehensive income that may be reclassified subsequently to profit or loss	**135**	**–**	**–**	**(1)**	**134**
Total other comprehensive income*	**(1,833)**	**42**	**–**	**(1)**	**(1,792)**
of which attributable to Bayer AG stockholders	*(1,829)*	*42*	*–*	*(1)*	*(1,788)*
Total comprehensive income	**663**	**(2)**	**2**	**(2)**	**661**
of which attributable to Bayer AG stockholders	*617*	*(2)*	*2*	*(2)*	*615*

*total changes recognized outside profit or loss

Accounting Changes: Consolidated Statement of Financial Position as of January 1, 2012 [Table 4.10]

	Jan. 1, 2012				
		Accounting changes			
			IFRS 11		
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	After accounting changes
	€ million	€ million	€ million	€ million	€ million
Noncurrent assets					
Goodwill	9,160	–	–	(12)	9,148
Other intangible assets	10,295	–	–	(11)	10,284
Property, plant and equipment	9,823	–	66	(2)	9,887
Investments accounted for using the equity method	319	–	(89)	35	265
Other financial assets	1,364	–	(17)	1	1,348
Deferred taxes	1,311	1	–	–	1,312
	32,697	**1**	**(40)**	**11**	**32,669**
Current assets					
Inventories	6,368	–	9	(7)	6,370
Trade accounts receivable	7,061	–	–	(1)	7,060
Other receivables	1,628	–	6	2	1,636
Claims for income tax refunds	373	–	–	(1)	372
Cash and cash equivalents	1,770	–	4	(3)	1,771
	20,068	**–**	**19**	**(10)**	**20,077**
Total assets	**52,765**	**1**	**(21)**	**1**	**52,746**
Equity					
Other reserves	10,928	3	(23)	4	10,912
Equity attributable to Bayer AG stockholders	**19,212**	**3**	**(23)**	**4**	**19,196**
	19,271	**3**	**(23)**	**4**	**19,255**
Noncurrent liabilities					
Provisions for pensions and other post-employment benefits	7,870	(83)	–	–	7,787
Other provisions	1,649	78	–	(1)	1,726
Deferred taxes	2,116	3	(3)	–	2,116
	20,104	**(2)**	**(3)**	**(1)**	**20,098**
Current liabilities					
Other provisions	4,218	–	–	(1)	4,217
Financial liabilities	3,684	–	–	(1)	3,683
Trade accounts payable	3,779	–	7	(1)	3,785
Other liabilities	1,630	–	(2)	1	1,629
	13,390	**–**	**5**	**(2)**	**13,393**
Total equity and liabilities	**52,765**	**1**	**(21)**	**1**	**52,746**

Accounting Changes: Consolidated Statement of Financial Position as of December 31, 2012 [Table 4.11]

	Dec. 31, 2012				
		Accounting changes			
			IFRS 11		
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	After accounting changes
	€ million	€ million	€ million	€ million	€ million
Noncurrent assets					
Property, plant and equipment	9,863	–	37	(2)	9,898
Investments accounted for using the equity method	284	–	(63)	4	225
Other financial assets	1,324	–	(17)	1	1,308
Deferred taxes	1,581	(1)	–	(1)	1,579
	32,350	**(1)**	**(43)**	**2**	**32,308**
Current assets					
Inventories	6,980	–	14	(3)	6,991
Trade accounts receivable	7,431	–	–	2	7,433
Other financial assets	856	–	–	1	857
Other receivables	1,648	–	8	(1)	1,655
Cash and cash equivalents	1,695	–	5	(2)	1,698
	18,986	**–**	**27**	**(3)**	**19,010**
Total assets	**51,336**	**(1)**	**(16)**	**(1)**	**51,318**
Equity					
Other reserves	10,185	1	(21)	2	10,167
Equity attributable to Bayer AG stockholders	**18,469**	**1**	**(21)**	**2**	**18,451**
	18,569	**1**	**(21)**	**2**	**18,551**
Noncurrent liabilities					
Provisions for pensions and other post-employment benefits	9,373	(127)	–	–	9,246
Other provisions	1,986	125	–	–	2,111
Deferred taxes	938	–	(3)	–	935
	19,668	**(2)**	**(3)**	**–**	**19,663**
Current liabilities					
Financial liabilities	2,570	–	–	(2)	2,568
Trade accounts payable	4,295	–	11	(1)	4,305
Other liabilities	1,318	–	(3)	–	1,315
	13,099	**–**	**8**	**(3)**	**13,104**
Total equity and liabilities	**51,336**	**(1)**	**(16)**	**(1)**	**51,318**

Accounting Changes: Consolidated Statement of Cash Flows 2012 [Table 4.12]

	2012				
		Accounting changes			
			IFRS 11		
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	After accounting changes
	€ million	€ million	€ million	€ million	€ million
Income after income taxes	2,496	(44)	2	(1)	2,453
Income taxes	752	(29)	–	–	723
Financial result	712	70	(29)	(1)	752
Depreciation, amortization and impairments	2,960	–	28	–	2,988
Change in pension provisions	(542)	(39)	–	–	(581)
Gross cash flow	**4,599**	**(42)**	**1**	**(2)**	**4,556**
Decrease (increase) in inventories	(674)	–	(5)	(1)	(680)
Decrease (increase) in trade accounts receivable	(452)	–	–	(3)	(455)
(Decrease) increase in trade accounts payable	539	–	4	7	550
Changes in other working capital, other non-cash items	520	42	(4)	1	559
Net cash provided by (used in) operating activities (net cash flow)	**4,532**	**–**	**(4)**	**2**	**4,530**
Cash outflows for additions to property, plant, equipment and intangible assets	(1,929)	–	(1)	1	(1,929)
Cash inflows from sales of property, plant, equipment and other assets	227	–	3	–	230
Cash inflows from (outflows for) noncurrent financial assets	(261)	–	3	–	(258)
Cash inflows from (outflows for) current financial assets	1,329	–	(1)	(1)	1,327
Net cash provided by (used in) investing activities	**(818)**	**–**	**4**	**–**	**(814)**
Issuances of debt	1,309	–	–	(1)	1,308
Net cash provided by (used in) financing activities	**(3,782)**	**–**	**–**	**(1)**	**(3,783)**
Change in cash and cash equivalents due to business activities	**(68)**	**–**	**–**	**1**	**(67)**
Cash and cash equivalents at beginning of year	**1,770**	**–**	**4**	**(3)**	**1,771**
Change in cash and cash equivalents due to exchange rate movements	(7)	–	1	–	(6)
Cash and cash equivalents at end of year	**1,695**	**–**	**5**	**(2)**	**1,698**

The following new standards had no impact, or no material impact, on the presentation of the Group financial position or results of operations, or on earnings per share:

IFRS 10 (Consolidated Financial Statements) sets forth the requirements for the preparation and presentation of consolidated financial statements and supersedes IAS 27 (Consolidated and Separate Financial Statements) and SIC-12 (Consolidation – Special Purpose Entities). The standard defines a uniformly applicable control concept for all company forms to serve as the basis for determining which companies are to be fully consolidated. Control is 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. IFRS 10 was applied for the first time retrospectively in compliance with the transitional provisions.

IFRS 12 (Disclosure of Interests in Other Entities) prescribes the information to be disclosed in the notes to the financial statements about interests in subsidiaries, associates, joint arrangements and structured entities.

The revised IAS 27 (Separate Financial Statements) is now devoted entirely to accounting for interests in subsidiaries, associates and joint ventures in IFRS separate financial statements.

The application of IFRS 10 (Consolidated Financial Statements), IFRS 12 (Disclosure of Interests in Other Entities) and the amendments to IAS 27 (Separate Financial Statements) is mandatory in the E.U. for annual periods beginning on or after January 1, 2014. Earlier application is permitted. The Bayer Group has applied these standards since January 1, 2013.

IFRS 13 (Fair Value Measurement) provides a uniform definition of fair value and how it is measured. Fair value is now defined as the price that would be received to sell an asset or paid to transfer a liability. IFRS 13 also requires specific notes to the consolidated financial statements for assets and liabilities measured at fair value. IFRS 13 was applied for the first time prospectively.

The publication of IFRS 13 (Fair Value Measurement) in May 2011 also entailed consequential amendments to the disclosure requirements in IAS 36 (Impairment of Assets). It became necessary to disclose the recoverable amount of the cash-generating unit in every reporting period, whether or not an impairment loss was recognized or reversed in the period. In May 2013, the IASB amended IAS 36 by issuing "Recoverable Amount Disclosures for Non-Financial Assets" to modify this unintentionally broad disclosure requirement. The recoverable amount of a cash-generating unit now only has to be disclosed for periods in which an impairment loss has been recognized or reversed. Additional disclosures are required when an impairment loss is recognized or reversed and the recoverable amount is based on fair value less costs of disposal. The amendments are to be applied for annual periods beginning on or after January 1, 2014. However, earlier application is permitted where IFRS 13 is already applied. The Bayer Group made use of the early application provision.

In compliance with the amendment "Presentation of Items of Other Comprehensive Income" to IAS 1 (Presentation of Financial Statements), published in June 2011, the items of other comprehensive income are for the first time reported separately in the statement of comprehensive income according to whether or not they may subsequently become reclassifiable to profit or loss.

The amendment "Financial Instruments: Disclosures – Offsetting Financial Assets and Financial Liabilities" to IFRS 7, issued in December 2011, requires gross and net offsetting amounts reflected in the statement of financial position – along with other existing rights of set-off that do not meet the requirements for set-off in the statement of financial position – to be presented in tabular form, unless a different form of presentation is more appropriate.

In May 2012, the IASB published its fourth set of "Annual Improvements to IFRSs." The amendments address details of the recognition, measurement and disclosure of business transactions and serve to standardize terminology. They consist mainly of editorial changes to existing standards.

In June 2013, the IASB issued "Novation of Derivatives and Continuation of Hedge Accounting," an amendment to IAS 39 (Financial Instruments: Recognition and Measurement). The amendment introduces new rules for continuing an existing hedge accounting relationship using a novated derivative. A novation occurs when the original parties to a derivative agree that one or more clearing counterparties replace their original counterparty to become the new counterparty to each of the parties. The new rules enable a derivative to remain a hedging instrument in a continuing hedge accounting relationship despite its novation if certain criteria are met. The amendment is to be applied for annual periods beginning on or after January 1, 2014. Earlier application is permitted. The Bayer Group made use of the early application provision.

PUBLISHED FINANCIAL REPORTING STANDARDS THAT HAVE NOT YET BEEN APPLIED

The IASB and the IFRS Interpretations Committee have issued the following standards, amendments to standards, and interpretations whose application was not yet mandatory for the 2013 fiscal year and is conditional upon their endorsement by the European Union.

In November 2009, the IASB issued IFRS 9 (Financial Instruments), containing rules for the classification and measurement of financial assets. In October 2010, it issued new requirements for the classification and measurement of financial liabilities, incorporating them into IFRS 9. The new standard defines two instead of four measurement categories for financial assets, with classification to be based partly on the company's business model and partly on the characteristics of the contractual cash flows from the respective financial asset. In the case of equity investments that are not held for trading, an entity may irrevocably opt at initial recognition to recognize future changes in their fair value outside profit or loss in the statement of comprehensive income. In November 2013, the IASB issued further amendments under the title "Hedge Accounting and amendments to IFRS 9, IFRS 7 and IAS 39." The focus of the amendments is on a thorough revision of hedge accounting rules with the aim of more appropriately reflecting risk management activities in the financial statements. This involves additional disclosures in the notes. The mandatory effective date of January 1, 2015, previously contained in IFRS 9 was removed. The current version no longer includes a mandatory effective date. The amendments are not expected to be endorsed by the European Union until the IASB has published all parts of the project relating to the accounting treatment of financial instruments.

In December 2011, the IASB issued the amendment "Offsetting Financial Assets and Financial Liabilities" to IAS 32 (Financial Instruments: Presentation), clarifying what is meant by "right of set-off in all circumstances" and "simultaneous settlement." The amendment is to be applied for annual periods beginning on or after January 1, 2014. The changes will not have a material impact on the presentation of the Group's financial position or results of operations.

In October 2012, under the title "Investment Entities," the IASB issued amendments to IFRS 10, IFRS 12 and IAS 27 for investment entities. Such entities are to be exempted from the requirement to consolidate certain subsidiaries according to IFRS 10. Instead, they must recognize them at fair value through profit or loss. IFRS 12 introduces additional disclosure requirements for investment entities. The amendments are to be applied for annual periods beginning on or after January 1, 2014. The changes will not have a material impact on the presentation of the Group's financial position or results of operations.

In May 2013, the IFRS IC issued the interpretation IFRIC 21 (Levies). The interpretation covers the accounting for government-imposed levies with the exception of income taxes covered by IAS 12 (Income Taxes). It also provides guidance on when to recognize a liability for a levy. The interpretation is to be applied for annual periods beginning on or after January 1, 2014. However, it has not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of the Group's financial position or results of operations.

In November 2013, the IASB published narrow-scope amendments to IAS 19 (Employee Benefits) under the title "Defined Benefit Plans: Employee Contributions." These amendments address the accounting for contributions from employees or third parties to defined benefit pension plans where the contributions are a fixed percentage of salary throughout the period of employment. Such contributions may be accounted for as a reduction in current service cost in the period in which the related service was rendered. The amendments are to be applied for annual periods beginning on or after July 1, 2014. Earlier application is permitted. The amendments have not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of the Group's financial position or results of operations.

In December 2013, the IASB published the fifth and sixth sets of "Annual Improvements to IFRSs." The amendments address details of the recognition, measurement and disclosure of business transactions and serve to standardize terminology. They consist mainly of editorial changes to existing standards. They are applicable for annual periods beginning on or after July 1, 2014. Earlier application is permitted. The amendments have not yet been endorsed by the European Union. The Bayer Group is currently evaluating the impact the changes will have on the presentation of its financial position and results of operations.

4. Basic principles, methods and critical accounting estimates

The financial statements of the consolidated companies are prepared according to uniform accounting policies and measurement principles.

The consolidated financial statements of the Group 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 financial assets held for trading or available for sale, and derivatives.

In preparing the consolidated financial statements, the 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, sales allowances, product liability and guarantees. 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.

Changes in accounting policies or measurement principles in light of new or revised standards are applied retrospectively, except as otherwise provided in the respective standard. The income statement for the previous year and the opening statement of financial position for that year are adjusted as if the new accounting policies and/or measurement principles had always been applied.

CONSOLIDATION

The consolidated financial statements include subsidiaries, joint arrangements and associates.

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 activities that significantly influence 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.

Sales revenues, income and expenses, and gains and losses arising from transactions among the consolidated companies, along with receivables and liabilities existing between them, are eliminated. Deferred income tax effects are reflected in consolidation.

Capital consolidation is performed by offsetting the carrying amounts of subsidiaries against their underlying equity. When a majority interest in a company is acquired, its pro-rated equity at the acquisition date is measured using the acquisition method. Identifiable assets and liabilities (including contingent liabilities) are recognized at their fair values along with attributable deferred tax assets and liabilities. Any remaining difference to the purchase price is recognized as goodwill. The purchase prices of acquired companies domiciled outside the eurozone are translated at the exchange rates in effect at the respective dates of acquisition.

The purchase of shares from other owners is presented as an equity transaction. The difference between the equity acquired from other owners and the purchase price is therefore directly offset against equity.

Joint operations and joint ventures are based on joint arrangements. A joint arrangement is deemed to exist if the Bayer Group through a contractual agreement jointly controls activities managed with a third party. Joint control is only deemed to exist if decisions regarding the relevant activities require the unanimous consent of the parties sharing control.

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. The Bayer Group recognizes the share of assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with its rights and obligations.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint ventures are accounted for using the equity method.

Associates over which Bayer AG exerts significant influence, generally through an ownership interest between 20% and 50%, also are accounted for using the equity method.

The carrying amount of a company accounted for using the equity method is adjusted annually 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 in these companies' equities recognized in profit or loss – including impairment losses recognized on goodwill – are reflected in equity-method income/loss. Intercompany profits and losses for these companies were not material in either 2013 or 2012.

Companies that do not have a material impact on the Group's financial position or results of operations, either individually or in aggregate, are accounted for at cost of acquisition less any impairment losses.

FOREIGN CURRENCY TRANSLATION

The financial statements of the individual companies for inclusion in the consolidated financial statements are prepared in their respective functional currencies. A company's functional currency is that of the economic environment in which it primarily generates and expends cash. The majority of consolidated companies carry out their activities autonomously from a financial, economic and organizational point of view, and their functional currencies are therefore the respective local currencies.

In the separate financial statements of the individual consolidated companies, receivables and liabilities in currencies other than the respective functional currency are translated at closing rates. Related exchange differences are recognized in profit or loss as exchange gains or losses under other financial income and expenses.

In the consolidated financial statements, the assets and liabilities of companies outside the eurozone at the start and end of the year 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. 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 "Exchange differences" (in the tables in the notes). When a company is deconsolidated, such exchange differences are reclassified from equity to profit or loss.

The exchange rates for major currencies against the euro varied as follows:

Exchange Rates for Major Currencies [Table 4.13]

		Closing rate		Average rate	
€1/		2012	2013	2012	2013
ARS	Argentina	6.48	8.99	5.83	7.21
BRL	Brazil	2.69	3.26	2.50	2.85
CAD	Canada	1.31	1.47	1.28	1.37
CHF	Switzerland	1.21	1.23	1.21	1.23
CNY	China	8.22	8.35	8.10	8.16
GBP	United Kingdom	0.82	0.83	0.81	0.85
JPY	Japan	113.61	144.72	102.38	129.20
MXN	Mexico	17.18	18.07	16.90	16.93
USD	United States	1.32	1.38	1.28	1.33

Subsidiaries whose functional currencies have experienced a cumulative inflation rate of more than 100% over the past three years apply the rules of IAS 29 (Financial Reporting in Hyperinflationary Economies). Gains and losses incurred upon adjusting the carrying amounts of non-monetary assets and liabilities and the items of the statement of comprehensive income for inflation are recognized in other operating income and expenses. The only company to apply inflation accounting in 2013 was Bayer S.A., Venezuela. The exchange rate used for translation was the year-end rate calculated on the basis of the official exchange rate for the Venezuelan bolivar (VEF) against the U.S. dollar, converted at the respective USD/EUR rate.

NET SALES AND OTHER OPERATING INCOME

All revenues derived from the selling of products or rendering of services or from licensing agreements are recognized as sales. Other operational revenues are recognized as other operating income. Sales are recognized in profit or loss when the significant risks and rewards of ownership of the goods have been transferred to the customer, the company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold, the amount of revenue and costs incurred or to be incurred can be measured reliably, and it is sufficiently probable that the economic benefits associated with the transaction will flow to the company.

Sales are stated net of sales taxes, other taxes and sales deductions at the fair value of the consideration received or to be received. Sales deductions are estimated amounts for rebates, cash discounts and product returns. They are deducted at the time the sales are recognized, and appropriate provisions are recorded. Sales deductions are estimated primarily on the basis of historical experience, specific contractual terms and future expectations of sales development. It is unlikely that factors other than these could materially affect sales deductions in the Bayer Group. Adjustments to provisions made in prior periods for rebates, cash discounts or product returns were of secondary importance for income before income taxes in the years under report.

Provisions for rebates in 2013 amounted to 2.8% of total net sales (2012: 2.4%). In addition to rebates, Group companies offer cash discounts for prompt payment in some countries. Provisions for cash discounts as of December 31, 2013 and December 31, 2012 were less than 0.1% of total net sales for the respective year.

Sales are reduced by the amount of the provisions for expected returns of defective goods or of saleable products that may be returned under contractual arrangements. The net sales are reduced on the date of sale or on the date when the amount of future returns can be reasonably estimated. Provisions for product returns in 2013 amounted to 0.3% of total net sales (2012: 0.3%). If future product returns cannot be reasonably estimated and are significant to a sales transaction, the revenues and the related cost of sales are deferred until a reasonable estimate can be made or the right to return the goods has expired.

Some of the Bayer Group's revenues are generated on the basis of licensing agreements under which third parties have been granted rights to products and technologies. Payments received, or expected to be received, that relate to the sale or outlicensing of technologies or technological expertise are recognized in profit or loss as of the effective date of the respective agreement if all rights relating to the technologies and all obligations resulting from them have been relinquished under the contract terms. However, if rights to the technologies continue to exist or obligations resulting from them have yet to be fulfilled, the payments received are deferred accordingly. Upfront payments and similar non-refundable payments received under these agreements are recorded as other liabilities and recognized in profit or loss over the estimated performance period stipulated in the agreement.

License or research and development collaboration agreements may consist of multiple elements and provide for varying consideration terms, such as upfront payments and milestone or similar payments. They therefore have to be assessed to determine whether sales revenues should be recognized for individually delivered elements of such arrangements, i.e. for more than one unit of account. The condition for separate revenue recognition for individual units of account is that each element has value to the customer on a stand-alone basis, the fair value of the undelivered goods or unrendered services can be reliably determined, and delivery or performance of the as yet undelivered element(s) is probable and substantially within the control of the Bayer Group.

Other operating income may also arise from the exchange of intangible assets. The amount recognized is generally based on the fair value of the assets given up, calculated using the discounted cash flow method. If the assets given up are internally generated, the gain from the exchange generally equals their fair value.

RESEARCH AND DEVELOPMENT EXPENSES

For accounting purposes, research expenses are defined as costs incurred for current or planned investigations undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Development expenses are defined as costs incurred for the application of research findings or specialist knowledge to plans or designs for the production, provision or development of new or substantially improved products, services or processes, respectively, prior to the commencement of commercial production or use.

Research and development expenses are incurred in the Bayer Group for in-house research and development activities as well as numerous research and development collaborations and alliances with third parties.

Research and development expenses mainly comprise the costs for active ingredient discovery, clinical studies, research and development activities in the areas of application technology and engineering, field trials, regulatory approvals and approval extensions.

Research costs cannot be capitalized. The conditions for capitalization of development costs are closely defined: an intangible asset must be recognized if, and only if, there is reasonable certainty of receiving future cash flows that will cover an asset's carrying amount. 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 are not normally satisfied.

In the case of research and development collaborations, a distinction is generally made between payments on contract signature, upfront payments, milestone payments and cost reimbursements for work performed. If an intangible asset (such as the right to the use of an active ingredient) is acquired in connection with any of these payment obligations, the respective payment is capitalized even if it is uncertain whether further development work will ultimately lead to the production of a saleable product. Reimbursements of the cost of research or development work are recognized in profit or loss.

GOODWILL

In a business combination, goodwill is capitalized at the acquisition date. It is measured at its cost of acquisition, which is the excess of the acquisition price for shares in a company over the acquired net assets. The net assets are the balance of the fair values of the acquired identifiable assets and the assumed liabilities and contingent liabilities.

Goodwill is not amortized, but tested annually for impairment. Details of the annual impairment tests are given under "Procedure used in global impairment testing and its impact." Once an impairment loss has been recognized on goodwill, it is not reversed in subsequent periods.

OTHER INTANGIBLE ASSETS

An "other intangible asset" is an identifiable non-monetary asset without physical substance, other than goodwill (such as a patent, a trademark or a marketing right). It is capitalized if the future economic benefits attributable to the asset will probably flow to the company and the cost of acquisition or generation of the asset can be reliably measured.

Other intangible assets are recognized at the cost of acquisition or generation. Those with a determinable useful life are amortized accordingly on a straight-line basis over a period of up to 30 years, except where their actual depletion demands a different amortization pattern. Determination of the expected useful lives of such assets and the amortization patterns is based on estimates of the period for which they will generate cash flows. An impairment test is performed if there is an indication of possible impairment.

Other intangible assets with an indefinite life (such as the Bayer Cross trademark) and intangible assets not yet available for use (such as research and development projects) are not amortized, but tested annually for impairment.

Any impairment losses are recognized in profit or loss. If the reasons for a previously recognized impairment loss no longer apply, the impairment loss is reversed provided that the reversal does not cause the carrying amount to exceed the (amortized) cost of acquisition or construction.

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment is carried at the cost of acquisition or construction and depreciated over its estimated useful life. An impairment loss is recognized in addition if an asset's recoverable amount falls below its carrying amount.

The cost of acquisition comprises the acquisition price plus ancillary and subsequent acquisition costs, less any reduction received on the acquisition price. The cost of self-constructed property, plant and equipment comprises the direct cost of materials, direct manufacturing expenses, and appropriate allocations of material and manufacturing overheads. Where an obligation exists to dismantle or remove an asset or restore a site to its former condition at the end of its useful life, the present value of the related future payments is capitalized along with the cost of acquisition or construction upon completion and a corresponding liability is recognized.

If the construction phase of property, plant or equipment extends over a substantial period of time, the interest incurred on borrowed capital up to the date of completion is capitalized as part of the cost of acquisition or construction in accordance with IAS 23 (Borrowing Costs).

Costs for regular, comprehensive maintenance work (such as the major overhaul of a technical facility) are capitalized as a separate component if they satisfy the recognition criteria.

Property, plant and equipment is depreciated by the straight-line method over an asset's useful life, except where depreciation based on actual depletion is more appropriate.

The following depreciation periods are applied throughout the Group:

Useful Life of Property, Plant and Equipment [Table 4.14]

Buildings	20 to 50 years
Outdoor infrastructure	10 to 20 years
Storage tanks and pipelines	10 to 20 years
Plant installations	6 to 20 years
Machinery and equipment	6 to 12 years
Furniture and fixtures	4 to 10 years
Vehicles	4 to 8 years
Computer equipment	3 to 5 years
Laboratory and research facilities	3 to 5 years

Significant asset components with different useful lives are accounted for and depreciated separately.

If there are indications that an individual item of property, plant and equipment may be impaired, the recoverable amount is compared to the carrying amount. If the recoverable amount is less than the carrying amount, an impairment loss is recognized for the difference. If the reasons for a previously recognized impairment loss no longer apply, the impairment loss is reversed provided that the reversal does not cause the carrying amount to exceed the cost of acquisition or construction less depreciation.

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.

Real estate held for investment comprises land and buildings not being used for operational or administrative purposes. It is measured using the cost model. The fair value of the investment property reported in the Notes is determined using the discounted cash flow method, comparisons with the current market values of similar properties, or reports from external experts.

LEASING

A lease is an agreement whereby the lessor assigns to the lessee the right to use an asset for an agreed period of time in return for a payment or series of payments. Leases are classified as either finance or operating leases. Leasing transactions that transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee are treated as finance leases. All other leasing agreements are classified as operating leases. Whether an agreement constitutes a lease or contains a lease is determined upon inception of the lease.

Where the Bayer Group is the lessee in a finance lease, the leased asset is capitalized at the lower of the fair value of the asset and the present value of the minimum lease payments at the beginning of the lease term and simultaneously recognized under financial liabilities. The minimum lease payments are divided into the principal portion of the remaining obligation and the financing costs, which are determined using the effective-interest method. The leased asset is depreciated by the straight-line method over the shorter of its estimated useful life or the lease term.

Where the Bayer Group is the lessee in an operating lease, the lease payments are expensed. Where it is the lessor, the lease payments received are recognized in profit or loss. The leased asset continues to be recognized under property, plant and equipment in the Bayer Group's statement of financial position.

CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise cash, checks received, and balances with banks and companies. Cash equivalents are highly liquid short-term financial investments that are subject to an insignificant risk of changes in value, are easily convertible into a known amount of cash and have a maturity of three months or less from the date of acquisition or investment.

FINANCIAL ASSETS

Financial assets comprise loans and receivables, acquired equity and debt instruments, cash and cash equivalents, and derivatives with positive fair values.

They are recognized and measured in accordance with IAS 39 (Financial Instruments: Recognition and Measurement). Accordingly, financial assets are recognized in the consolidated financial statements if the Bayer Group has a contractual right to receive cash or other financial assets from another entity. Regular-way purchases and sales of financial assets are generally posted on the settlement date. Financial assets are initially recognized at fair value plus transaction costs. The transaction costs incurred for the purchase of financial assets held at fair value through profit or loss are expensed immediately. Interest-free or low-interest receivables are initially reflected at the present value of the expected future cash flows. For purposes of subsequent measurement, financial assets are allocated to the following categories according to IAS 39, with different measurement rules applying to each category. Allocation is made at the date of first-time recognition:

Financial assets held at fair value through profit or loss comprise those financial assets that are held for trading. Such financial assets were mainly acquired for purposes of liquidity management with the intention of reselling them within a short time. Receivables from forward commodity contracts and receivables from other derivatives that are included in other financial assets are also allocated to this category, except where hedge accounting is used. Changes in the fair value of financial assets in this category are recognized in profit or loss when the increase or decrease in fair value occurs.

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They are accounted for at amortized cost using the effective interest method. This category comprises trade accounts receivable, the loans and receivables included in other financial assets, the additional financial receivables reflected in other receivables, and cash and cash equivalents. Interest income from items assigned to this category is determined using the effective interest method.

Held-to-maturity financial assets are non-derivative financial assets, with fixed or determinable payments, that the Bayer Group is willing and able to hold until maturity. They are accounted for at amortized cost using the effective interest method. Held-to-maturity financial investments are recognized in other financial assets.

Available-for-sale financial assets are those non-derivative financial assets that are not assigned to any of the above categories. They mainly include equity instruments, such as shares, and debt instruments not to be held to maturity that are included in other financial assets. After their first-time recognition, available-for-sale financial assets are measured at fair value and any unrealized gains or losses are recognized outside profit or loss in equity. These are only reclassified to profit or loss if the assets are sold or if there are objective indications of impairment, in which case the accumulated loss is recognized in profit or loss. An objective indication of impairment is a significant or prolonged decrease in the fair value of an equity instrument to below its acquisition cost. Previously recognized impairment losses are reversed if the reasons for them no longer apply. Impairment loss reversals for equity instruments are recognized outside profit or loss, while those for debt instruments are recognized in profit or loss. Where possible, a fair value for equity and debt securities is derived from market data. Financial assets for which no market price is available and whose fair value cannot be reasonably estimated are recognized at cost less any impairment losses.

If there are substantial and objective indications of a decline in the value of loans and receivables, held-to-maturity financial assets or available-for-sale financial assets, an impairment test is performed. Indications of possible impairment include a high probability of insolvency, a significant deterioration in credit standing, a material breach of contract, operating losses reported by a company over several years, a reduction in market value, the financial restructuring of the debtor, or the disappearance of an active market for the asset.

In the case of loans and receivables, and held-to-maturity financial assets, an impairment test is performed in which the carrying amount is compared to the present value of the expected future cash flows, discounted at the original effective interest rate. If the carrying amount exceeds the present value, an impairment loss is recognized for the difference between the two amounts. If the reasons for previously recognized impairment losses no longer apply, the impairment losses are reversed provided that this does not cause the carrying amounts to exceed the amortized cost of acquisition.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets are transferred together with all material risks and benefits.

DERIVATIVES

The Bayer Group uses derivatives – such as forward exchange contracts and interest-rate swaps – to mitigate the risk of changes in exchange rates, interest rates and commodity prices. Derivatives are recognized at the trade date.

Contracts concluded in order to receive or deliver non-financial goods for the company's own purposes are not accounted for as derivatives but treated as pending transactions. Where embedded derivatives are identified that are required to be separated from the pending transactions, they are accounted for separately. To take advantage of market opportunities or cover possible peak demand, a non-material volume of transactions may be entered into for which the possibility of immediate resale cannot be excluded. Such transactions are allocated to separate portfolios upon acquisition and accounted for as derivatives according to IAS 39.

Derivatives are carried at fair value. Positive fair values at the end of the reporting period are reflected in financial assets, negative fair values in financial liabilities. Changes in the fair values of these derivatives are recognized directly in profit or loss except where hedge accounting is used. Changes in the fair values of forward exchange contracts and currency options serving as hedges of items in the statement of financial position are reflected in other financial income and expenses as exchange gains or losses, while changes in the values of interest-rate swaps and interest-rate options are recognized in interest income or expense. Changes in the fair values of commodity futures and options, and of forward exchange contracts used to hedge forecasted transactions in foreign currencies, are recognized in other operating income or expenses.

Changes in the fair values of derivatives designated as fair-value hedges and the adjustments in the carrying amounts of the underlying transactions are recognized in profit or loss.

Changes in the fair values of the effective portion of derivatives designated as cash flow hedges are initially recognized outside profit or loss in accumulated other comprehensive income. They are reclassified to profit or loss when the underlying transaction is realized. If such a derivative is sold or ceases to qualify for hedge accounting, the change in its value continues to be recognized in accumulated other comprehensive income until the forecasted transaction is realized. If the forecasted transaction is no longer probable, the amount previously recognized in accumulated other comprehensive income has to be reclassified to profit or loss. The ineffective portion of gains or losses on derivatives designated as cash flow hedges is recognized either in other operating income or expenses or in the financial result, depending on the type of underlying transaction.

The income and expense reflected in the financial result pertaining to the derivatives and the underlying transactions are shown separately. Income and expense are not offset.

INVENTORIES

In accordance with IAS 2 (Inventories), inventories encompass assets consumed in production or in the rendering of services (raw materials and supplies), assets in the production process for sale (work in process), goods held for sale in the ordinary course of business (finished goods and goods purchased for resale), and advance payments on inventories. Inventories are recognized at their cost of acquisition or production – calculated by the weighted-average method – or at their net realizable value, whichever is lower. The net realizable value is the estimated selling price in the ordinary course of business less estimated cost to complete and selling expenses.

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.

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 consolidation measures and for tax loss carryforwards and tax credits that are likely to be usable.

Deferred tax assets relating to deductible temporary differences, tax credits or tax loss carryforwards are recognized where it is sufficiently probable that taxable income 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 they relate to income taxes levied by the same taxation authority and Bayer has a legal right to settle on a net basis. 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.

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.

The probability that deferred tax assets resulting from temporary differences or loss 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.

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 expenses for the year in which they are due and as such are included in the functional cost items, and thus in EBIT. All other post-employment benefit systems are defined benefit plans, which may be either unfunded, i.e. financed by provisions, or funded, i.e. financed through pension funds.

The present value of provisions for defined benefit plans and the resulting expense are calculated in accordance with IAS 19 (Employee Benefits) by the projected unit credit method. The future benefit obligations are valued by actuarial methods and spread over the entire employment period on the basis of specific assumptions regarding beneficiary structure and the economic environment. These relate mainly to the discount rate, future salary and pension increases, variations in health care costs, and mortality rates.

The discount rates used are calculated from the yields of high-quality corporate bond portfolios in specific currencies with cash flows approximately equivalent to the expected disbursements from the pension plans. The uniform discount rate derived from this interest-rate structure is thus based on the yields, at the closing date, of a portfolio of "AA" rated corporate bonds whose weighted residual maturities approximately correspond to the duration necessary to cover the entire benefit obligation.

The fair value of plan assets is deducted from the present value of the defined benefit obligation for pensions and other post-employment benefits to determine the net defined benefit liability. The obligations and plan assets are valued at regular intervals of not more than three years. Comprehensive actuarial valuations for all major plans are performed annually as of December 31. Plan assets in excess of the benefit obligation are reflected in other receivables, subject to the asset ceiling specified in IAS 19 (Employee Benefits).

The balance of all income and expenses relating to defined benefit plans, except the net interest on the net liability, is recognized in EBIT. The net interest 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 respective amounts included in net interest. Deferred taxes relating to the effects of remeasurements are also recognized in other comprehensive income.

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.

Other provisions are measured in accordance with IAS 37 (Provisions, Contingent Liabilities and Contingent Assets) or, where applicable, IAS 19 (Employee Benefits). Where the cash outflow to settle an obligation is expected to occur after one year, the provision is recognized at the present value of the expected cash outflow. Claims for reimbursements from third parties are separately reflected in other receivables if their realization is virtually certain.

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.

To enhance the information content of the estimates, certain provisions that could have a material effect on the financial position or results of operations of the Group are selected and tested for their sensitivity to changes in the underlying parameters. To reflect uncertainty about the likelihood of the assumed events actually occurring, the impact of a five-percentage-point change in the probability of occurrence is examined in each case. This analysis has not shown other provisions to be materially sensitive.

Uncertainties exist with respect to the interpretation of complex tax regulations and the amount 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. The Group establishes **provisions for taxes**, based on reasonable estimates, for liabilities to the tax authorities of the respective countries that are uncertain as to their amount and the probability of their occurrence. The amount of such provisions is based on various factors, such as experience with previous tax audits and differing legal interpretations by the taxable entity and the responsible tax authority.

Provisions for environmental protection are recorded if future cash outflows are likely to be necessary to ensure compliance with environmental regulations or to carry out remediation work, such costs can be reliably estimated and no future benefits are expected from such measures.

Estimating the future costs of environmental protection and remediation involves many uncertainties, particularly with regard to the status of laws, regulations and the information available about conditions in the various countries and at the individual sites. Significant factors in estimating the costs include previous experiences in similar cases, the conclusions in expert opinions obtained regarding the Group's environmental programs, current costs and new developments affecting costs, management's interpretation of current environmental laws and regulations, the number and 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.

Taking into consideration experience gained to date regarding environmental matters of a similar nature, provisions are believed to be adequate based upon currently available information. Given the difficulties inherent in estimating liabilities in the businesses in which the Group operates, especially those for which the risk of environmental damage is greater in relative terms (CropScience and MaterialScience), it remains possible that material additional costs will be incurred beyond the amounts accrued. It may transpire during remediation work that additional expenditures are necessary over an extended period and that these exceed existing provisions and cannot be reasonably estimated.

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 can no longer be used.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities or fundamental reorganizations of business units.

The respective provisions are established when a detailed restructuring plan has been drawn up, resolved upon by the responsible decision-making level of management and communicated to the employees and/or their representatives. Provisions for restructuring are established at the present value of future disbursements.

Trade-related provisions are recorded mainly for the granting of rebates or discounts, product returns, or obligations in respect of goods or services already received but not yet invoiced.

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, patent disputes and environmental matters. **Provisions for litigations** are recorded in the statement of financial position in respect of pending or future litigations, subject to a case-by-case examination. Such legal proceedings are evaluated on the basis of the available information, including that from legal counsel acting for the Group, to assess potential outcomes. Where it is more likely than not that a present obligation arising out of legal proceedings will result in an outflow of resources, a provision is recorded in the amount of the present value of the expected cash outflows if these are considered to be reliably measurable.

These provisions cover the estimated payments to plaintiffs, court fees, attorney costs and the cost of potential settlements. The evaluation is based on the current status of the litigations at the end of each reporting period and includes an assessment of whether the criteria for recording a provision are met and, if so, the amount of the provision to be recorded. Adjusting events are reflected up to the date of preparation of the consolidated financial statements.

Litigation and other judicial proceedings generally 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 currently pending and future proceedings therefore cannot be predicted. As a result of a judgment in court proceedings or the conclusion of a settlement, the Bayer Group may incur charges in excess of presently established provisions and related insurance coverage.

Personnel-related provisions are mainly those recorded for annual bonus payments, variable one-time payments, individual performance awards, long-service awards, severance payments in connection with early retirement arrangements, surpluses on long-term accounts and other personnel costs. Obligations under stock-based compensation programs that provide for awards payable in cash are also included here.

FINANCIAL LIABILITIES

Financial liabilities comprise primary financial liabilities and negative fair values of derivatives.

Primary financial liabilities are initially recognized in the consolidated financial statements at fair value if the Bayer Group has a contractual obligation to transfer cash or other financial assets to another party. In subsequent periods, such liabilities are measured at amortized cost using the effective interest method.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

OTHER RECEIVABLES AND LIABILITIES

Accrued items and other non-financial assets and liabilities are carried at amortized cost. They are amortized to income by the straight-line method or according to performance of the underlying transaction.

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.

ASSETS HELD FOR SALE

Assets held for sale comprise noncurrent assets or disposal groups (together with any liabilities), the carrying amounts of which will be realized principally through a highly probable sale transaction within the next twelve months or an already contractually agreed sale transaction, and not through continued use. At the time of their classification as "held for sale," such assets are collectively measured at the lower of the carrying amount and fair value less costs to sell, and depreciation or amortization ceases.

ACQUISITION ACCOUNTING

Acquired businesses are accounted for using the acquisition method, which requires that the assets acquired and liabilities assumed be recorded at their respective fair values on the date Bayer obtains control. Ancillary acquisition costs are recognized as expenses in the periods in which they occur.

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 non-patented technologies and brands is based on assumptions concerning, for example:

- the outcomes of research and development activities regarding compound efficacy, results of clinical trials, etc.,
- the probability of obtaining regulatory approvals in individual countries,
- long-term sales trends,
- possible selling price erosion due to generic competition in the market following patent expirations,
- the behavior of competitors (launch of competing products, marketing initiatives, etc.).

For significant acquisitions, the purchase price allocation is carried out with assistance from independent third-party valuation specialists. The valuations are based on the information available at the acquisition date.

In step acquisitions, the fair values of the acquired entity's assets and liabilities are measured in accordance with IFRS 3 (Business Combinations) at the date on which control is obtained. Any resulting adjustments to the fair value of the existing interest are recognized in profit or loss. The carrying amount of the assets and liabilities already recognized in the statement of financial position is then adjusted accordingly.

PROCEDURE USED IN GLOBAL IMPAIRMENT TESTING AND ITS IMPACT

Impairment tests are performed not only on individual items of intangible assets, property, plant and equipment, but also at the level of cash-generating units or groups of cash-generating units. A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bayer Group regards its strategic business entities or groups of strategic business entities, as well as certain product families, as cash-generating units and subjects them to global impairment testing. The strategic business entities constitute the second financial reporting level below the segments.

Cash-generating units and unit groups are globally tested if there is an indication of possible impairment. Those to which goodwill is allocated are tested at least annually.

Impairment testing involves comparing the carrying amount of each cash-generating unit, unit group or item of intangible assets, property, plant or equipment to the recoverable amount, which is the higher of its fair value less costs to sell or value in use. If the carrying amount exceeds the recoverable amount, an impairment loss must be recognized for the difference. If a strategic business entity or entity group is found to be impaired, an impairment loss is first recognized on any goodwill allocated to it. Any remaining part of the impairment loss is then allocated among the other assets of the strategic business entity or entity group in proportion to their carrying amounts. The resulting expense is reflected in the same functional item of the income statement as the depreciation or amortization of the respective assets. If the criteria for a special item are satisfied, the impairment loss is recognized in profit or loss under other operating expenses. Income from impairment loss reversals is recognized in other operating income.

The recoverable amount is generally determined on the basis of the fair value less costs to sell, 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, the planning horizon normally being three to five years. Forecasting involves making assumptions, especially regarding future selling prices, sales volumes and costs. Where the recoverable amount is the fair value less costs to sell, the cash-generating unit or unit group is measured from the viewpoint of an independent market participant. Where the recoverable amount is the value in use, the cash-generating unit, unit group or individual asset 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 the respective individual growth rates derived from market information. The measurement of fair value less costs to sell is based on 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 subgroup and a subgroup-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.

The growth rates applied for impairment testing in 2013 and 2012 and the capital cost factors used to discount the expected cash flows are shown in the following table:

Impairment Testing Parameters [Table 4.15]

	HealthCare		CropScience		MaterialScience	
	2012	2013	2012	2013	2012	2013
	%	%	%	%	%	%
Growth rate	−2.0–0.0	0.0	1.7–2.9	1.3–2.8	0.0–2.0	0.0–1.5
After-tax cost of capital	5.6	6.5	6.7	7.3	6.9	7.4
Pre-tax cost of capital	7.2–10.1	9.0–9.3	8.3–9.4	8.7–9.8	8.8–9.9	9.6–10.5

No impairment losses were recognized on goodwill on the basis of the global annual impairment testing of the cash-generating units and unit groups in 2013 or 2012. Taking into account impairment loss reversals of €13 million (2012: €21 million), net impairment losses on intangible assets, property, plant and equipment amounted to €285 million (2012: €347 million). Details are provided in NOTES [17] and [18].

Although the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and developments in the industries in which the Bayer Group operates, and estimates of the discounted future cash flows are believed to be appropriate, changes in assumptions or circumstances could require changes in the analysis. This could lead to additional impairment losses in the future or – except in the case of goodwill – to reversals of previously recognized impairment losses if developments are contrary to expectations.

The sensitivity analysis for cash-generating units and unit groups to which goodwill is allocated was based on a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital and a one-percentage-point reduction in the long-term growth rate. Bayer concluded that under these conditions the only cash-generating unit in which an impairment loss would need to be recognized would be Diphenylmethane Diisocyanate (MDI). The sensitivities for MDI and – in light of the currently weak market environment for Polycarbonates (PCS) – the cash-generating unit PCS are as follows: in the event of a relative 3% (MDI) or 15% (PCS) increase in the weighted average cost of capital, a 3% (MDI) or 17% (PCS) reduction in future cash flows, a 0.24-percentage-point (MDI) or 1.34-percentage-point (PCS) reduction in the long-term growth rate or a 0.21-percentage-point (MDI) or 1.11-percentage-point (PCS) reduction in the EBITDA margin, the recoverable amount would correspond to the carrying amount of the unit.

5. 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 [4].

As of December 31, 2013, the Bayer Group comprised three subgroups, with operations subdivided into strategic business entities known as divisions (HealthCare), business groups (CropScience) or business units (MaterialScience). Their activities are aggregated into four reportable segments according to economic characteristics, products, production processes, customer relationships, methods of distribution and regulatory environment.

The segments' activities are as follows:

Activities of the Segments [Table 4.16]

Subgroup/Segment	Activities
HealthCare	
Pharmaceuticals	Development, production and marketing of prescription pharmaceuticals, such as contraceptives, hemophilia treatments, anticoagulants and medicines to treat multiple sclerosis, cancer, hypertension and infectious diseases
Consumer Health	Development, production and marketing of over-the-counter medications, dermatology products, nutritional supplements, veterinary medicines and animal grooming products; diagnostic systems such as blood glucose meters; medical products such as injection systems and contrast media for diagnostic procedures
CropScience	
CropScience	Development, production and marketing of a comprehensive product portfolio in the areas of seeds and plant traits; crop protection; and for gardens, the green industry and non-agricultural pest control
MaterialScience	
MaterialScience	Development, production and marketing of high-tech polymer materials in the areas of polyurethanes, polycarbonates, coating and adhesive raw materials and functional films; production and marketing of selected inorganic basic chemicals

Business activities that cannot be allocated to any other segment are reported under "All other segments." These include primarily the services provided by the service areas: Business Services, Technology Services and Currenta.

Holding companies' activities, the elimination of intersegment sales, and higher or lower expenses for Group-wide long-term stock-based compensation arising from fluctuations in the performance of Bayer stock are presented in our segment reporting as "Corporate Center and Consolidation."

The reconciliation in the table "Key Data by Region" eliminates interregional items and transactions and reflects income, expenses, assets and liabilities not allocable to geographical areas, particularly those relating to the Corporate Center.

The segment data are calculated as follows:

- The intersegment sales reflect intra-Group transactions effected at transfer prices fixed on an arm's-length basis.
- Although EBIT before special items and EBITDA before special items are not defined in the International Financial Reporting Standards, they represent key performance indicators for the Bayer Group. The special items comprise effects that are non-recurring or do not regularly recur or attain similar magnitudes. EBITDA is the EBIT as reported in the income statement plus amortization and impairment losses on intangible assets and depreciation and impairment losses on property, plant and equipment, minus impairment loss reversals.
- The gross cash flow comprises income after taxes, plus income taxes, plus financial result, minus income taxes paid or accrued, plus depreciation, amortization and impairment losses, minus impairment loss reversals, plus/minus changes in pension provisions, minus gains/plus losses on retirements of noncurrent assets, minus gains from the remeasurement of already held assets in step acquisitions. The change in pension provisions includes the elimination of non-cash components of EBIT. It also contains benefit payments during the year.
- The net cash flow is the cash flow from operating activities as defined in IAS 7 (Statement of Cash Flows).
- The capital invested and the segment assets include all assets serving the respective segment that are required to yield a return on their cost of acquisition. Segment assets include, in addition, assets held for sale where the return is covered by the sale proceeds. Similarly, the segment liabilities include the liabilities directly related to assets held for sale. Also included in the capital invested and in segment assets are material participating interests of direct relevance to business operations. Intangible assets and property, plant and equipment are included in the capital invested at cost of acquisition or construction throughout their useful lives. Interest-free liabilities are deducted from the capital invested, which is stated as of December 31.
- The CFROI – a measure of the return on the capital employed – is the difference between the gross cash flow and the cost of reproducing depletable assets, divided by the average capital invested for the year.
- The equity items reflect the earnings and carrying amounts of companies accounted for using the equity method.
- Since financial management of Group companies is carried out centrally by Bayer AG, financial liabilities are not directly allocated among the segments. Consequently, the liabilities shown for the individual segments do not include financial liabilities. These are included in the reconciliation.
- The number of employees on either permanent or fixed-term contracts is stated in full-time equivalents (FTE), with part-time employees included on a pro-rated basis in line with their contractual working hours. The figures do not include apprentices.

EFFECTS OF THE FIRST-TIME APPLICATION OF NEW FINANCIAL REPORTING STANDARDS AND OTHER CHANGES IN ACCOUNTING POLICIES ON SEGMENT REPORTING

Segment reporting in 2013 was impacted by the first-time application of the financial reporting standards described in NOTE [3] and by the change in the reporting of long-term stock-based compensation. In 2013 Bayer adjusted the allocation of the stock-based compensation (long-term incentive – LTI) among the segments to increase the transparency and information value of its segment reporting and improve planning and steering processes. A normalized expense based on 100% target attainment is now allocated to the respective operating segments. Higher or lower expenses arising from fluctuations in the performance of Bayer stock are no longer allocated to the operating segments but instead reflected in the reconciliation under Corporate Center and Consolidation. The prior-year figures are restated accordingly.

The effects of the changes in accounting policies on the key segment data are shown in the following table.

Accounting Changes: Key Data by Segment 2012 [Table 4.17]

	2012					
		Accounting changes				
			IFRS 11			
	Before accounting changes	IAS 19R (2011)	Transition to accounting for share in assets and liabilities	Transition to equity method	LTI	After accounting changes
	€ million	€ million	€ million	€ million	€ million	€ million
Net sales	**39,760**	**–**	**(8)**	**(11)**	**–**	**39,741**
Pharmaceuticals	10,803	–	–	(5)	–	10,798
Consumer Health	7,809	–	–	(3)	–	7,806
CropScience	8,383	–	–	–	–	8,383
MaterialScience	11,503	–	(8)	(4)	–	11,491
All other segments	1,259	–	–	1	–	1,260
Corporate Center and consolidation	3	–	–	–	–	3
EBIT	**3,960**	**(3)**	**(27)**	**(2)**	**–**	**3,928**
Pharmaceuticals	1,075	(5)	–	1	33	1,104
Consumer Health	1,079	–	–	(1)	23	1,101
CropScience	1,539	1	–	–	16	1,556
MaterialScience	597	2	(27)	(1)	10	581
All other segments	(82)	(1)	–	(1)	9	(75)
Corporate Center and consolidation	(248)	–	–	–	(91)	(339)
EBIT before special items	**5,671**	**(3)**	**(27)**	**(2)**	**–**	**5,639**
Pharmaceuticals	2,298	(5)	–	1	33	2,327
Consumer Health	1,438	–	–	(1)	23	1,460
CropScience	1,526	1	–	–	16	1,543
MaterialScience	629	2	(27)	(1)	10	613
All other segments	35	(1)	–	(1)	9	42
Corporate Center and consolidation	(255)	–	–	–	(91)	(346)
EBITDA before special items	**8,284**	**(3)**	**1**	**(2)**	**–**	**8,280**
Pharmaceuticals	3,203	(5)	–	1	33	3,232
Consumer Health	1,865	–	–	(1)	23	1,887
CropScience	2,008	1	–	–	16	2,025
MaterialScience	1,251	2	1	(1)	10	1,263
All other segments	207	(1)	–	(1)	9	214
Corporate Center and consolidation	(250)	–	–	–	(91)	(341)

RECONCILIATIONS

The reconciliations of EBITDA before special items, EBIT before special items and EBIT to Group income before income taxes and of the assets and liabilities of the segments to the assets and liabilities, respectively, of the Group are given in the following tables:

Reconciliation of Segments' EBITDA Before Special Items to Group Income Before Income Taxes [Table 4.18]

	2012	2013
	€ million	€ million
EBITDA before special items of segments	8,621	8,876
EBITDA before special items of Corporate Center	(341)	(475)
EBITDA before special items	**8,280**	**8,401**
Depreciation, amortization and impairment losses before special items of segments	(2,636)	(2,624)
Depreciation, amortization and impairment losses before special items of Corporate Center	(5)	(4)
Depreciation, amortization and impairment losses before special items	**(2,641)**	**(2,628)**
EBIT before special items of segments	5,985	6,252
EBIT before special items of Corporate Center	(346)	(479)
EBIT before special items	**5,639**	**5,773**
Special items of segments	(1,718)	(839)
Special items of Corporate Center	7	–
Special items	**(1,711)**	**(839)**
EBIT of segments	4,267	5,413
EBIT of Corporate Center	(339)	(479)
EBIT	**3,928**	**4,934**
Financial result	(752)	(727)
Income before income taxes	**3,176**	**4,207**

2012 figures restated

Reconciliation of Segments' Assets to Group Assets [Table 4.19]

	2012	2013
	€ million	€ million
Assets of the operating segments	**46,050**	**46,336**
Corporate Center assets	265	179
Non-allocated assets	5,003	4,802
Group assets	**51,318**	**51,317**

2012 figures restated

Reconciliation of Segments' Liabilities to Group Liabilities [Table 4.20]

	2012	2013
	€ million	€ million
Liabilities of the operating segments	**18,678**	**17,225**
Corporate Center liabilities	3,410	2,842
Non-allocated liabilities	10,679	10,446
Group liabilities	**32,767**	**30,513**

2012 figures restated

The reconciliation of segment sales to Group sales is apparent from the table of key data by segment in NOTE [1].

INFORMATION ON GEOGRAPHICAL AREAS

The following table provides a regional breakdown of external sales by market and of intangible assets, property, plant and equipment:

Information about Geographical Areas [Table 4.21]

	Net sales (external) – by market		Intangible assets and property, plant and equipment	
	2012	2013	2012	2013
	€ million	€ million	€ million	€ million
Germany	4,640	4,862	12,945	12,806
United States	8,244	8,351	6,097	6,836
China	3,113	3,305	2,396	2,349
Other	23,744	23,639	7,217	6,800
Total	**39,741**	**40,157**	**28,655**	**28,791**

2012 figures restated

INFORMATION ON MAJOR CUSTOMERS

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2013 or 2012.

6. Scope of consolidation; subsidiaries and affiliates

6.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2013 were as follows:

Change in Number of Consolidated Companies [Table 4.22]

	Germany	Other countries	Total
Bayer AG and consolidated companies			
December 31, 2012	63	227	**290**
Changes in scope of consolidation	1	3	**4**
Additions	3	7	**10**
Retirements	(2)	(13)	**(15)**
December 31, 2013	**65**	**224**	**289**

2012 figures restated

The decrease in the number of consolidated companies in 2013 was primarily due to mergers among Group companies.

The Bayer Group holds 100% of the voting rights in the fully consolidated subsidiary Bayer Pearl Polyurethane Systems LLC, United Arab Emirates, pursuant to a contractual agreement with the non-controlling stockholders.

Texas Brine Company LLC, United States, is fully consolidated as a structured entity. The Bayer Group guarantees the liabilities of Texas Brine Company LLC to banks. These liabilities, which are reflected in full in the consolidated statement of financial position, amounted to €22 million as of December 31, 2013 (2012: €27 million).

The above table includes two (2012: two) joint operations, Indurisk Rückversicherung AG, Luxembourg, and Lyondell Bayer Manufacturing Maasvlakte VOF, Netherlands, as of December 31, 2013. Pursuant to IFRS 11, Bayer's shares of these companies' assets, liabilities, revenues and expenses are included in the consolidated financial statements in accordance with Bayer's rights and obligations. The main purpose of Lyondell Bayer Manufacturing Maasvlakte VOF is the joint production of propylene oxide (PO) for Bayer and its partner Lyondell.

Two (2012: two) associated companies and three (2012: three) joint ventures are accounted for in the consolidated financial statements using the equity method. Details of these companies are given in NOTE [19].

A total of 79 (2012: 86) subsidiaries, including one (2012: 0) structured entity and 14 (2012: 14) associates or joint ventures that in aggregate are immaterial to the Bayer Group's financial position and results of operations are not consolidated but recognized at cost. The immaterial subsidiaries accounted for less than 0.3% of Group sales, less than 0.3% of equity and less than 0.2% of total assets.

Details of subsidiary and affiliated companies pursuant to Section 313 of the German Commercial Code can be accessed at WWW.ANNUALREPORT2013.BAYER.COM/EN/COMPANYLIST.PDFX

The following domestic subsidiaries availed themselves in 2013 of certain exemptions granted under Section 264 Paragraph 3 and Section 264b of the German Commercial Code regarding the preparation, auditing and publication of financial statements:

German Exempt Subsidiaries [Table 4.23]

Company Name	Place of Business	Bayer's interest
		%
AgrEvo Verwaltungsgesellschaft mbH	Frankfurt am Main, Germany	100
Bayer 04 Immobilien GmbH	Leverkusen, Germany	100
Bayer 04 Leverkusen Fußball GmbH	Leverkusen, Germany	100
Bayer Altersversorgung GmbH	Leverkusen, Germany	100
Bayer Animal Health GmbH	Leverkusen, Germany	100
Bayer Beteiligungsverwaltung Goslar GmbH	Leverkusen, Germany	100
Bayer Business Services GmbH	Leverkusen, Germany	100
Bayer Chemicals AG	Leverkusen, Germany	100
Bayer Consumer Care Deutschland GmbH	Berlin, Germany	100
Bayer CropScience AG	Monheim am Rhein, Germany	100
Bayer CropScience Deutschland GmbH	Langenfeld, Germany	100
Bayer Direct Services GmbH	Leverkusen, Germany	100
Bayer Gastronomie GmbH	Leverkusen, Germany	100
Bayer Gesellschaft für Beteiligungen mbH	Leverkusen, Germany	100
Bayer HealthCare AG	Leverkusen, Germany	100
Bayer Innovation GmbH	Leverkusen, Germany	100
Bayer Intellectual Property GmbH	Monheim am Rhein, Germany	100
Bayer MaterialScience AG	Leverkusen, Germany	100
Bayer MaterialScience Customer Services GmbH	Leverkusen, Germany	100
Bayer MaterialScience GmbH	Darmstadt, Germany	100
Bayer MaterialScience Oldenburg GmbH & Co. KG	Oldenburg, Germany	100
Bayer Real Estate GmbH	Leverkusen, Germany	100
Bayer Schering Pharma AG	Berlin, Germany	100
Bayer Technology Services GmbH	Leverkusen, Germany	100
Bayer Vital GmbH	Leverkusen, Germany	100
Bayer Weimar GmbH und Co. KG	Weimar, Germany	100
Bayer-Handelsgesellschaft mit beschränkter Haftung	Leverkusen, Germany	100
Chemion Logistik GmbH	Leverkusen, Germany	100
Dritte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Dritte K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100
Epurex Films GmbH & Co. KG	Bomlitz, Germany	100
Erste Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Erste K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100

German Exempt Subsidiaries [Table 4.23 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Euroservices Bayer GmbH	Leverkusen, Germany	100
Fünfte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Generics Holding GmbH	Leverkusen, Germany	100
GP Grenzach Produktions GmbH	Grenzach-Wyhlen, Germany	100
Hild Samen GmbH	Marbach am Neckar, Germany	100
Intendis GmbH	Berlin, Germany	100
Intraserv GmbH & Co. KG	Schönefeld, Germany	100
Jenapharm GmbH & Co. KG	Jena, Germany	100
KOSINUS Grundstücks-Verwaltungsgesellschaft mbH & Co. Gamma OHG	Schönefeld, Germany	100
KVP Pharma+Veterinär Produkte GmbH	Kiel, Germany	100
Marotrast GmbH	Jena, Germany	100
MENADIER Heilmittel GmbH	Berlin, Germany	100
Schering-Kahlbaum Gesellschaft mit beschränkter Haftung	Berlin, Germany	100
Sechste Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Siebte Bayer VV GmbH	Leverkusen, Germany	100
Steigerwald Arzneimittelwerk GmbH	Darmstadt, Germany	100
TECTRION GmbH	Leverkusen, Germany	100
TravelBoard GmbH	Leverkusen, Germany	100
Vierte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Zweite Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Zweite K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100

6.2 Business combinations and other acquisitions

ACQUISITIONS IN 2013

Acquisitions are accounted for by the aquisition method, the results of the acquired businesses therefore being included in the consolidated financial statements as of the respective acquisition dates. The purchase prices of acquired companies domiciled outside the eurozone were translated at the exchange rates in effect at the respective acquisition dates.

Acquisition costs in 2013 amounted to €1,440 million (2012: €502 million). The purchase prices of the acquired companies or businesses were settled mainly in cash. Total goodwill of €801 million (2012: €190 million) arose on these acquisitions. It related principally to the following transactions:

On January 2, 2013, HealthCare wholly acquired the U.S. company Teva Animal Health Inc., headquartered in St. Joseph, Missouri. The acquisition broadens HealthCare's range of anti-infective solutions for livestock and expands the existing product offering to include reproductive hormones. The transaction also adds dermatological products for companion animals, pet wellness products and nutraceuticals to the company's portfolio. The parties agreed on a one-time payment of €38 million plus potential milestone payments, for which an amount of €45 million was included in the purchase price allocation. The milestone payments are mainly dependent on the achievement of various sales targets. The purchase price pertained mainly to product trademarks. Sales of €11 million were recorded since the acquisition date.

On January 18, 2013, CropScience acquired all the shares of PROPHYTA Biologischer Pflanzenschutz GmbH, a leading supplier of biological crop protection products headquartered in Malchow in the German state of Mecklenburg-Western Pomerania. In addition to research and development facilities, the acquisition also includes state-of-the-art production and formulation facilities in the city of Wismar. A purchase price of €25 million was agreed, pertaining mainly to technologies, research and development projects and goodwill. In addition, two related distribution rights were acquired for €5 million. Sales of €4 million were recorded since the acquisition date.

On March 15, 2013, CropScience wholly acquired soybean seed producer Wehrtec Tecnologia Agricola Ltda. and the soybean business of Agricola Wehrmann Ltda. Both companies are headquartered in Cristalina in the Brazilian state of Goiás. This transaction strengthens the soybean research and development activities of CropScience and contributes to the development of varieties tailored to the requirements of Brazilian soybean growers. A purchase price of €34 million was agreed along with potential milestone payments of up to €11 million. The purchase price pertained mainly to marketable crop plants, breeding material and goodwill. Sales of €16 million were recorded since the acquisition date.

In June 2013, HealthCare successfully completed the tender offer for the shares of Conceptus, Inc., currently headquartered in Milpitas, California, United States, and acquired 100% of the outstanding shares. Conceptus, Inc. has developed Essure™, the only non-surgical permanent birth control method, which it markets in the U.S. and other countries. This acquisition enables Bayer to offer an even broader range of short-term, long-term and permanent contraceptive choices for women. A purchase price of €780 million was paid, pertaining mainly to technology and trademark rights. The goodwill remaining after the purchase price allocation is attributable to various factors, including significant cost savings in the marketing and sales functions along with general administration and infrastructure synergies. Sales of €74 million were recorded since the acquisition date.

In April 2013, the District Court of Berlin reached a decision in the court proceeding initiated by former minority stockholders of Bayer Pharma AG (formerly Bayer Schering Pharma AG) to review the adequacy of compensation payments made by Bayer in connection with the domination and profit and loss transfer agreement of 2006. The court decided that the compensation paid by Bayer at the time should be increased by about 40%. Bayer disagrees with this decision and has appealed. The potential supplementary payment represents a subsequent purchase price adjustment according to the March 31, 2004 version of IFRS 3 applicable at the acquisition date. Additional goodwill of €261 million, excluding interest, has been capitalized for this proceeding and for the parallel proceeding relating to the squeeze-out of the former minority stockholders.

On July 1, 2013, HealthCare acquired all the shares of Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany. Steigerwald holds a strong position in the German phytopharmaceuticals market, which is focused on pharmacy-only herbal medicines. Its product portfolio includes Iberogast™ for the treatment of functional gastrointestinal disorders and Laif™ for the treatment of mild to moderate depression. A purchase price of €218 million was agreed, pertaining mainly to product trademarks, technologies and goodwill. Sales of €33 million were recorded since the acquisition date.

On December 2, 2013, CropScience acquired the start-up company FN Semillas S.A. and its parent company Holding Manager S.A., both headquartered in Buenos Aires, Argentina. The necessary regulatory approvals are pending. FN Semillas S.A. specializes in the breeding, production and marketing of improved soybean seeds in Argentina. A purchase price of €25 million was agreed, pertaining mainly to commercial cultivars, germplasm and goodwill.

The purchase price allocations for FN Semillas S.A. and its parent company Holding Manager S.A. currently remain incomplete pending compilation and review of the relevant financial information. It is therefore possible that changes will be made in the allocation of the purchase price to the individual assets and liabilities. The measurement of deferred tax for the Conceptus group also currently remains incomplete. Adjustments may be offset against goodwill.

In 2013 the acquired businesses named above contributed €138 million (of which Conceptus: €74 million) to Bayer Group sales and minus €69 million (of which Conceptus: minus €26 million) to EBIT. Their total income after taxes since the respective dates of their first-time consolidation was minus €57 million (of which Conceptus: minus €25 million). This includes the financing costs incurred since the respective acquisition dates.

If these acquisitions had already been made as of January 1, 2013, the Bayer Group would have had total sales of €40,244 million (of which Conceptus: €120 million) in 2013. Income after taxes would have amounted to €3,171 million (of which Conceptus: minus €46 million), taking into account the effects of the hypothetical financing costs for the full year. Earnings per share would not have been materially affected.

The effects of these and other, smaller transactions made in 2013 – and of purchase price adjustments made in 2013 relating to previous years' transactions – on the Group's assets and liabilities are shown in the table. Net of acquired cash and cash equivalents, the transactions resulted in the following cash outflow:

Acquired Assets and Assumed Liabilities (Fair Values at the Respective Acquisition Dates) [Table 4.24]

	2012	2013	Of which Conceptus, Inc.
	€ million	€ million	€ million
Goodwill	190	801	475
Patents and technologies	254	400	338
Trademarks	15	281	45
R&D projects	80	64	28
Marketing rights	28	–	–
Production rights	4	–	–
Other rights	–	34	14
Software	14	1	1
Property, plant and equipment	13	55	14
Other noncurrent assets	1	1	1
Deferred tax assets	18	101	78
Inventories	36	59	24
Other current assets	15	45	33
Cash and cash equivalents	4	74	58
Provisions for pensions and other post-employment benefits	(1)	(9)	–
Other provisions	(3)	(16)	(10)
Financial liabilities	(1)	(85)	(83)
Other liabilities	(14)	(93)	(76)
Deferred tax liabilities	(151)	(273)	(160)
Net assets	**502**	**1,440**	**780**
Changes in non-controlling interest	–	1	–
Purchase price	**502**	**1,441**	**780**
Acquired cash and cash equivalents	(4)	(74)	(58)
Liabilities for future payments	(34)	(295)	–
Payments for previous years´/ quarters´ acquisitions	5	14	–
Net cash outflow for acquisitions	**469**	**1,086**	**722**

ACQUISITIONS IN 2012

In 2012 the following acquisitions were accounted for in accordance with IFRS 3:

On March 31, 2012, Bayer acquired the remaining 50% interest in the systems house joint venture Baulé S.A.S., France. This joint venture was formed in 2008 by MaterialScience and Michel Baulé S.A., which was later renamed EXIMIUM S.A.S. Baulé S.A.S. is a global leader in the development, formulation and processing of polyurethane cast elastomers. The purchase price of €50 million pertained mainly to customer relationships and goodwill. The income statement of Baulé S.A.S. was included in the consolidated financial statements by proportionate consolidation for the last time in the first quarter of 2012, whereas its assets and liabilities were already fully consolidated as of March 31, 2012. Following the purchase price allocation, the following assets and liabilities were recognized: goodwill (€39 million), other intangible assets (€55 million), other noncurrent assets (€3 million), inventories and other current assets (€21 million), cash and cash equivalents (€5 million), other liabilities (€8 million) and deferred tax liabilities (€16 million). The revaluation of mainly intangible assets that were previously held by the joint venture resulted in other operating income of €19 million. The fair value of the prior interest was €49 million at the time of the acquisition.

On July 2, 2012, CropScience acquired the watermelon and melon seed business of the U.S. company Abbott & Cobb Inc., headquartered in Feasterville, Pennsylvania. Abbott & Cobb has a robust position in the U.S. watermelon market, with increasing business in Mexico, Australia and Asia. The acquisition significantly strengthens the presence of

CropScience in the watermelon and melon market. The melon seed business and the related germplasm add to its existing seed portfolio and provide the basis for new hybrids. A net purchase price of €43 million was agreed, pertaining mainly to germplasm, customer relations and goodwill.

On July 3, 2012, CropScience signed an agreement to purchase the U.S. company AgraQuest, Inc., headquartered in Davis, California. AgraQuest, Inc. is a global supplier of innovative biological pest management solutions based on natural microorganisms. It focuses on discovering, manufacturing and marketing highly effective products for biological pest and disease control to safeguard and increase crop production. The acquisition will help CropScience to build a leading technology platform for biological products and to further strengthen its strategically important fruit and vegetables business. A purchase price of €375 million was agreed, pertaining mainly to the technology platform and goodwill. This amount comprised a one-time payment and potential milestone payments with a total fair value of €31 million.

6.3 Divestitures

DIVESTITURES IN 2013

The effects of divestitures made in 2013 and previous years on the consolidated financial statements for 2013 are detailed below.

On June 1, 2013, MaterialScience sold its global powder polyester resins business and its U.S.-based liquid polyester resins merchant business to Stepan Company of Northfield, Illinois, United States. A purchase price of €45 million was agreed. The divestment gain of €42 million is reported under special items.

The Bayer Group received further revenue-based payments of €25 million in connection with the transfer of the hematological oncology portfolio to Genzyme Corp., United States, effected in May 2009.

The effects in 2013 of the above divestitures, an additional smaller divestiture and the payments received from Genzyme were as follows:

Divestitures [Table 4.25]

	2012	2013
	€ million	€ million
Divested assets and liabilities		
Property, plant and equipment	–	13
Inventories	1	–
Other current assets	–	4
Assets held for sale	70	–
Other provisions	–	(2)
Other liabilities	–	(3)
Divested net assets	**71**	**12**
Non-controlling interest	–	–
Net assets	**71**	**12**
Net cash inflow from divestitures	178	79
Divested net assets	(71)	(12)
Changes in future cash payments receivable	(103)	(25)
Net gain from divestitures (before taxes)	**4**	**42**

DIVESTITURES IN 2012

On April 15, 2012, Bayer entered into an agreement to sell all PET tracer substances to Piramal Imaging SA., Switzerland. This transaction includes the PET tracer florbetaben, which is currently in development for the detection of Alzheimer's disease, the most common form of dementia. Revenue-based milestone and royalty payments were agreed upon.

The agreement with Genzyme Corp., United States, announced in March 2009, comprised the transfer of the hematological oncology portfolio to Genzyme, which was effected in May 2009. We also agreed to transfer the production site

for Leukine after final inspection by the U.S. Food and Drug Administration (FDA). This inspection took place in March 2012. The agreement concerning the sale of the production site including inventories was signed on May 29, 2012. A purchase price of €71 million was agreed.

The Bayer Group received revenue-based payments of €99 million in 2012 in connection with the aforementioned transfer of the hematological oncology portfolio to Genzyme Corp., United States.

Notes to the Income Statements

7. Net sales

Net sales are derived primarily from product deliveries. Total reported net sales rose in 2013 by €416 million, or 1.0%, year on year to €40,157 million. The increase resulted from the following factors:

Factors in Sales Development [Table 4.26]

	2013	
	€ million	%
Volume	1,713	+4.3
Price	330	+0.8
Currency	(1,737)	−4.4
Portfolio	110	+0.3
Total	**416**	**+1.0**

Breakdowns of net sales by segment and by region are given in the table in NOTE [1].

8. Selling expenses

Selling expenses comprise all expenses incurred in the reporting period for the sale, storage and transportation of saleable products, advertising, the provision of advice to customers, and market research. Selling expenses were comprised as follows:

Selling Expenses [Table 4.27]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Internal and external sales force	4,595	4,547
Advertising and customer advice	2,271	2,393
Physical distribution and warehousing of finished products	1,322	1,071
Commission and licensing expenses	680	877
Other selling expenses	1,113	1,192
Total	**9,981**	**10,080**

2012 figures restated

9. Research and development expenses

Research and development expenses and their accounting treatment are defined in NOTE [4]. Breakdowns of research and development expenses by segment and region are given in NOTE [1].

10. Other operating income

Other operating income was comprised as follows:

Other Operating Income [Table 4.28]

	2012	2013
	€ million	€ million
Gains on retirements of noncurrent assets	226	134
Reversals of impairment losses on receivables	28	42
Reversals of unutilized provisions	69	29
Gains from derivative hedging transactions	171	324
Miscellaneous operating income	593	368
Total	**1,087**	**897**
of which special items	288	64

2012 figures restated

Gains from the sale of noncurrent assets included a €42 million gain from the sale of the global powder polyester resins business and the U.S.-based liquid polyester resins merchant business to Stepan Company of Northfield, Illinois, United States. A gain of €22 million was also incurred from the sale of transfer rights at Bayer 04 Leverkusen Fußball GmbH. A gain of €11 million was recorded from the sale of the "Bayer House" administration building in Powdai, India. In the HealthCare subgroup, a gain of €11 million was received from the sale of the French insect repellent Cinq sur Cinq.

The miscellaneous operating income contained a €17 million gain from the sale of the Desmolux product line for UV-curing coating systems to Allnex S.à r.l., Luxembourg, and Allnex Belgium SA, Belgium, and a €16 million gain from the sale of the antibiotic Binotal to Paladin Labs Inc., Canada. Also included here are gains of €41 million from embedded derivatives. The HealthCare subgroup recorded a €13 million gain from the reversal of an impairment loss previously recognized on a patent.

In 2012, gains from the sale of noncurrent assets contained a gain of €158 million from the sale of a parcel of land in India. Also included was a €24 million gain from the sale of the fungicidal active ingredient fluoxastrobin to Arysta LifeScience Corporation, Japan. A gain of €10 million was also incurred from the sale of the insecticidal active ingredient carbaryl to Tessenderlo Kerley, Inc., United States. In the HealthCare subgroup, a gain of €22 million was received from the sale of the oncology product clastoban to Bioprojet Pharma S.A.R.L., France.

The miscellaneous operating income in 2012 included a €16 million impairment loss reversal for a product family in the Pharmaceuticals reporting segment and income of €114 million from adjustments of entitlements to "pension and other post-employment benefits" in the United States. In addition, a gain of €17 million arose from the payment of a break-up fee following termination of the intended acquisition of Schiff Nutrition International, Inc., United States. Also included here was €18 million in compensation payments from insurers following a fire at the Dormagen site.

The following table provides a breakdown of the special items included in other operating income by the function to which they relate:

Breakdown of Special Items by Function [Table 4.29]

	2012	2013
	€ million	€ million
Production-related	8	15
Marketing- and distribution-related	2	–
Research- and development-related	6	–
General-administration-related	–	–
Other	272	49
Total	**288**	**64**

11. Other operating expenses

Other operating expenses were comprised as follows:

Other Operating Expenses [Table 4.30]

	2012	2013
	€ million	€ million
Losses on retirements of noncurrent assets	(26)	(28)
Impairment losses on receivables	(95)	(82)
Expenses related to significant legal risks	(1,298)	(276)
Losses from derivative hedging transactions	(324)	(194)
Miscellaneous operating expenses	(1,227)	(1,040)
Total	**(2,970)**	**(1,620)**
of which special items	(2,005)	(887)

2012 figures restated

The €276 million in expenses for significant legal risks resulted primarily from accounting measures taken in connection with claims concerning Yasmin™/YAZ™ , Cipro™ and Mirena™. The previous year's expenses of €1,298 million mainly related to claims concerning Yasmin™/YAZ™ and litigation concerning genetically modified rice (LL RICE).

The miscellaneous operating expenses included €358 million (2012: €396 million) in restructuring expenses, largely consisting of personnel expenses and impairment losses. Of this amount, €197 million (2012: €182 million) was incurred by the HealthCare subgroup. Restructuring expenses in the CropScience subgroup amounted to €67 million (2012: €83 million) and those at MaterialScience to €36 million (2012: €50 million). The service areas accounted for a further €58 million (2012: €81 million) in restructuring expenses.

The miscellaneous operating expenses also included €184 million in impairment losses recognized on research and development projects and product lines in the HealthCare subgroup. In the previous year they included impairment losses of €175 million on the product name "Medrad" and €130 million on a patent. The HealthCare subgroup also incurred expenses of €76 million for the integration of acquired businesses. Included in addition were expenses of €59 million relating to embedded derivatives. As in the previous year, the remaining amount of miscellaneous operating expenses comprised a large number of individually immaterial items at the subsidiaries.

The following table provides a breakdown of the special items included in other operating expenses by the function to which they relate:

Breakdown of Special Items by Function [Table 4.31]

	2012	2013
	€ million	€ million
Production-related	(183)	(115)
Marketing- and distribution-related	(217)	(73)
Research- and development-related	(48)	(212)
General-administration-related	(60)	(56)
Other	(1,497)	(431)
Total	**(2,005)**	**(887)**

Of the expenses incurred for the restructuring program in the HealthCare subgroup, an amount of €16 million was recognized as a special item in the cost of goods sold and therefore is not reflected in miscellaneous operating expenses.

12. Personnel expenses and employee numbers

Personnel expenses rose in 2013 by €236 million to €9,430 million (2012: €9,194 million), with higher variable compensation and regular salary adjustments accounting for most of this increase.

Personnel Expenses [Table 4.32]

	2012	2013
	€ million	€ million
Salaries	7,371	7,585
Social expenses and expenses for pensions and other benefits	1,823	1,845
of which for defined contribution pension plans	481	487
of which for defined benefit and other pension plans	200	410
Total	**9,194**	**9,430**

2012 figures restated

The personnel expenses shown here do not contain the interest portion of the allocation to personnel-related provisions – mainly for pensions and other post-employment benefits – which is included in the financial result under other financial expenses (NOTE [13.3]).

The average numbers of employees, classified by corporate functions, were as shown in the table below:

Employees [Table 4.33]

	2012	2013
Production	46,830	46,115
Marketing and distribution	42,218	43,652
Research and development	12,990	13,297
General administration	9,092	9,182
Total	**111,130**	**112,246**
Apprentices	2,320	2,364

2012 figures restated

The number of employees on either permanent or fixed-term contracts is stated in full-time equivalents, with part-time employees included on a pro-rated basis in line with their contractual working hours. The figures do not include apprentices.

13. Financial result

The financial result for 2013 was minus €727 million (2012: minus €752 million), comprising an equity-method loss of €16 million (2012: €18 million), financial expenses of €1,100 million (2012: €1,237 million) and financial income of €389 million (2012: €503 million). Details of the components of the financial result are provided below.

13.1 Income (loss) from investments in affiliated companies

The net income (loss) from investments in affiliated companies was comprised as follows:

Income (Loss) from Investments in Affiliated Companies [Table 4.34]

	2012	2013
	€ million	€ million
Net loss from investments accounted for using the equity method (equity-method loss)	(18)	(16)
Expenses		
Impairment losses on investments in affiliated companies	(6)	(2)
Losses from the sale of investments in affiliated companies	(1)	–
Expenses from investments in affiliated companies and from profit and loss transfer agreements (net)	–	–
Gains		
Gains from the sale of investments in affiliated companies	2	77
Total	**(23)**	**59**

2012 figures restated

The income from investments in affiliated companies mainly comprised a €77 million gain from the sale of an investment in Onyx Pharmaceuticals, Inc., United States, and the equity-method loss of €20 million (2012: €21 million) from the associate PO JV, LP, United States.

Further details of the companies accounted for using the equity method are given in NOTE [19].

13.2 Net interest expense

The net interest expense was comprised as follows:

Net Interest Expense [Table 4.35]

	2012	2013
	€ million	€ million
Expenses		
Interest and similar expenses	(587)	(602)
Interest expenses for derivatives (held for trading)	(156)	(54)
Income		
Interest and similar income	317	257
Interest income from derivatives (held for trading)	174	44
Total	**(252)**	**(355)**

Interest and similar expenses included interest expense of €43 million (2012: €29 million) relating to non-financial liabilities. Interest and similar income included interest income of €26 million (2012: €10 million) from non-financial assets.

At the end of April 2013, the District Court of Berlin reached a decision in the court proceeding initiated by former minority stockholders of Bayer Pharma AG (formerly Bayer Schering Pharma AG) to review the adequacy of compensation payments made by Bayer in connection with the domination and profit and loss transfer agreement of 2006. The court decided that the compensation paid by Bayer at the time should be increased by about 40%. Bayer disagrees with this decision and has appealed. Interest expense of €63 million was recognized in 2013 in connection with a potential additional payment.

The change in the liability for redeemable non-controlling interests is reflected in interest income or expense. A €31 million increase (2012: €27 million decrease) in this liability was recognized as interest expense (income).

13.3 Other financial income and expenses

Other financial income and expenses were comprised as follows:

Other Financial Income and Expenses [Table 4.36]

	2012	2013
	€ million	€ million
Expenses		
Interest portion of interest-bearing provisions	(390)	(297)
Exchange loss	(69)	(120)
Miscellaneous financial expenses	(28)	(25)
Income		
Miscellaneous financial income	10	11
Total	**(477)**	**(431)**

2012 figures restated

The interest portion of noncurrent provisions comprised €302 million (2012: €332 million) in interest expense for pension provisions less €5 million (2012: plus €58 million) in effects of interest expense and interest-rate fluctuations for other provisions and corresponding overfunding. The interest expense for pension provisions included €763 million (2012: €862 million) for the unwinding of discount on the present value of the defined benefit obligation and €461 million (2012: €530 million) in interest income from plan assets.

14. Taxes

The breakdown of tax expenses by origin was as follows:

Tax Expense by Origin [Table 4.37]

	2012		2013	
		Of which income taxes		Of which income taxes
	€ million	€ million	€ million	€ million
Taxes paid or accrued				
Income taxes				
Germany	(534)		(795)	
Other countries	(1,026)		(849)	
Other taxes				
Germany	(28)		(43)	
Other countries	(235)		(188)	
	(1,823)	**(1,560)**	**(1,875)**	**(1,644)**
Deferred taxes				
from temporary differences	782		569	
from tax loss carryforwards and tax credits	55		54	
	837	**837**	**623**	**623**
Total	**(986)**	**(723)**	**(1,252)**	**(1,021)**

2012 figures restated

The other taxes mainly include land, vehicle and other indirect taxes. They are reflected in the respective functional cost items.

The deferred tax assets and liabilities were allocable to the following items in the statement of financial position:

Deferred Tax Assets and Liabilities [Table 4.38]

	Dec. 31, 2012		Dec. 31, 2013	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
	€ million	€ million	€ million	€ million
Intangible assets	245	2,427	328	2,217
Property, plant and equipment	69	729	86	639
Financial assets	169	217	181	185
Inventories	585	81	628	37
Receivables	205	451	207	538
Other assets	43	19	19	13
Provisions for pensions and other post-employment benefits	2,735	971	2,044	1,075
Other provisions	1,042	265	933	288
Liabilities	458	52	587	57
Tax loss carryforwards	212	–	313	–
Tax credits	93	–	126	–
	5,856	**5,212**	**5,452**	**5,049**
of which noncurrent	4,643	4,950	4,142	4,692
Set-off	(4,277)	(4,277)	(3,856)	(3,856)
Total	**1,579**	**935**	**1,596**	**1,193**

2012 figures restated

Deferred taxes on remeasurements, recognized outside profit or loss, of the net liability for defined benefit pension and other post-employment benefits diminished equity by €604 million (2012: increased equity by €848 million). Deferred taxes on changes, recognized outside profit or loss, in fair values of available-for-sale financial assets and derivatives designated as cash flow hedges diminished equity by €2 million (2012: €65 million). These effects on equity are reported in the statement of comprehensive income.

The use of tax loss carryforwards reduced the income taxes paid or accrued in 2013 by €62 million (2012: €48 million). The use of tax credits reduced income taxes paid or accrued by €18 million (2012: €20 million).

Of the total tax loss carryforwards of €3,071 million in 2013 (2012: €1,302 million), an amount of €2,127 million (2012: €922 million) is expected to be usable within a reasonable period. The increase in loss carryforwards was mainly due to existing loss carryforwards of acquired companies and tax reassessments for prior years. Deferred tax assets of €313 million (2012: €212 million) were recognized for the amount of loss carryforwards expected to be usable. The deferred tax assets included an amount of €98 million (2012: €18 million) that resulted from purchase price allocations and was recognized outside profit or loss.

The use of €944 million (2012: €380 million) of tax loss carryforwards was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. If these tax loss carryforwards had been fully usable, deferred tax assets of €117 million (2012: €73 million) would have been recognized.

Tax credits of €126 million were recognized in 2013 (2012: €93 million) as deferred tax assets, including €2 million (2012: €0 million) outside profit or loss. The use of €29 million (2012: €49 million) of tax credits was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount.

Unusable tax credits and tax loss carryforwards will expire as follows:

Expiration of Unusable Tax Credits and Tax Loss Carryforwards [Table 4.39]

	Tax credits		Tax loss carryforwards	
	Dec. 31, 2012	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million	€ million	€ million
One year	24	–	–	43
Two years	–	3	43	–
Three years	–	–	–	3
Four years	–	2	–	7
Five years	–	1	–	24
Thereafter	25	23	337	867
Total	**49**	**29**	**380**	**944**

In 2013, subsidiaries that reported losses for 2013 or 2012 recognized net deferred tax assets totaling €757 million (2012: €289 million) from temporary differences and tax loss carryforwards. These assets were considered to be unimpaired because the companies concerned were expected to generate taxable income in the future.

Deferred tax liabilities of €10 million were recognized in 2013 (2012: €23 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for temporary differences on €10,583 million (2012: €10,911 million) of retained earnings of subsidiaries and associates because the Bayer Group is able to control the timing of the difference reversal and the temporary differences will not reverse in the foreseeable future.

The reported tax expense of €1,021 million for 2013 (2012: €723 million) differed by €32 million (2012: €64 million) from the expected tax expense of €1,053 million (2012: €787 million) that would have resulted from applying an expected weighted average tax rate to the pre-tax income of the Group. This average rate, derived from the expected tax rates of the individual Group companies, was 25.0% in 2013 (2012: 24.8%). The effective tax rate was 24.3% (2012: 22.8%).

The reconciliation of expected to reported income tax expense and of the expected to the effective tax rate for the Group was as follows:

Reconciliation of Expected to Actual Income Tax Expense [Table 4.40]

	2012		2013	
	€ million	%	€ million	%
Expected income tax expense and expected tax rate	**787**	**24.8**	**1,053**	**25.0**
Reduction in taxes due to tax-free income				
Income related to the operating business	(140)	(4.4)	(123)	(2.9)
Income from affiliated companies and divestiture proceeds	(16)	(0.5)	(39)	(0.9)
First-time recognition of previously unrecognized deferred tax assets on tax loss carryforwards	(26)	(0.8)	(6)	(0.1)
Use of tax loss carryforwards on which deferred tax assets were not previously recognized	(21)	(0.7)	–	–
Increase in taxes due to non-tax-deductible expenses				
Expenses related to the operating business	135	4.3	173	4.1
Impairment losses on investments in affiliated companies	1	–	1	–
New tax loss carryforwards unlikely to be usable	10	0.3	10	0.2
Existing tax loss carryforwards on which deferred tax assets were previously recognized but which are unlikely to be usable	9	0.3	1	–
Tax income (–) and expenses (+) relating to other periods	(15)	(0.5)	42	1.0
Tax effects of changes in tax rates	(74)	(2.3)	(55)	(1.3)
Other tax effects	73	2.3	(36)	(0.8)
Actual income tax expense and effective tax rate	**723**	**22.8**	**1,021**	**24.3**

2012 figures restated

15. Income/losses attributable to non-controlling interest

Income attributable to non-controlling interest amounted to €1 million (2012: €51 million). Losses attributable to non-controlling interest amounted to €4 million (2012: €1 million). The income in the prior year included the gain from the sale of a parcel of land in India.

16. Earnings per share

Earnings per share are determined according to IAS 33 (Earnings per Share) by dividing net income by the weighted average number of ordinary shares in issue during the year.

Earnings Per Share [Table 4.41]

	2012	2013
	€ million	€ million
Income after taxes	2,453	3,186
of which attributable to non-controlling interest	50	(3)
of which attributable to Bayer AG stockholders (net income)	2,403	3,189
	Shares	Shares
Weighted average number of issued ordinary shares	826,947,808	826,947,808
	€	€
Basic earnings per share	2.91	3.86
Diluted earnings per share	2.91	3.86

2012 figures restated

Notes to the Statements of Financial Position

17. Goodwill and other intangible assets

Changes in intangible assets in 2013 were as follows:

Changes in Intangible Assets [Table 4.42]

	Acquired goodwill	Patents and technologies	Trade-marks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or generation, December 31, 2012	**9,293**	**10,743**	**4,048**	**1,440**	**2,079**	**899**	**2,968**	**31,470**
Changes in scope of consolidation	–	–	–	1	–	–	3	4
Acquisitions	801	400	281	–	–	64	35	1,581
Capital expenditures	–	35	–	117	–	69	162	383
Retirements	–	(185)	(4)	(44)	(13)	(55)	(32)	(333)
Transfers	–	87	–	126	–	(180)	(33)	–
Transfers (IFRS 5)	–	–	–	–	–	–	–	–
Inflation adjustment (IAS 29)	6	–	–	–	–	–	–	6
Remeasurement (IFRS 3)	–	–	–	–	–	–	–	–
Exchange differences	(238)	(59)	(43)	(42)	(4)	(22)	(109)	(517)
December 31, 2013	**9,862**	**11,021**	**4,282**	**1,598**	**2,062**	**775**	**2,994**	**32,594**
Accumulated amortization and impairment losses, December 31, 2012	**–**	**6,082**	**2,107**	**760**	**1,661**	**6**	**2,097**	**12,713**
Changes in scope of consolidation	–	–	–	–	–	–	2	2
Retirements	–	(158)	(2)	(44)	(13)	(55)	(32)	(304)
Amortization and impairment losses in 2013	–	766	180	135	128	186	177	1,572
Amortization	–	737	176	131	114	–	164	1,322
Impairment losses	–	29	4	4	14	186	13	250
Impairment loss reversals	–	(13)	–	–	–	–	–	(13)
Transfers	–	–	–	–	–	–	–	–
Transfers (IFRS 5)	–	–	–	–	–	–	–	–
Exchange differences	–	(24)	(23)	(17)	(3)	(6)	(79)	(152)
December 31, 2013	**–**	**6,653**	**2,262**	**834**	**1,773**	**131**	**2,165**	**13,818**
Carrying amounts, December 31, 2013	**9,862**	**4,368**	**2,020**	**764**	**289**	**644**	**829**	**18,776**
Carrying amounts, December 31, 2012	**9,293**	**4,661**	**1,941**	**680**	**418**	**893**	**871**	**18,757**

2012 figures restated

The capitalized patents and technologies include an amount pertaining to the active ingredient alemtuzumab (product name: Lemtrada) for the treatment of multiple sclerosis. Bayer gave back the worldwide distribution rights for alemtuzumab to Genzyme Corp., United States, in 2009 and in return received global co-promotion rights and an entitlement to royalties and revenue-based milestone payments. On September 16, 2013, Genzyme Corp. received marketing approval for alemtuzumab in Europe. In the course of the approval process for the United States, the FDA issued a Complete Response Letter in December 2013. Bayer has decided not to exercise its co-promotion rights for countries outside of the United States.

Impairment losses of €237 million, net of a €13 million impairment loss reversal, were recognized on other intangible assets. The development activities for an intangible asset in the Pharmaceuticals segment were terminated in light of clinical study results. An impairment loss of €85 million was recognized on this asset. Also in the Pharmaceuticals segment, a €33 million impairment loss was recognized on an intangible asset because of the U.S. FDA's request for the submission of additional data and the resulting delays. In the Consumer Health segment, a €58 million impairment loss was recognized on an asset under development in view of repeated delays to the product's market introduction and the current appraisal of the market environment.

Impairment losses were recognized on further intangible assets in the Pharmaceuticals segment (€25 million), the Consumer Health segment (€23 million), the MaterialScience segment (€12 million) and Other Segments (€1 million).

Details of acquisitions and divestitures are provided in NOTES [6.2] and [6.3]. The impairment testing procedure for goodwill and other intangible assets is explained in NOTE [4].

Changes in intangible assets in 2012 were as follows:

Changes in Intangible Assets (Previous Year) [Table 4.43]

	Acquired goodwill	Patents and technologies	Trade-marks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or generation, December 31, 2011	**9,169**	**10,527**	**4,054**	**1,227**	**2,072**	**791**	**2,789**	**30,629**
Changes in scope of consolidation	–	2	–	–	–	–	1	3
Acquisitions	190	254	15	28	4	80	14	585
Capital expenditures	–	43	–	56	1	163	181	444
Retirements	(21)	(9)	(6)	(9)	–	(4)	(30)	(79)
Transfers	–	(48)	–	122	–	(123)	58	9
Transfers (IFRS 5)	–	–	–	–	–	–	–	–
Inflation adjustment (IAS 29)	2	–	–	–	–	–	–	2
Remeasurement (IFRS 3)	19	–	–	24	4	–	–	47
Exchange differences	(66)	(26)	(15)	(8)	(2)	(8)	(45)	(170)
December 31, 2012	**9,293**	**10,743**	**4,048**	**1,440**	**2,079**	**899**	**2,968**	**31,470**
Accumulated amortization and impairment losses, December 31, 2011	**21**	**5,290**	**1,774**	**655**	**1,547**	**12**	**1,898**	**11,197**
Changes in scope of consolidation	–	–	–	–	–	–	1	1
Retirements	(21)	(6)	(4)	(8)	–	(4)	(28)	(71)
Amortization and impairment losses in 2012	–	891	347	118	116	5	182	1,659
Amortization	–	759	172	110	116	–	175	1,332
Impairment losses	–	132	175	8	–	5	7	327
Impairment loss reversals	–	(16)	–	–	–	(5)	–	(21)
Transfers	–	(70)	–	–	–	(2)	72	–
Transfers (IFRS 5)	–	–	–	–	–	–	–	–
Exchange differences	–	(7)	(10)	(5)	(2)	–	(28)	(52)
December 31, 2012	**–**	**6,082**	**2,107**	**760**	**1,661**	**6**	**2,097**	**12,713**
Carrying amounts, December 31, 2012	**9,293**	**4,661**	**1,941**	**680**	**418**	**893**	**871**	**18,757**
Carrying amounts, December 31, 2011	**9,148**	**5,237**	**2,280**	**572**	**525**	**779**	**891**	**19,432**

2012 figures restated

Changes in the carrying amounts of goodwill for the reporting segments in 2013 and 2012 were as follows:

Goodwill by Reporting Segment [Table 4.44]

	Pharma-ceuticals	Consumer Health	HealthCare	Crop-Science	Material-Science	Bayer Group
	€ million	€ million	€ million	€ million	€ million	€ million
Carrying amounts, January 1, 2012	**4,664**	**2,436**	**7,100**	**1,844**	**204**	**9,148**
Change in scope of consolidation	–	–	–	–	–	–
Acquisitions	–	8	8	162	20	190
Retirements	–	–	–	–	–	–
Impairment losses in 2012	–	–	–	–	–	–
Transfers	1	(1)	–	–	–	–
Transfers (IFRS 5)	–	–	–	–	–	–
Inflation adjustment (IAS 29)	–	2	2	–	–	2
Remeasurement (IFRS 3)	–	–	–	–	19	19
Exchange differences	(17)	(25)	(42)	(23)	(1)	(66)
Carrying amounts, December 31, 2012	**4,648**	**2,420**	**7,068**	**1,983**	**242**	**9,293**
Change in scope of consolidation	–	–	–	–	–	–
Acquisitions	680	95	775	26	–	801
Retirements	–	–	–	–	–	–
Impairment losses in 2013	–	–	–	–	–	–
Transfers	–	–	–	–	–	–
Transfers (IFRS 5)	–	–	–	–	–	–
Inflation adjustment (IAS 29)	–	6	6	–	–	6
Remeasurement (IFRS 3)	–	–	–	–	–	–
Exchange differences	(90)	(86)	(176)	(58)	(4)	(238)
Carrying amounts, December 31, 2013	**5,238**	**2,435**	**7,673**	**1,951**	**238**	**9,862**

2012 figures restated

Goodwill and other intangible assets with an indefinite useful life that are of material significance for the Bayer Group are allocated to the following cash-generating units or unit groups as of the end of the reporting period:

Intangible Assets with Indefinite Useful Life [Table 4.45]

Reporting segment	Cash-generating unit/ unit group	Goodwill	Important intangible assets with indefinite useful life
		€ million	€ million
Pharmaceuticals	Pharmaceuticals	5,238	345
Consumer Health	Radiology & Interventional	1,259	66
Consumer Health	Consumer Care	1,097	84
CropScience	Crop Protection	1,208	76
CropScience	Seeds	383	139

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. Development projects were capitalized at a total amount of €644 million as of the end of 2013 (2012: €893 million).

Another intangible asset classified as having an indefinite useful life 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 €107 million.

PATENTS AND TECHNOLOGIES

The Bayer Group endeavors to obtain patent protection for its products and technologies in the major markets. Depending on the jurisdiction, patent protection may be available for:

- individual active ingredients,
- specific compounds, formulations and combinations containing active ingredients,
- manufacturing processes,
- working methods,
- equipment,
- intermediates for the manufacture of active ingredients and products,
- isolated genes or proteins,
- new uses for existing active ingredients or products,
- material combinations and
- semi-finished products.

The protection that a patent provides varies from country to country, depending on the type of claim granted, the scope of the claim's coverage and the legal remedies available for enforcement.

The Bayer Group currently owns some 67,400 patents or patent applications. Although in our Pharmaceuticals segment the patents on Avalox™/Avelox™, Betaferon™/Betaseron™, Eylea™/Eylia™, Kogenate™, Levitra™, Magnevist™, Mirena™, Nexavar™, Stivarga™, Xarelto™, YAZ™, Yasmin™ and Yasminelle™ are particularly important to our business, we believe that no single patent (or group of related patents) is crucial to our business as a whole.

TERM AND EXPIRATION OF PATENTS

Patents are valid for varying periods, depending on the laws of the jurisdiction granting the patent. In some jurisdictions, patent protection begins from the date a patent application was filed; in others, it begins on the date the patent is granted.

The European Union member countries as well as the United States, Japan and certain other countries extend patent terms or issue supplementary protection certificates to compensate for patent term loss due to regulatory review and for the substantial investments in product research and development. We endeavor to obtain such patent term extensions or supplementary certificates wherever possible. Apart from substance and product patents, we continue to seek

- patents on processes and intermediates used in manufacturing an active ingredient,
- patents relating to specific uses for an active ingredient,
- patents relating to novel compositions and formulations, and
- market exclusivity in countries where this is possible (such as the United States).

The following table sets forth the expiration dates in our major markets of the most important patents covering Adempas™, Avalox™/Avelox™, Betaferon™/Betaseron™, Eylea™/Eylia™, Kogenate™, Levitra™, Magnevist™, Mirena™, Nexavar™, Stivarga™, Xarelto™, Xofigo™, YAZ™, Yasmin™ and Yasminelle™:

Expiration Dates of Most Important Patents [Table 4.46]

	Market								
	Germany	France	U.K.	Italy	Spain	Japan	China	U.S.A.	Canada
Products									
Adempas™									
Active ingredient	2023[a]	2023[a]	2023[a]	2023[a]	2023[a]	2023[a]	2023	2023[a]	2023
Avalox™/Avelox™									
Active ingredient	2014	2014	2014	2014	2014	2014	2013	2014	2015
Active ingredient monohydrate	2016	2016	2016	2016	2016	2016	2016	2016	2016
Tablets	2019	2019	2019	2019	2019	2019	2019	2019	2019
Betaferon™/Betaseron™									
Active ingredient	–	–	–	–	–	–	–	–	2016
Eylea™/Eylia™									
Active ingredient	2020	2020	2020	2020	2020	2020[a]	2020	–	2020
Kogenate™									
Active ingredient	–	–	–	–	–	–	–	2014	2019
Formulation	2017	2017	2017	2017	2017	2017	2017	2017	2017
Levitra™									
Active ingredient	2018	2018	2018	2018	2018	2020	2018	2018	2018
Magnevist™									
Process	–	–	–	–	–	–	–	2013	–
Mirena™									
Inserter	2015	2015	2015	2015	2015	–	2015	2015	2015
Inserter (improved)	2029[d]	2029[d]	2029[d]	2029[d]	2029[d]	2029[b]	2029	2029[b]	2029[b]
Nexavar™									
Active ingredient	2021[c]	2021	2021	2021	2021	2020[a]	2020	2020	2020
Stivarga™									
Active ingredient	2024[a]	2024[a]	2024[a]	2024[a]	2024[a]	2024[a]	2024	2024[e]	2024[b]
Xarelto™									
Active ingredient	2023[c]	2023	2023	2023	2023	2024[c]	2020	2021[a]	2020
Xofigo™									
Application	2019[a]	2019[a]	2019[a]	2019[a]	2019[a]	2019	2019	2020[a]	2019
YAZ™									
Formulation	–	–	–	–	–	2021[f]	2020[g]	–	2020
Dosage regimen	–	–	–	–	–	2014[b]	–	–	2014
Production process	2025	2025	2025	2025	2025	2026	2026	2025	2026[b]
Yasmin™									
Formulation	–	–	–	–	–	2020	2020[g]	–	2020
Production process	2025	2025	2025	2025	2025	2026	2026	2025	2026[b]
Yasminelle™									
Formulation	–	–	–	–	–	2020	2020[g]	–	2020
Production process	2025	2025	2025	2025	2025	2026	2026	2025	2026[b]

[a] current expiration date; extension applied for
[b] patent pending
[c] patent expiration date updated
[d] opposition to EP patent pending
[e] adjustment of patent term under calculation
[f] patent extension confirmed
[g] opposition appeal pending

Information on specific patent disputes is given in NOTE [32].

18. Property, plant and equipment

Changes in property, plant and equipment in 2013 were as follows:

Changes in Property, Plant and Equipment [Table 4.47]

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or construction, December 31, 2012	**8,273**	**16,555**	**1,854**	**1,343**	**28,025**
Changes in scope of consolidation	10	11	5	–	26
Acquisitions	21	15	3	16	55
Capital expenditures	196	406	190	980	1,772
Retirements	(119)	(387)	(162)	(8)	(676)
Transfers	217	360	32	(609)	–
Transfers (IFRS 5)	–	–	–	–	–
Inflation adjustment (IAS 29)	5	2	–	1	8
Remeasurement (IFRS 3)	–	–	–	–	–
Exchange differences	(228)	(406)	(69)	(52)	(755)
December 31, 2013	**8,375**	**16,556**	**1,853**	**1,671**	**28,455**
Accumulated depreciation and impairment losses, December 31, 2012	**4,539**	**12,214**	**1,370**	**4**	**18,127**
Changes in scope of consolidation	12	8	3	–	23
Retirements	(82)	(363)	(144)	(7)	(596)
Depreciation and impairment losses in 2013	276	844	208	9	1,337
Depreciation	264	826	199	–	1,289
Impairment losses	12	18	9	9	48
Impairment loss reversals	–	–	–	–	–
Transfers	2	(1)	(1)	–	–
Transfers (IFRS 5)	–	–	–	–	–
Exchange differences	(117)	(288)	(46)	–	(451)
December 31, 2013	**4,630**	**12,414**	**1,390**	**6**	**18,440**
Carrying amounts, December 31, 2013	**3,745**	**4,142**	**463**	**1,665**	**10,015**
Carrying amounts, December 31, 2012	**3,734**	**4,341**	**484**	**1,339**	**9,898**

2012 figures restated

Impairment losses totaling €48 million were recognized on property, plant and equipment in the MaterialScience segment (€17 million), Other Segments (€14 million), the Consumer Health segment (€7 million), the Pharmaceuticals segment (€7 million) and the CropScience segment (€3 million). They included €14 million resulting from the subgroups' restructuring programs.

In 2013, borrowing costs of €34 million (2012: €20 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 3.8% (2012: 3.8%).

Capitalized property, plant and equipment included assets with a total net value of €439 million (2012: €447 million) held under finance leases. The cost of acquisition or construction of these assets as of the closing date totaled €695 million (2012: €1,185 million). They comprised plant installations and machinery with a carrying amount of €201 million (2012: €204 million), buildings with a carrying amount of €126 million (2012: €126 million) and other property, plant and equipment with a carrying amount of €112 million (2012: €117 million). For information on the liabilities arising from finance leases, see NOTE [27].

In 2013, rental payments of €215 million (2012: €226 million) were made for assets leased under operating leases as defined in IAS 17 (Leases).

Lease payments of €3 million are expected to be received in 2014 from operating leases – as defined in IAS 17 (Leases) – pertaining to property, plant and equipment. Lease payments totaling €7 million are expected to be received in 2015–2018. No lease payments are expected to be received after 2018.

INVESTMENT PROPERTY

The fair values of investment property are mainly determined using the income approach based on internal valuations for buildings and developed sites, and using the market comparison approach for undeveloped sites.

The total carrying amount of investment property as of December 31, 2013, was €173 million (December 31, 2012: €90 million). The fair value of this property was €540 million (2012: €236 million). The rental income from investment property was €20 million (2012: €21 million), and the operating expenses directly allocable to this property amounted to €12 million (2012: €4 million). A further amount of €4 million (2012: €0 million) in operating expenses was directly allocable to investment property from which no rental income was derived.

The increase in the fair value of investment property was mainly due to the classification of further property as investment property and the general rise in the prices of land and buildings.

Changes in property, plant and equipment in 2012 were as follows:

Changes in Property, Plant and Equipment (Previous Year) [Table 4.48]

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or construction, December 31, 2011	**8,361**	**16,264**	**1,792**	**953**	**27,370**
Changes in scope of consolidation	–	–	(2)	1	(1)
Acquisitions	2	10	–	1	13
Capital expenditures	142	321	182	925	1,570
Retirements	(225)	(210)	(123)	(12)	(570)
Transfers	126	345	26	(506)	(9)
Transfers (IFRS 5)	(65)	(14)	(2)	–	(81)
Inflation adjustment (IAS 29)	2	1	–	–	3
Remeasurement (IFRS 3)	–	–	–	–	–
Exchange differences	(70)	(162)	(19)	(19)	(270)
December 31, 2012	**8,273**	**16,555**	**1,854**	**1,343**	**28,025**
Accumulated depreciation and impairment losses, December 31, 2011	**4,490**	**11,668**	**1,315**	**10**	**17,483**
Changes in scope of consolidation	–	–	(2)	–	(2)
Retirements	(196)	(191)	(114)	(10)	(511)
Depreciation and impairment losses in 2012	303	854	188	5	1,350
Depreciation	283	838	188	–	1,309
Impairment losses	20	16	–	5	41
Impairment loss reversals	–	–	–	–	–
Transfers	(1)	5	(5)	1	–
Transfers (IFRS 5)	(18)	(5)	(1)	–	(24)
Exchange differences	(39)	(117)	(11)	(2)	(169)
December 31, 2012	**4,539**	**12,214**	**1,370**	**4**	**18,127**
Carrying amounts, December 31, 2012	**3,734**	**4,341**	**484**	**1,339**	**9,898**
Carrying amounts, December 31, 2011	**3,871**	**4,596**	**477**	**943**	**9,887**

2012 figures restated

19. Investments accounted for using the equity method

Two (2012: two) associated companies and three (2012: three) joint ventures were accounted for using the equity method.

Associated Companies and Joint Ventures Accounted for Using the Equity Method [Table 4.49]

Company Name	Place of Business	Bayer's interest
		%
Associated companies		
Paltough Industries (1998) Ltd.	Kibbutz Ramat Yochanan, Israel	25
PO JV, LP	Wilmington, U.S.A.	39.7
Joint ventures		
Bayer IMSA, S.A. de C.V.	Nuevo Leon, Mexico	50
Bayer Zydus Pharma Private Limited	Mumbai, India	50
DIC Bayer Polymer Ltd.	Tokyo, Japan	50

In 2000 Bayer acquired the polyols business and parts of the propylene oxide (PO) production operations of Lyondell Chemicals with the objective of ensuring access to patented technologies and safeguarding the long-term supply of PO, a starting product for polyurethane. As part of this strategy, a company was established to produce PO (PO JV, LP, United States, in which Bayer holds a 39.7% interest). Bayer benefits from fixed long-term supply quotas/volumes of PO from this company's production. The two following tables contain summarized data from the income statements and statements of financial position of the associated company PO JV, LP, United States, which is accounted for using the equity method, and show the respective amounts recognized in the consolidated financial statements of the Bayer Group.

Income Statement Data of PO JV, LP, Accounted for Using the Equity Method [Table 4.50]

	2012	2013
	€ million	€ million
Net sales	2,242	2,217
Net loss after taxes	(53)	(46)
Share of net loss after taxes	(21)	(18)
Share of total comprehensive income after taxes	**(21)**	**(18)**
Gain (loss) after taxes from impairments/derecognition of other interests	–	(2)
Recognized loss after taxes of PO JV, LP, accounted for using the equity method	**(21)**	**(20)**

2012 figures restated

Data from the Statements of Financial Position of PO JV, LP, Accounted for Using the Equity Method [Table 4.51]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Noncurrent assets	481	441
Current liabilities	4	–
Equity	477	441
Share of equity	**189**	**175**
Other	7	(1)
Carrying amount of PO JV, LP, accounted for using the equity method	**196**	**174**

The item "Other" mainly comprised differences arising from adjustments of data to Bayer's uniform accounting policies, purchase price allocations and their amortization in profit or loss.

The following table contains summarized income statement data of the individually non-material associated company Paltough Industries (1998) Ltd., Israel, which is accounted for using the equity method, and shows its carrying amount in the consolidated financial statements of the Bayer Group.

Income Statement Data and Carrying Amount of Paltough Industries (1998) Ltd. [Table 4.52]

	2012	2013
	€ million	€ million
Income after taxes	9	4
Share of income after taxes	2	1
Share of total comprehensive income after taxes	**2**	**1**
Carrying amount of the investment in Paltough Industries (1998) Ltd., accounted for using the equity method	**19**	**20**

The following table contains the summarized aggregated income statement data of the individually non-material joint ventures accounted for using the equity method and shows their aggregated carrying amount in the consolidated financial statements of the Bayer Group.

Income Statement Data and Carrying Amount of Joint Ventures Accounted for Using the Equity Method [Table 4.53]

	2012	2013
	€ million	€ million
Income after taxes	3	6
Share of income after taxes	2	4
Share of total comprehensive income after taxes	**2**	**4**
Gain (loss) after taxes from impairments/derecognition of other interests	(1)	(1)
Recognized income after taxes of joint ventures accounted for using the equity method	**1**	**3**
Carrying amount of joint ventures accounted for using the equity method	**10**	**9**

2012 figures restated

20. Other financial assets

The other financial assets were comprised as follows:

Other Financial Assets [Table 4.54]

	Dec. 31, 2012		Dec. 31, 2013	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Loans and receivables	842	88	815	67
Available-for-sale financial assets	344	133	298	133
of which debt instruments	235	133	238	133
of which equity instruments	109	–	60	–
Held-to-maturity financial investments	102	10	96	5
Non-derivative held-for-trading financial assets	196	196	–	–
Receivables from derivatives	647	405	765	574
Receivables under lease agreements	34	25	8	–
Total	**2,165**	**857**	**1,982**	**779**

2012 figures restated

The loans and receivables mainly comprised capital with a nominal volume of €595 million (2012: €595 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) with a nominal volume of €150 million (2012: €150 million), also provided to Bayer-Pensionskasse.

The debt instruments reported as available-for-sale financial assets comprised German treasury bills in the amount of €125 million (2012: €125 million). These treasury bills, which were lent to a bank, continue to be recognized as available-for-sale financial assets because the related risks and rewards remain with Bayer. Upon maturity or redemption of the treasury bills, Bayer is obligated to replace them with German government securities until 2016.

The equity instruments reported as available-for-sale financial assets included €22 million (2012: €32 million) in instruments whose fair value could not be determined from a stock exchange or other market price or by discounting reliably determinable future cash flows. These equity instruments were recognized at cost.

In 2013, impairment losses totaling €2 million (2012: €6 million) on available-for-sale financial assets were recognized in profit or loss.

Unimpaired other financial assets of €8 million (2012: €10 million) were past due on the closing date.

Further information on the accounting for receivables from derivatives is given in NOTE [30].

Receivables under lease agreements relate to finance leases where Bayer is the lessor and the economic owner of the leased assets is the lessee. These receivables comprised expected lease payments of €48 million (2012: €75 million), including €40 million (2012: €41 million) in interest. Of the expected lease payments, €1 million (2012: €26 million) is due within one year, €4 million (2012: €4 million) within the following four years and €43 million (2012: €45 million) in subsequent years.

21. Inventories

Inventories were comprised as follows:

Inventories [Table 4.55]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Raw materials and supplies	1,353	1,369
Work in process, finished goods and goods purchased for resale	5,625	5,745
Advance payments	13	15
Total	**6,991**	**7,129**

2012 figures restated

Impairment losses recognized on inventories were reflected in the cost of goods sold. They were comprised as follows:

Impairments of Inventories [Table 4.56]

	2012	2013
	€ million	€ million
Accumulated impairment losses, January 1	**(404)**	**(384)**
Changes in scope of consolidation	–	2
Impairment losses in the reporting period	(208)	(214)
Impairment loss reversals or utilization	223	149
Exchange differences	5	24
Accumulated impairment losses, December 31	**(384)**	**(423)**

2012 figures restated

22. Trade accounts receivable

Trade accounts receivable less impairment losses amounted to €7,569 million (2012: €7,433 million) on the closing date and were comprised as follows:

Trade Accounts Receivable [Table 4.57]

	2012	2013
	€ million	€ million
Trade accounts receivable (before impairments)	7,673	7,769
Accumulated impairment losses	(240)	(200)
Carrying amount, December 31	**7,433**	**7,569**
of which noncurrent	10	18

2012 figures restated

Changes in impairment losses on trade accounts receivable were as follows:

Impairments of Trade Accounts Receivable [Table 4.58]

	2012	2013
	€ million	€ million
Accumulated impairment losses, January 1	**(243)**	**(240)**
Changes in scope of consolidation	–	–
Impairment losses in the reporting period	(66)	(66)
Impairment loss reversals or utilization	60	85
Exchange differences	9	21
Accumulated impairment losses, December 31	**(240)**	**(200)**

Trade accounts receivable amounting to €7,499 million (2012: €7,322 million) were not individually impaired. Of this amount, €1,222 million (2012: €1,095 million) was past due or due immediately on the closing date.

The amounts of impaired and past-due trade accounts receivable are summarized in the following table:

Impaired and Past-Due Trade Accounts Receivable [Table 4.59]

	Carrying amount	Of which neither impaired nor past due at the closing date	Of which unimpaired but past due at the closing date				Of which impaired at the closing date
			up to 3 months	3–6 months	6–12 months	more than 12 months	
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
December 31, 2013	7,569	6,277	848	130	104	140	70
December 31, 2012	7,433	6,227	743	144	104	104	111

2012 figures restated

The gross carrying amount of individually impaired trade accounts receivable was €193 million (2012: €248 million). The impairment losses recognized on these assets totaled €123 million (2012: €137 million), resulting in a net carrying amount of €70 million (2012: €111 million).

The unimpaired receivables were deemed to be collectible on the basis of established credit management processes and individual assessments of customer risks. The impairment losses recognized included an appropriate allowance for the default risk as of the end of the reporting period.

Receivables from government health service institutions, especially in Greece, Italy, Portugal and Spain, are under special observation in view of the government debt crisis. Although there were no material defaults on such receivables in 2013 or 2012, it is possible that future developments in these countries could result in payment delays and/or defaults. This could necessitate the recognition of impairment losses due to new occurrences. Trade accounts receivable from government health service institutions in the above countries at the end of 2013 totaled €231 million (2012: €240 million).

An excess-of-loss policy exists for the HealthCare subgroup as part of a global credit insurance program. More than 80% of the receivables of the HealthCare subgroup are insured up to a maximum total annual compensation payment of €100 million. A further €438 million of receivables was secured by advance payments, letters of credit or guarantees or by liens on land, buildings or harvest yields.

23. Other receivables

Other receivables, after impairment losses of €4 million (2012: €60 million), were comprised as follows:

Other Receivables [Table 4.60]

	Dec. 31, 2012		Dec. 31, 2013	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Benefit plan assets in excess of obligation	27	–	117	–
Receivables from employees	43	43	41	41
Other tax receivables	562	474	577	504
Deferred charges	232	205	269	240
Reimbursement claims	607	599	321	321
Miscellaneous receivables	725	334	647	370
Total	**2,196**	**1,655**	**1,972**	**1,476**

2012 figures restated

The reimbursement claims of €321 million (2012: €607 million) consisted mainly of receivables from insurance companies in connection with product liability claims.

Of the €526 million (2012: €634 million) in financial receivables included in other receivables, €524 million (2012: €606 million) was unimpaired. Of this amount, €204 million (2012: €221 million) was past due or due immediately on the closing date. The gross carrying amount of individually impaired other receivables was €6 million (2012: €88 million). The impairment losses recognized on these assets totaled €4 million (2012: €60 million), resulting in a net carrying amount of €2 million (2012: €28 million).

The amounts of impaired and past-due financial receivables included in other receivables are summarized in the following table:

Impaired and Past-Due Other Financial Receivables [Table 4.61]

		Of which neither impaired nor past due at the closing date	Of which unimpaired but past due at the closing date				Of which impaired at the closing date
	Carrying amount		up to 3 months	3–6 months	6–12 months	more than 12 months	
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
December 31, 2013	526	320	148	12	18	26	2
December 31, 2012	634	385	172	17	13	19	28

2012 figures restated

24. Equity

The foremost objectives of our financial management are to help bring about a sustained increase in the value of the Bayer Group 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 rating agencies commissioned by Bayer assess the creditworthiness of the Bayer Group as follows:

Rating [Table 4.62]

	Long-term rating	Outlook	Short-term rating
Standard & Poor's	A–	positive	A–2
Moody's	A3	positive	P–2

These investment-grade ratings reflect the company's good creditworthiness and ensure access to a broad investor base for financing purposes. Bayer's capital management strategy is based on the debt ratios published by the rating agencies, which – by somewhat differing methods – look at the cash flow for a given period in relation to debt. The financial strategy of the Bayer Group focuses on an "A" rating and on preserving our financial flexibility. Apart from utilizing cash inflows from our operating business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as the subordinated hybrid bond issued in July 2005, the authorized and conditional capital amounts created by resolutions of the Annual Stockholders' Meeting, and a potential share buyback program. Bayer's Articles of Incorporation do not stipulate capital ratios.

The changes in the various components of equity during 2012 and 2013 are shown in the consolidated statements of changes in equity.

CAPITAL STOCK

The capital stock of Bayer AG on December 31, 2013 amounted to €2,117 million (2012: €2,117 million), divided into 826,947,808 (2012: 826,947,808) registered shares, and was fully paid in. Each share confers one voting right.

AUTHORIZED CAPITAL

Authorized capital of €530 million was approved by the Annual Stockholders' Meeting on April 30, 2010. It expires on April 29, 2015. It can be used to increase the capital stock by issuing new no-par registered shares against cash contributions and/or contributions in kind, but capital increases against contributions in kind may not exceed a total of €423 million (Authorized Capital I). Stockholders must normally be granted subscription rights. However, subject to the approval of the Supervisory Board, the Board of Management is authorized to exclude subscription rights for the stockholders with respect to any excess shares remaining after rights have been allocated (fractional amounts) and also to the extent necessary to grant subscription rights for new shares to holders of bonds with optional or mandatory warrants or conversion rights issued by Bayer AG or its Group companies who would be entitled to subscription rights upon the exercise of such optional or mandatory warrants or conversion rights. In addition, the Board of Management is authorized to exclude stockholders' subscription rights, subject to the approval of the Supervisory Board, in cases where an increase in capital against contributions in kind is carried out for the purpose of acquiring companies, parts of companies, participating interests in companies or other assets. The amount of capital stock represented by shares issued in the above cases against cash contributions and/or contributions in kind without granting subscription rights to the stockholders must not exceed a total of 20% of the capital stock that existed on the date the authorized capital was approved by the Annual Stockholders' Meeting.

Further authorized capital was approved by the Annual Stockholders' Meeting on April 30, 2010. The Board of Management is authorized until April 29, 2015 to increase the capital stock, subject to the approval of the Supervisory Board, by a total amount of up to €212 million by issuing new no-par registered shares against cash contributions (Authorized Capital II). Under the resolution adopted by the Annual Stockholders' Meeting, stockholders must normally be granted subscription rights. However, the Board of Management is authorized to exclude subscription rights for stockholders with respect to one or more capital increases out of the Authorized Capital II, subject to the approval of the Supervisory Board, provided that such capital increase or the total of such capital increases does not exceed 10% of the capital stock existing at the time this authorization becomes effective or the time it is exercised, for purposes of issuing new shares against cash contributions at a price that is not significantly below the market price of the company's shares of the same category that are already listed on the stock exchange on the date the issue price is finally determined. Any treasury shares acquired on the basis of an authorization of the Stockholders' Meeting and sold pursuant to Section 71 Paragraph 1 No. 8 Sentence 5 of the German Stock Corporation Act in conjunction with Section 186 Paragraph 3 Sentence 4 of the German Stock Corporation Act during the term of this authorization shall count toward the above 10% limit. Shares issued or to be issued to service bonds with optional or mandatory warrants or conversion rights shall also count toward this limit where such bonds were issued during the term of this authorization and stockholders' subscription rights were excluded by application of Section 186 Paragraph 3 Sentence 4 of the German Stock Corporation Act.

Neither of these authorized capital amounts has been utilized so far.

CONDITIONAL CAPITAL

The Annual Stockholders' Meeting on April 30, 2010 approved the creation of Conditional Capital 2010, authorizing a conditional increase of up to €212 million in the capital stock through the issuance of up to 82,694,750 shares. This conditional capital increase may be used to grant registered shares to the holders of warrant bonds, convertible bonds, jouissance rights (Genussrechte) or profit participation bonds (or combinations of these instruments) with optional or mandatory warrants or conversion rights, issued by Bayer AG or a Group company in which Bayer AG holds a direct or indirect interest of at least 90% on or before April 29, 2015 in accordance with authorizations granted by the Annual Stockholders' Meeting of April 30, 2010. The authorization to issue such instruments is limited to a total nominal amount of €6 billion. In principle, stockholders have a statutory right to be granted subscription rights to such instruments. However, the Board of Management is authorized to exclude subscription rights, subject to the approval of the Supervisory Board, if the instruments are issued at a price that is not significantly below the market price. The limit of 10% of the capital stock for the exclusion of stockholders' subscription rights in analogous application of Section 186 Paragraph 3 Sentence 4 of the German Stock Corporation Act may not be exceeded. Both shares and other such instruments shall count toward this limit if they were issued without granting subscription rights to the stockholders in direct or analogous application of Section 186 Paragraph 3 Sentence 4 of the German Stock Corporation Act.

Absent a further resolution of the Annual Stockholders' Meeting on the exclusion of stockholders' subscription rights, the Board of Management will only use the existing authorizations to increase the capital stock out of the Authorized Capital or the Conditional Capital – without granting subscription rights to the stockholders – up to a total amount of 20% of the capital stock that existed when the respective resolutions were adopted by the Annual Stockholders' Meeting on April 30, 2010. This 20% limit includes all issuances or sales of shares or of bonds with optional or mandatory warrants or conversion rights that are effected without granting subscription rights to the stockholders.

ACCUMULATED COMPREHENSIVE INCOME

Accumulated comprehensive income comprises retained earnings and accumulated other comprehensive income. The retained earnings include prior years' undistributed income of consolidated companies and all remeasurements of the net liability for defined benefit pension and other post-employment benefit plans that are recognized outside profit or loss. The accumulated other comprehensive income comprises exchange differences, the changes in fair values of cash flow hedges and available-for-sale financial assets, and the revaluation surplus. The latter results from the acquisition in 2005 of the remaining 50% interest in an OTC joint venture with Roche in the United States that was established in 1996 and the acquisition in 2008 of the remaining 50% interest in Bayer MaterialScience Oldenburg GmbH & Co. KG, Oldenburg, Germany. In 2013, an amount of €5 million (2012: €5 million) corresponding to the annual amortization/depreciation of the respective assets was transferred from the revaluation surplus to retained earnings. The exchange differences included an amount of €12 million (2012: €2 million) attributable to associated companies and joint ventures accounted for using the equity method.

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 €1.90 per share for 2012. The proposed dividend for the 2013 fiscal year is €2.10 per share, which would result in a total dividend payment of €1,737 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.

NON-CONTROLLING INTEREST

The changes in the non-controlling interest in Group equity during 2012 and 2013 are shown in the following table:

Components of Non-Controlling Interest in Equity [Table 4.63]

	2012	2013
	€ million	€ million
January 1	**59**	**100**
Changes in equity not recognized in profit or loss		
Exchange differences on translation of operations outside the eurozone	(4)	(14)
Other changes in equity	(3)	6
Dividend payments	(2)	(3)
Changes in equity recognized in profit or loss	**50**	**(3)**
December 31	**100**	**86**

Non-controlling interests exist mainly in the equities of Bayer CropScience Limited, India; Bayer Jinling Polyurethane Co. Ltd., China; Bayer Pearl Polyurethane Systems FZCO, United Arab Emirates; Bayer East Africa Ltd., Kenya; and Sumika Bayer Urethane Co. Ltd., Japan.

25. Provisions for pensions and other post-employment benefits

The provisions for defined benefit obligations pertaining to pensions and other post-employment benefits were as follows:

Provisions for Defined Benefit Obligations [Table 4.64]

	Pensions		Other post-employment benefits		Total	
	Dec. 31, 2012	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million	€ million	€ million	€ million	€ million
Germany	7,430	6,230	–	–	7,430	6,230
Other countries	1,346	807	470	331	1,816	1,138
Total	**8,776**	**7,037**	**470**	**331**	**9,246**	**7,368**

2012 figures restated

The expenses for defined benefit plans for pension and other post-employment benefits comprised the following components:

Expenses for Defined Benefit Plans [Table 4.65]

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
	2012	2013	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Current service cost	193	287	68	71	261	358	21	22
Past service cost	30	30	6	2	36	32	(58)	(1)
of which plan curtailments	–	–	*1*	*1*	*1*	*1*	*(3)*	*(1)*
Plan settlements	–	–	(63)	(1)	(63)	(1)	1	–
Net interest	259	233	46	48	305	281	27	21
Total	**482**	**550**	**57**	**120**	**539**	**670**	**(9)**	**42**

2012 figures restated

In addition, a total of €1,946 million (2012: minus €2,779 million) in effects of remeasurements of the net defined benefit liability was recognized outside profit or loss in 2013. Of this amount, €1,810 million (2012: minus €2,822 million) related to pension obligations and €135 million (2012: €44 million) to other post-employment benefit obligations.

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The net defined benefit liability developed as follows:

Changes in Net Defined Benefit Liability [Table 4.66]

	Pension obligations							Other post-employment benefit obligations	
	Germany		Other countries			Total		Other countries	
	2012	2013	2012	2013		2012	2013	2012	2013
	€ million	€ million	€ million	€ million		€ million	€ million	€ million	€ million
Defined benefit obligation as of January 1	**12,873**	**16,049**	**5,459**	**5,717**		**18,332**	**21,766**	**891**	**822**
Acquisitions	–	9	1	–		1	9	–	–
Divestitures/changes in scope of consolidation	(31)	25	(4)	–		(35)	25	–	(1)
Current service cost	193	287	68	71		261	358	21	22
Interest cost	573	509	248	221		821	730	41	33
Employee contributions	35	35	6	6		41	41	–	–
Past service cost	30	30	5	1		35	31	(55)	–
Plan curtailments	–	–	1	1		1	1	(3)	(1)
Plan settlements	–	–	(336)	–		(336)	–	1	–
Net actuarial (gain) loss	2,985	(1,453)	596	(392)		3,581	(1,845)	(13)	(81)
of which due to changes in financial assumptions	*2,875*	*(1,485)*	*478*	*(365)*		*3,353*	*(1,850)*	*61*	*(86)*
of which due to changes in demographic assumptions	–	–	*55*	*6*		*55*	*6*	*(21)*	*1*
of which due to experience adjustments	*110*	*32*	*63*	*(33)*		*173*	*(1)*	*(53)*	*4*
Benefits paid out of plan assets	(208)	(209)	(242)	(251)		(450)	(460)	(22)	(10)
Benefits paid by the company	(401)	(412)	(36)	(31)		(437)	(443)	(17)	(12)
Exchange differences	–	–	(49)	(252)		(49)	(252)	(22)	(51)
Defined benefit obligation as of December 31	**16,049**	**14,870**	**5,717**	**5,091**		**21,766**	**19,961**	**822**	**721**
Fair value of plan assets as of January 1	**6,927**	**8,640**	**4,264**	**4,390**		**11,191**	**13,030**	**336**	**352**
Acquisitions	–	–	–	–		–	–	–	–
Divestitures/changes in scope of consolidation	(25)	21	–	–		(25)	21	–	–
Interest income	314	276	202	173		516	449	14	12
Return on plan assets excluding amounts recognized as interest income	411	(114)	348	79		759	(35)	31	54
Plan settlements	–	–	(273)	(1)		(273)	(1)	–	–
Employer contributions	1,186	86	131	117		1,317	203	–	3
Employee contributions	35	35	6	6		41	41	–	–
Benefits paid	(208)	(209)	(242)	(251)		(450)	(460)	(22)	(10)
Exchange differences	–	–	(46)	(201)		(46)	(201)	(7)	(18)
Fair value of plan assets as of December 31	**8,640**	**8,735**	**4,390**	**4,312**		**13,030**	**13,047**	**352**	**393**
Funded status as of December 31	**(7,409)**	**(6,135)**	**(1,327)**	**(779)**		**(8,736)**	**(6,914)**	**(470)**	**(328)**
Effects of the asset ceiling as of January 1	**–**	**–**	**(16)**	**(13)**		**(16)**	**(13)**	**–**	**–**
Newly arisen during the year/other changes	–	–	1	1		1	1	–	–
Exchange differences	–	–	2	3		2	3	–	–
Effects of the asset ceiling as of December 31	**–**	**–**	**(13)**	**(9)**		**(13)**	**(9)**	–	–
Net defined benefit liability as of December 31	**(7,409)**	**(6,135)**	**(1,340)**	**(788)**		**(8,749)**	**(6,923)**	**(470)**	**(328)**
of which benefit plan assets in excess of obligation (net assets)	21	95	6	19		27	114	–	3
of which provisions for pensions and other post-employment benefits (net liability)	(7,430)	(6,230)	(1,346)	(807)		(8,776)	(7,037)	(470)	(331)

2012 figures restated

The benefit obligations pertained mainly to Germany (72%; 2012: 71%), the United States (14%; 2012: 15%) and the United Kingdom (7%; 2012: 6%).

The actual return on the assets of defined benefit plans for pensions or other post-employment benefits amounted to €414 million (2012: €1,275 million) and €66 million (2012: €45 million), 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.

Defined Benefit Obligation and Funded Status [Table 4.67]

	Pension obligations		Other post-employment benefit obligations		Total	
	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million
Defined benefit obligations	**21,766**	**19,961**	**822**	**721**	**22,588**	**20,682**
of which unfunded	849	794	120	95	969	889
of which funded	20,917	19,167	702	626	21,619	19,793
Funded status of funded obligations						
Overfunding	41	124	–	3	41	127
Underfunding	7,928	6,244	350	236	8,278	6,480

2012 figures restated

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 way these benefits are provided varies according to the legal, fiscal and economic conditions of each country, the benefits generally being based on employee compensation and years of service. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

The Bayer Group 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. For example, the proportion of plan assets invested in equities is greater with the non-German pension plans than with the plans domiciled in Germany. The investment strategies are generally aligned less toward maximizing absolute returns and more toward the reasonable assurance of financing pension commitments over the long term. For plan assets, stress scenarios are simulated and other risk analyses (such as value at risk) undertaken with the aid of risk management systems.

Bayer-Pensionskasse VVaG (Bayer-Pensionskasse), Leverkusen, Germany, is by far the most significant of the pension plans. It was closed to new members effective January 1, 2005. This legally independent fund is regarded as a life insurance company and is therefore subject to the German Insurance Supervision Act. The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents' and disability pensions. It constitutes a 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 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 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. 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 on or after January 1, 2005 are granted via Rheinische Pensionskasse VVaG, Leverkusen. Future pension payments from this plan are based on contributions and the return on plan assets; a guaranteed interest rate applies.

Another important pension provision vehicle is Bayer Pension Trust e.V. (BPT). This covers further retirement provision arrangements of the Bayer Group, deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e.V., and components of other direct commitments.

The defined benefit pension plans in the United States have been frozen for some years, and no significant new entitlements can be earned under these plans. The assets of all the U.S. 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 2012, all former employees of U.S. companies who had not yet reached retirement age were offered a lump-sum payment. Acceptances of this offer reduced the defined benefit obligation by €334 million and plan assets by €273 million.

The defined benefit pension plans in the United Kingdom are closed to new members. Plan assets in the U.K. 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 U.K. 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 related to retirees' health care benefit payments in the United States.

The fair value of the plan assets to cover pensions and other post-employment benefit obligations was as follows:

Plan Assets to Cover Pension Obligations as of December 31 [Table 4.68]

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
	2012	2013	2012	2013	2012	2013
	€ million	€ million	€ million	€ million	€ million	€ million
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	155	168	14	16
Equities and equity funds	1,310	1,724	1,560	1,490	137	110
Callable debt instruments	–	–	151	146	3	–
Non-callable debt instruments	–	–	439	952	75	155
Bond funds	2,065	2,911	1,101	755	64	6
Derivatives	27	8	46	89	6	1
Cash and cash equivalents	1,251	369	86	115	9	14
Other	–	–	361	236	–	–
	4,653	**5,012**	**3,899**	**3,951**	**308**	**302**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	518	532	40	36	–	–
Equities and equity funds	49	51	53	52	–	–
Callable debt instruments	1,277	1,213	7	8	–	–
Non-callable debt instruments	1,880	1,678	19	–	–	–
Bond funds	–	–	54	50	–	–
Derivatives	1	–	–	–	–	–
Other	262	249	318	215	44	91
	3,987	**3,723**	**491**	**361**	**44**	**91**
Total plan assets	**8,640**	**8,735**	**4,390**	**4,312**	**352**	**393**

The fair value of plan assets in Germany included real estate leased by Bayer, recognized at a fair value of €67 million (2012: €71 million), and Bayer shares held through investment funds, recognized at their fair value of €49 million (2012: €37 million). The other plan assets comprise 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. The risks lie in the possibility that higher direct pension payments will have to be made to the beneficiaries and/or that additional contributions will have to be made to plan assets in order to meet current and future pension obligations.

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, default of individual debtors or the purchase of low-risk but low-interest bonds, for example.

Interest-rate risks

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 debt instruments held.

MEASUREMENT PARAMETERS AND THEIR SENSITIVITIES

The following weighted parameters were used to measure the pension obligations as of December 31 and the expense for pensions and other post-employment benefits in the respective year:

Parameters for Benefit Obligations [Table 4.69]

	Germany		Other countries		Total	
	2012	2013	2012	2013	2012	2013
	%	%	%	%	%	%
Pension obligations						
Discount rate	3.20	3.80	4.05	4.70	3.45	4.05
of which U.S.A.			3.60	4.50	3.60	4.50
of which U.K.			4.40	4.60	4.40	4.60
Projected future salary increases	3.00	3.00	3.85	3.95	3.20	3.25
Projected future benefit increases	1.75	1.75	3.20	3.60	2.15	2.20
Other post-employment benefit obligations						
Discount rate	–	–	4.15	4.90	4.15	4.90

2012 figures restated

In Germany the Heubeck 2005 G mortality tables were used, in the United States the RP-2000 Combined Healthy Mortality Tables, and in the United Kingdom 95% of S1NXA.

Parameters for Benefit Expense [Table 4.70]

	Germany		Other countries		Total	
	2012	2013	2012	2013	2012	2013
	%	%	%	%	%	%
Pension obligations						
Discount rate	4.50	3.20	4.60	4.05	4.50	3.45
Projected future salary increases	3.00	3.00	3.65	3.85	3.20	3.20
Projected future benefit increases	1.75	1.75	3.15	3.20	2.15	2.15
Other post-employment benefit obligations						
Discount rate	–	–	4.80	4.15	4.80	4.15

2012 figures restated

The parameter sensitivities were computed by expert actuaries based on a detailed evaluation similar to that performed to obtain the data presented in Table 4.66. Altering individual parameters by 0.5 percentage points (mortality by 10 percent per beneficiary) while leaving the other parameters unchanged would have impacted pension and other post-employment benefit obligations as of year end 2013 as follows:

Sensitivity of Benefit Obligations [Table 4.71]

	Germany		Other countries		Total	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
	€ million	€ million	€ million	€ million	€ million	€ million
Pension obligations						
0.5%-pt. change in discount rate	(1,053)	1,191	(330)	369	(1,383)	1,560
0.5%-pt. change in projected future salary increases	89	(82)	47	(44)	136	(126)
0.5%-pt. change in projected future benefit increases	726	(667)	84	(70)	810	(737)
10% change in mortality	(416)	461	(116)	120	(532)	581
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(35)	39	(35)	39
10% change in mortality	–	–	(16)	18	(16)	18

Provisions are also set up for the obligations, mainly of U.S. subsidiaries, to provide post-employment benefits in the form of health care cost payments to retirees. The valuation of health care costs was based on the assumption that they will increase at a rate of 7.5% (assumption in 2012: 8.0%), which should gradually decline to 5.0% (2012: 5.0%) by 2018. 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:

Sensitivity to Health Care Cost Increases [Table 4.72]

	Increase of one percentage point	Decrease of one percentage point
	€ million	€ million
Impact on other post-employment benefit obligations	60	(51)
Impact on benefit expense	4	(4)

PAYMENTS MADE AND EXPECTED FUTURE PAYMENTS

The following payments correspond to the employer contributions made or expected to be made to funded benefit plans:

Employer Contributions Paid or Expected [Table 4.73]

	Germany			Other countries		
	2012	2013	2014 expected	2012	2013	2014 expected
	€ million	€ million	€ million	€ million	€ million	€ million
Pension obligations	1,186	86	143	131	117	93
Other post-employment benefit obligations	–	–	–	–	3	7
Total	**1,186**	**86**	**143**	**131**	**120**	**100**

Bayer has currently committed to make annual deficit contributions through 2016 amounting to GBP21 million for its U.K. pension plans and will likely have to make annual payments of US$50 million for its U.S. pension plans over the same period.

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

Future Benefit Payments [Table 4.74]

	Out of plan assets				By the company			
	Pensions		Other post-employment benefits		Pensions		Other post-employment benefits	
	Germany	Other countries	Other countries	Total	Germany	Other countries	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
2014	210	241	10	461	438	52	38	528
2015	211	249	9	469	443	48	32	523
2016	214	260	10	484	451	53	34	538
2017	216	273	9	498	460	58	35	553
2018	220	286	10	516	466	60	37	563
2019–2023	1,168	1,521	52	2,741	2,424	329	206	2,959

The weighted average term of the pension obligations is 15.0 years in Germany and 12.8 years in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 11.2 years.

26. Other provisions

Changes in the various provision categories in 2013 were as follows:

Changes in Other Provisions [Table 4.75]

	Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
December 31, 2012	**861**	**283**	**307**	**1,314**	**1,664**	**2,255**	**271**	**6,955**
Changes in scope of consolidation	1	(2)	–	1	–	8	11	19
Additions	1,505	37	146	3,400	346	1,968	302	7,704
Utilization	(1,026)	(33)	(189)	(2,698)	(981)	(1,675)	(248)	(6,850)
Reversal	(137)	(24)	(15)	(387)	(54)	(164)	(45)	(826)
Interest cost	–	–	–	–	–	(4)	3	(1)
Exchange differences	(56)	(11)	(7)	(100)	(41)	(63)	(19)	(297)
December 31, 2013	**1,148**	**250**	**242**	**1,530**	**934**	**2,325**	**275**	**6,704**

2012 figures restated

The provisions recognized in the statement of financial position as of December 31, 2013 were expected to be utilized as follows:

Expected Utilization of Other Provisions [Table 4.76]

	Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
2014	641	50	176	1,429	722	1,510	199	4,727
2015	4	23	23	81	112	205	17	465
2016	–	20	16	14	40	157	2	249
2017	301	5	11	3	–	112	2	434
2018	2	5	4	2	3	66	–	82
2019 or later	200	147	12	1	57	275	55	747
Total	**1,148**	**250**	**242**	**1,530**	**934**	**2,325**	**275**	**6,704**

The provisions were partly offset by claims for refunds in the amount of €318 million (2012: €594 million), which were recognized as receivables. These claims related principally to product liability and environmental protection measures.

26.1 Taxes

Provisions for taxes comprised provisions for income taxes amounting to €1,079 million (2012: €725 million) and provisions for other types of taxes amounting to €69 million (2012: €136 million).

Further income tax commitments according to IAS 12 (Income Taxes) existed at year end in the amount of €101 million (2012: €72 million), recognized in the statement of financial position as income tax liabilities.

26.2 Environmental protection

Provisions for environmental protection mainly related to the rehabilitation of contaminated land, recultivation of landfills, and redevelopment and water protection measures.

26.3 Restructuring

Provisions for restructuring included €189 million (2012: €237 million) for severance payments and €53 million (2012: €70 million) for other restructuring expenses, which mainly comprised other costs related to the closure of production facilities.

A restructuring program was launched in the HealthCare subgroup in November 2010 to improve its efficiency for the long term. The measures, which related to all functional areas, were designed to produce sustained cost savings and ensure a shift in the subgroup's activities from the mature markets toward the emerging markets. Significant individual restructuring measures have taken place in Germany, Japan, France and the United States. The focus in 2013 was on the reorganization of the Medical Care and Dermatology businesses. Provisions were also established for the integration of acquired businesses. Provisions for the above and other restructuring measures at HealthCare as of December 31, 2013, amounted to €115 million, comprising €106 million for severance payments and €9 million for other restructuring expenses.

A restructuring program launched in the CropScience subgroup in 2011 to improve cost efficiency and increase flexibility was completed at the end of 2013. Significant individual measures took place in the United States, Germany and France. The restructuring initiated in the United States in 2011, involving the closure of several carbamate production facilities and a formulation plant, continued in 2013, utilizing the provisions established for this purpose. Provisions for the above and other restructuring measures at CropScience as of December 31, 2013, amounted to €94 million, comprising €53 million for severance payments and €41 million for other restructuring expenses.

Provisions for restructuring measures in the MaterialScience subgroup pertained largely to the optimization of certain sites in the United States to improve cost efficiency and to the realignment of the systems house business in Europe, including the related consolidation of production facilities. Provisions for restructuring at MaterialScience as of December 31, 2013, amounted to €9 million, comprising €8 million for severance payments and €1 million for other restructuring expenses.

In addition, restructuring measures focusing on the introduction of country platforms, along with further efficiency improvements, were carried out throughout the Group so as to more effectively pool central functions. The restructuring provisions associated with these measures as of December 31, 2013, amounted to €24 million, comprising €22 million for severance payments and €2 million for other restructuring expenses.

26.4 Trade-related commitments

Provisions for trade-related commitments comprised provisions for rebates, discounts and other price adjustments, product returns, outstanding invoices, pending losses and onerous contracts.

26.5 Litigations

The legal risks currently considered to be material, and their development, are described in NOTE [32].

26.6 Personnel commitments

Provisions for personnel commitments mainly include those for variable and individual one-time payments, credit balances on long-term accounts, service awards, early retirements, pre-retirement part-time working arrangements and other personnel costs. Also reflected here are the obligations under the stock-based compensation programs. Provisions for severance payments resulting from restructuring are reflected in provisions for restructuring.

STOCK-BASED COMPENSATION PROGRAMS

The Bayer Group offers stock-based compensation programs collectively to different groups of employees. As required by IFRS 2 (Share-based Payment) for compensation systems involving cash settlement, awards to be made under the stock-based programs are covered by provisions in the amount of the fair value of the obligations existing as of the date of the financial statements vis-à-vis the respective employee group. All resulting valuation adjustments are recognized in profit or loss.

The following table shows the changes in provisions for the various programs:

Changes in Provisions for Stock-Based Compensation Programs [Table 4.77]

	Stock Incentive Program	Stock Participation Program	Aspire I Three-Year Program	Aspire II Three-Year Program	Aspire I Four-Year Program	Aspire II Four-Year Program	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
December 31, 2012	**0**	**6**	**20**	**26**	**54**	**82**	**188**
Additions	–	2	–	–	92	165	259
Utilization	–	(3)	(18)	(25)	–	–	(46)
Reversal	–	–	(2)	(1)	(10)	(9)	(22)
Exchange differences	–	–	–	–	(2)	(8)	(10)
December 31, 2013	**0**	**5**	**0**	**0**	**134**	**230**	**369**

The value of the Aspire tranches that were fully earned at the end of 2013, resulting in payments at the beginning of 2014, was €136 million (2012: €46 million).

Total expense for all stock-based compensation programs in 2013 was €275 million (2012: €177 million), including €4 million (2012: €4 million) for the BayShare stock participation program and €12 million (2012: €10 million) for grants of virtual Bayer shares forming a component of long-term compensation.

The fair value of obligations under the standard stock-based compensation programs was calculated using the Monte Carlo simulation method based on the following key parameters:

Parameters for Monte Carlo Simulation [Table 4.78]

	2012	2013
Dividend yield	2.66%	2.14%
Risk-free interest rate for the four-year program	0.155%	0.644%
Volatility of Bayer stock	27.40%	27.06%
Volatility of the EURO STOXX 50	24.54%	22.54%
Correlation between Bayer stock price and the EURO STOXX 50	0.75	0.77

LONG-TERM INCENTIVE PROGRAM FOR MEMBERS OF THE BOARD OF MANAGEMENT AND OTHER SENIOR EXECUTIVES (ASPIRE I)

Since 2005, members of the Board of Management and other senior executives have been entitled to participate in Aspire I on the condition that they purchase a certain number of Bayer shares – determined for each individual according to specific guidelines – and retain them for the full term of the program. A percentage of the executive's annual base salary – based on his/her position – is defined as a target for variable payments (Aspire target opportunity). Depending on the performance of Bayer stock, both in absolute terms and relative to the EURO STOXX 50 benchmark index during a three-year performance period (or, starting with the regular 2010 tranche, a four-year performance period), participants are granted an award of up to 300% of their individual Aspire target opportunity for four-year tranches, or 200% for three-year tranches, at the end of the program. In 2010 a final tranche with a three-year performance period was issued in addition. This tranche expired at the end of 2012, and payment of the maximum resulting amount (200%) was made at the beginning of 2013.

LONG-TERM INCENTIVE PROGRAM FOR MIDDLE MANAGEMENT (ASPIRE II)

Also since 2005, other senior managers and middle managers have been offered Aspire II, a variant of Aspire I that does not require a personal investment in Bayer shares and that was extended to further managerial employees in 2012. In this case, the amount of the award is based entirely on the absolute performance of Bayer stock. The maximum award is 250% of each manager's Aspire target opportunity for four-year tranches, or 150% for three-year tranches. The final three-year tranche expired at the end of 2012, and payment of the maximum resulting amount (150%) was made at the beginning of 2013.

BAYSHARE 2013

All management levels and non-managerial employees are offered an annual stock participation program known as BayShare, under which Bayer subsidizes their personal investments in the company's stock. The discount under this program is set separately each year. In 2013 it was 20% (2012: 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 (2012: €2,500) or €5,000 (2012: €5,000), depending on the employee's position. The shares thus acquired must be retained until December 31 of the year following the year of purchase, irrespective of continued employment with the Bayer Group.

In 2013, employees purchased a total of about 242,600 shares (2012: 304,500 shares) under the BayShare program.

STOCK-BASED COMPENSATION PROGRAMS 2003–2004

The stock-based compensation programs offered to the different employee groups in 2003 and 2004 had similar basic structures. Changes in the obligations under these programs are reflected in the financial statements at fair value through profit or loss. Entitlements to awards under these programs are conditioned on retention of the Bayer shares for a certain time period. The tranches issued in 2003 expired in 2013.

The following table shows the conditions of the programs issued through 2004 and still ongoing, for which provisions of €5 million were established as of December 31, 2013:

Stock-Based Compensation Programs 2004 [Table 4.79]

	Stock Incentive Program	Stock Participation Program
Year of issue	2004	2004
Original term in years	10	10
Retention period/distribution date in years from issue date	2/6/10	2/6/10
Performance criteria	yes	no

STOCK INCENTIVE PROGRAM

A Stock Incentive Program was offered to middle management until 2004. Participants receive a cash payment equivalent to a defined number of Bayer shares on certain dates during the ten-year duration of the program. For every ten shares held in a special account (personal investment), they receive two shares after two years, and a further four shares after six and ten years, respectively. To qualify for these payments, they must still hold the personal investment on the incentive payment dates and the percentage rise in the price of Bayer stock by the payment date must be above the performance of the EURO STOXX 50 since the start of the program. Participants may sell their shares during the term of the program. However, the shares sold do not qualify for incentive payments on subsequent distribution dates. The number of shares that each employee could transfer to the program was equivalent to half of his or her performance-related bonus for the preceding fiscal year.

STOCK PARTICIPATION PROGRAM

The structure of this program, which was offered to the other employee groups until 2004, is similar to the Stock Incentive Program. However, the incentive payments are based exclusively on the period for which employees hold their personal investment in Bayer shares. Incentive payments are half those allocated under the Stock Incentive Program. For every ten shares held, participants receive the equivalent of one share after two years and the equivalent of a further two shares after six and ten years, respectively.

26.7 Miscellaneous

Miscellaneous provisions included those for other liabilities, contingent liabilities from business combinations, asset retirement obligations (other than those included in provisions for environmental protection) and guarantees.

27. Financial liabilities

Financial liabilities were comprised as follows:

Financial Liabilities [Table 4.80]

	Dec. 31, 2012		Dec. 31, 2013	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Bonds and notes/promissory notes	5,528	1,094	4,520	1,560
Liabilities to banks	2,841	876	2,302	549
Liabilities under finance leases	542	235	382	51
Liabilities from derivatives	309	109	311	117
Other financial liabilities	310	254	1,516	1,164
Total	**9,530**	**2,568**	**9,031**	**3,441**

2012 figures restated

A breakdown of financial liabilities by contractual maturity is given below:

Maturities of Financial Liabilities [Table 4.81]

Maturity	Dec. 31, 2012	Maturity	Dec. 31, 2013
	€ million		€ million
2013	2,568	2014	3,441
2014	1,897	2015	1,208
2015	910	2016	713
2016	436	2017	491
2017	581	2018	1,165
2018 or later	3,138	2019 or later	2,013
Total	**9,530**	**Total**	**9,031**

2012 figures restated

The Bayer Group's financial liabilities are mostly unsecured and – with the exception of the subordinated €1,300 million hybrid bond – are of equal priority.

In addition to promissory notes in the amount of €370 million (2012: €370 million), the Bayer Group has issued the following bonds and notes:

Bonds and Notes [Table 4.82]

Effective interest rate	Stated rate		Nominal volume	Dec. 31, 2012	Dec. 31, 2013
				€ million	€ million
		Bayer AG			
5.155%	5.000%	Hybrid bond 2005/2105 (2015)	EUR 1,300 million	1,364	1,344
4.621%	4.500%	EMTN bond 2006/2013	EUR 1,000 million	1,006	–
5.774%	5.625%	EMTN bond 2006/2018	GBP 250 million	304	298
5.541%	5.625%	EMTN bond 2006/2018 (increase)	GBP 100 million	123	120
		Bayer Capital Corporation B.V.			
4.750%	4.625%	EMTN bond 2009/2014	EUR 1,300 million	1,314	1,310
		Bayer Corporation			
7.180%	7.125%	Notes 1995/2015	US$ 200 million	159	145
6.670%	6.650%	Notes 1998/2028	US$ 350 million	316	284
		Bayer Holding Ltd.			
Floating	Floating	EMTN bond 2008/2013	JPY 10 billion	88	–
3.654%	3.575%	EMTN bond 2008/2018	JPY 15 billion	132	104
1.493%	1.459%	EMTN bond 2010/2017	JPY 10 billion	88	69
0.858%	0.816%	EMTN bond 2012/2017	JPY 30 billion	264	207
0.629%	0.594%	EMTN bond 2013/2019	JPY 10 billion	–	69
		Bayer Nordic SE			
Floating*	Floating*	EMTN bond 2013/2016	EUR 200 million	–	200
		Total		**5,158**	**4,150**

* floating-rate coupon comprising three-month EURIBOR plus 35 basis points

MULTI-CURRENCY EUROPEAN MEDIUM TERM NOTES PROGRAM

An important means of external financing are the bonds issued under the multi-currency European Medium Term Notes (EMTN) program. The following transactions took place in 2013 and 2012:

In April 2013, Bayer Nordic SE issued an EMTN bond with a nominal volume of €200 million. In May 2013, Bayer AG redeemed at maturity the EMTN bond with a nominal volume of €1,000 million issued in May 2006. In May 2013, Bayer Holding Ltd. issued an EMTN bond with a nominal volume of JPY 10 billion. In July 2013, Bayer Holding Ltd. redeemed at maturity the EMTN bond with a nominal volume of JPY 10 billion issued in June 2008.

In April 2012, the EMTN bond with a nominal volume of €2,000 million issued by Bayer AG in April 2002 was redeemed at maturity. In June 2012, the EMTN bonds with nominal volumes of JPY 15 billion and JPY 30 billion issued by Bayer Holding Ltd. in June 2007 were redeemed at maturity, and an EMTN bond with a nominal volume of JPY 30 billion was issued in April 2012.

SUBORDINATED BONDS

In July 2005, Bayer AG issued a 100-year subordinated hybrid bond with a nominal volume of €1,300 million. This issue matures in 2105 and has a fixed coupon of 5.0% in the first 10 years. Thereafter, interest is calculated quarterly at a floating rate (three-month EURIBOR plus 280 basis points). After the first 10 years, Bayer AG has a quarterly option to redeem the bond at face value. The coupon is payable in arrears. This bond is treated as 75% equity by Moody's and as 50% equity by Standard & Poor's and therefore improves the Bayer Group's rating-specific debt indicators.

Bayer AG guarantees all the bonds issued by subsidiaries.

LEASING LIABILITIES

Lease payments totaling €538 million (2012: €681 million), including €156 million (2012: €139 million) in interest, are to be made under finance leases to the respective lessors in future years.

The liabilities under finance leases mature as follows:

Leasing Liabilities [Table 4.83]

	Dec. 31, 2012				Dec. 31, 2013		
Maturity	Lease payments	Interest component	Liabilities under finance leases	Maturity	Lease payments	Interest component	Liabilities under finance leases
	€ million	€ million	€ million		€ million	€ million	€ million
2013	258	23	235	2014	71	20	51
2014	57	16	41	2015	63	19	44
2015	49	15	34	2016	54	18	36
2016	46	14	32	2017	44	16	28
2017	34	11	23	2018	41	14	27
2018 or later	237	60	177	2019 or later	265	69	196
Total	**681**	**139**	**542**	**Total**	**538**	**156**	**382**

2012 figures restated

OTHER FINANCIAL LIABILITIES

The other financial liabilities as of December 31, 2013, included commercial paper of €943 million (2012: €150 million).

OTHER INFORMATION

As of December 31, 2013, the Group had credit facilities at its disposal totaling €5.8 billion (2012: €6.3 billion), of which €2.3 billion (2012: €2.8 billion) was used and €3.5 billion (2012: €3.5 billion) was unused and thus available for borrowing on an unsecured basis.

Further information on the accounting for liabilities from derivatives is given in NOTE [30].

28. Trade accounts payable

Trade accounts payable comprised €4,467 million (2012: €4,277 million) due within one year and €6 million (2012: €28 million) due after one year.

29. Other liabilities

Other liabilities comprised:

Other Liabilities [Table 4.84]

	Dec. 31, 2012		Dec. 31, 2013	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Accrued interest on liabilities	142	131	105	99
Liabilities to employees	176	146	183	168
Liabilities for social expenses	168	152	150	137
Other tax liabilities	395	353	409	378
Liabilities to non-controlling interest	–	–	49	–
Deferred income	346	130	319	122
Miscellaneous liabilities	497	403	428	377
Total	**1,724**	**1,315**	**1,643**	**1,281**

2012 figures restated

Liabilities to non-controlling interest pertained to a pro-rated claim on the total assets of Currenta GmbH & Co. OHG which could arise if the other stockholder exercises a statutory right of termination.

The deferred income included €61 million (2012: €65 million) in grants and subsidies received from governments, of which €9 million (2012: €14 million) was reversed and recognized in profit or loss.

The miscellaneous liabilities included €73 million (2012: €54 million) from derivative hedging transactions.

30. Financial instruments

The system used by the Bayer Group to manage credit risks, liquidity risks and the various types of market risks (interest-rate, currency and other price risks), together with its objectives, methods and procedures, is outlined in the Risk Report, which forms part of the Combined Management Report.

30.1 Financial instruments by category

The following table shows the carrying amounts and fair values of financial assets and liabilities by category of financial instrument and a reconciliation to the corresponding line item in the statements of financial position. Since the line items “Other receivables,” “Trade accounts payable” and “Other liabilities” contain both financial instruments and non-financial assets or liabilities (such as other tax receivables or advance payments for services to be received in the future), the reconciliation is shown in the column headed “Non-financial assets/liabilities.”

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Carrying Amounts and Fair Values of Financial Instruments

[Table 4.85]

	Dec. 31, 2012								Dec.31, 2013						
	Carried at amortized cost		Carried at fair value			Non-financial assets/ liabilities			Carried at amortized cost		Carried at fair value			Non-financial assets/ liabilities	
	Carrying amount Dec. 31, 2012	Fair value (for information)	Based on quoted prices in active markets (Level 1) Carrying amount	Based on market derived data (Level 2) Carrying amount	Based on individual unobservable inputs (Level 3) Carrying amount	Carrying amount	Carrying amount in the statement of financial position		Carrying amount Dec. 31, 2013	Fair value (for information)	Based on quoted prices in active markets (Level 1) Carrying amount	Based on market derived data (Level 2) Carrying amount	Based on individual unobservable inputs (Level 3) Carrying amount	Carrying amount	Carrying amount in the statement of financial position
	€ million	€ million	€ million	€ million	€ million	€ million	€ million		€ million	€ million	€ million	€ million	€ million	€ million	€ million
Trade accounts receivable	7,433						7,433		7,569						7,569
Loans and receivables	7,433	7,431					7,433		7,569	7,569					7,569
Other financial assets	1,010		503	623	29		2,165		941		276	737	28		1,982
Loans and receivables	876	876					876		823	823					823
Available-for-sale financial assets	32		307	5			344		22		276				298
Held-to-maturity financial assets	102	105					102		96	97					96
Non-derivative held-for-trading financial assets			196				196								
Derivatives that qualify for hedge accounting				346			346					335			335
Derivatives that do not qualify for hedge accounting				272	29		301					402	28		430
Other receivables	634					1,562	2,196		526					1,446	1,972
Loans and receivables	634	635					634		526	526					526
Non-financial assets						1,562	1,562							1,446	1,446
Cash and cash equivalents	1,698						1,698		1,662						1,662
Loans and receivables	1,698	1,698					1,698		1,662	1,662					1,662
Total financial assets	**10,775**		**503**	**623**	**29**		**11,930**		**10,698**		**276**	**737**	**28**		**11,739**
of which loans and receivables	10,641						10,641		10,580						10,580
Financial liabilities	9,221			309			9,530		8,720			311			9,031
Carried at amortized cost	9,221	9,668					9,221		8,720	8,967					8,720
Derivatives that qualify for hedge accounting				159			159					200			200
Derivatives that do not qualify for hedge accounting				150			150					111			111
Trade accounts payable	3,938					367	4,305		4,276					197	4,473
Carried at amortized cost	3,938	3,938					3,938		4,276	4,276					4,276
Non-financial liabilities						367	367							197	197
Other liabilities	699			47	7	971	1,724		620			38	35	950	1,643
Carried at amortized cost	699	700					699		620	620					620
Derivatives that qualify for hedge accounting				20			20					15			15
Derivatives that do not qualify for hedge accounting				27	7		34					23	35		58
Non-financial liabilities						971	971							950	950
Total financial liabilities	**13,858**			**356**	**7**		**14,221**		**13,616**			**349**	**35**		**14,000**
of which carried at amortized cost	13,858						13,858		13,616						13,616
of which derivatives that qualify for hedge accounting				179			179					215			215
of which derivatives that do not qualify for hedge accounting				177	7		184					134	35		169

2012 figures restated

The loans and receivables reflected in other financial assets and the liabilities measured at amortized cost also include receivables and liabilities under finance leases in which Bayer is the lessor or lessee and which are therefore measured in accordance with IAS 17.

Because of the short maturities of most trade accounts receivable and payable, other receivables and liabilities, and cash and cash equivalents, their carrying amounts at the closing date did not significantly differ from the fair values.

The fair value stated for noncurrent receivables, loans, held-to-maturity financial investments and non-derivative financial liabilities is the present value of the respective future cash flows. This was determined by discounting the cash flows at a closing-date interest rate that takes into account the term of the assets or liabilities and the creditworthiness of the counterparty. Where a market price was available, however, this was deemed to be the fair value.

The fair values of available-for-sale financial assets correspond to quoted prices in active markets for identical assets (Level 1).

The fair values of derivatives for which no quoted market prices existed were determined using valuation techniques based on observable market-derived data as of the end of the reporting period (Level 2). In applying valuation techniques, credit value adjustments were determined to allow for the contracting party's credit risk.

The respective currency and commodity forward contracts were 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.

Income, expense, gains and losses on financial instruments can be assigned to the following categories:

Income, Expense, Gains and Losses on Financial Instruments [Table 4.86]

	2013					
	Loans and receivables	Held-to-maturity financial investments	Available-for-sale financial assets	Held for trading	Liabilities carried at amortized cost	Total
	€ million	€ million	€ million	€ million	€ million	€ million
Interest income	77	1	2	44	151	275
Interest expense	–	–	–	(54)	(559)	(613)
Income/expenses from affiliated companies	–	–	–	–	–	–
Changes in fair value	–	–	–	(10)	–	(10)
Impairment losses	(82)	–	(2)	–	–	(84)
Impairment loss reversals	42	–	–	–	–	42
Exchange gains/losses	(506)	–	–	372	(21)	(155)
Gains/losses from retirements	–	–	77	–	–	77
Other financial income/expenses	(1)	–	(3)	–	6	2
Net result	**(470)**	**1**	**74**	**352**	**(423)**	**(466)**

Income, Expense, Gains and Losses on Financial Instruments (Previous Year) [Table 4.87]

	2012					
	Loans and receivables	Held-to-maturity financial investments	Available-for-sale financial assets	Held for trading	Liabilities measured at amortized cost	Total
	€ million	€ million	€ million	€ million	€ million	€ million
Interest income	145	2	4	174	156	481
Interest expense	–	–	–	(156)	(558)	(714)
Income/expenses from affiliated companies	–	–	–	–	–	–
Changes in fair value	–	–	–	21	–	21
Impairment losses	(96)	–	(6)	–	–	(102)
Impairment loss reversals	28	–	2	–	–	30
Exchange gains/losses	(129)	–	(1)	104	6	(20)
Gains/losses from retirements	–	–	1	–	–	1
Other financial income/expenses	(4)	–	–	–	(30)	(34)
Net result	**(56)**	**2**	**–**	**143**	**(426)**	**(337)**

2012 figures restated

The interest expense of €559 million (2012: €558 million) from non-derivative financial liabilities also included the income and expense from interest-rate swaps that qualified for hedge accounting. Interest income from financial assets not measured at fair value through profit or loss amounted to €80 million (2012: €151 million). Interest income from interest-rate derivatives that qualified for hedge accounting was €151 million (2012: €129 million). The changes in fair values of financial assets held for trading related mainly to forward commodity contracts and embedded derivatives.

Embedded derivatives were separated from their respective host contracts. Such host contracts are generally sales or purchase agreements relating to the operational business. The embedded derivatives cause the cash flows from the contracts to vary with fluctuations in exchange rates, commodity prices or other prices, for example. The internal measurement of embedded derivatives is mainly performed using the discounted cash flow method, which is based on individual unobservable inputs (Level 3). These included 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 changes in the net amount of financial assets and liabilities recognized at fair value based on individual unobservable inputs were as follows:

Changes in the Net Amount of Financial Assets and Liabilities Recognized at Fair Value Based on Individual Unobservable Inputs [Table 4.88]

	2012	2013
	€ million	€ million
Net carrying amounts, January 1	**30**	**22**
Gains (losses) recognized in profit or loss	(16)	(29)
of which related to assets/liabilities recognized in the statements of financial position	(16)	(29)
Gains (losses) recognized outside profit or loss	–	–
Additions	8	–
Retirements	–	–
Reclassifications	–	–
Net carrying amounts, December 31	**22**	**(7)**

No gains or losses from divestments were recorded in 2013. The changes recognized in profit or loss were included in other operating income or expenses.

Derivatives that constitute financial assets and form part of a master netting arrangement but do not satisfy, or only partially satisfy, the offsetting criteria and are only enforceable in the event of breach of contract by, or insolvency of, one of the contracting parties amounted to €685 million (2012: €568 million); the related financial liabilities (derivatives) were €140 million (2012: €171 million). Derivatives with the same characteristics that constitute financial liabilities amounted to €299 million (2012: €313 million); the related financial assets (derivatives) were €140 million (2012: €171 million).

30.2 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, as shown in the table in NOTE [30.3].

There was also a liquidity risk from an as yet unpaid €1,005 million (2012: €1,005 million) portion of the effective initial fund of Bayer-Pensionskasse VVaG, which may result in further payments by Bayer AG in subsequent years. This amount was reported under loan commitments.

Maturity Analysis of Financial Instruments [Table 4.89]

	Dec. 31, 2013	Cash flows 2014	Cash flows 2015		Cash flows 2016	Cash flows 2017	Cash flows 2018	Cash flows after 2018
	Carrying amount	Interest and repayment	Interest and repayment		Interest and repayment	Interest and repayment	Interest and repayment	Interest and repayment
	€ million	€ million	€ million		€ million	€ million	€ million	€ million
Financial liabilities								
Bonds and notes/promissory notes*	4,520	1,664	1,575		330	325	570	531
Liabilities to banks	2,302	629	722		386	207	522	70
Remaining liabilities	1,898	1,236	408		55	47	42	269
Trade accounts payable	4,276	4,273	4		2	–	–	–
Other liabilities								
Accrued interest on liabilities	105	99	1		1	1	1	3
Remaining liabilities	515	441	8		6	2	4	66
Liabilities from derivatives								
Derivatives that qualify for hedge accounting	215	45	1		55	2	114	–
Derivatives that do not qualify for hedge accounting	169	140	26		1	1	1	2
Receivables from derivatives								
Derivatives that qualify for hedge accounting	335	215	67		36	14	2	2
Derivatives that do not qualify for hedge accounting	430	359	32		25	–	2	16
Loan commitments	–	1,006	–		–	–	–	–
Financial guarantees	–	25	–		–	–	–	–

* Repayment of the €1,300 million 100-year hybrid bond is reflected at the earliest possible repayment date in 2015.

	Dec. 31, 2012	Cash flows 2013	Cash flows 2014		Cash flows 2015	Cash flows 2016	Cash flows 2017	Cash flows after 2017
	Carrying amount	Interest and repayment	Interest and repayment		Interest and repayment	Interest and repayment	Interest and repayment	Interest and repayment
	€ million	€ million	€ million		€ million	€ million	€ million	€ million
Financial liabilities								
Bonds and notes/promissory notes*	5,528	1,229	1,745		1,584	132	403	1,178
Liabilities to banks	2,841	957	247		713	310	201	718
Remaining liabilities	852	514	91		71	48	38	238
Trade accounts payable	3,938	3,911	13		3	13	–	–
Other liabilities								
Accrued interest on liabilities	142	132	1		1	1	1	6
Remaining liabilities	557	519	8		6	2	4	26
Liabilities from derivatives								
Derivatives that qualify for hedge accounting	179	23	55		–	9	3	90
Derivatives that do not qualify for hedge accounting	184	133	21		30	2	2	2
Receivables from derivatives								
Derivatives that qualify for hedge accounting	346	181	88		52	8	4	18
Derivatives that do not qualify for hedge accounting	301	227	34		21	2	1	16
Loan commitments	–	1,005	–		–	–	–	–
Financial guarantees	–	26	–		–	–	–	–

* Repayment of the €1,300 million 100-year hybrid bond is reflected at the earliest possible repayment date in 2015.
2012 figures restated

30.3 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. A bond of Bayer AG denominated in British pounds was swapped on the issuance date into a fixed-rate euro bond by means of a cross-currency interest-rate swap, which was designated as a cash flow hedge. Certain forward exchange contracts and cross-currency interest-rate swaps used to hedge intra-Group loans are also designated as cash flow hedges.

Fluctuations in future cash flows resulting from forecasted foreign currency transactions are avoided partly through derivative contracts, most of which are designated as cash flow hedges.

INTEREST-RATE RISKS

The interest-rate risks from fixed-interest borrowings are managed in part using interest-rate swaps. The principal borrowings concerned are the US$200 million bond issued in 1995, the €1.3 billion bond issued in 2005, and the €1.3 billion bond issued in 2009. Hedge accounting is applied to the respective borrowings and hedging instruments (fair-value hedge).

Losses of €65 million (2012: gains of €30 million) were recorded on fair-value hedging instruments in 2013. Gains of €65 million (2012: losses of €27 million) were recorded on the underlying hedged items.

COMMODITY PRICE RISKS

Hedging contracts are also used to partly reduce exposure to fluctuations in future cash flows resulting from price changes on procurement markets.

FURTHER INFORMATION ON CASH FLOW HEDGES

Accumulated other comprehensive income from cash flow hedges in 2013 increased by €157 million (2012: €28 million) due to changes in the fair values of derivatives net of tax. Gains of €156 million (2012: losses of €148 million) from fair-value changes – originally recognized in accumulated other comprehensive income – of derivatives designated as cash flow hedges were reclassified to profit or loss. The respective pro-rated deferred tax expense of €46 million (2012: deferred tax income of €43 million) was likewise reclassified to profit or loss.

No material ineffective portions of hedges required recognition in profit or loss in 2013 or 2012.

The income and expense from cash flow hedges recognized in accumulated other comprehensive income mainly comprised gains of €171 million (2012: €89 million) from the hedging of forecasted transactions in foreign currencies. Of these gains, €120 million (2012: €71 million) will be reclassifiable to profit or loss within one year and €51 million (2012: €18 million) in subsequent years.

The fair values of existing contracts in the major categories at the end of the reporting period are indicated in the following table together with the included volumes of cash flow hedges.

Fair Values of Derivatives [Table 4.90]

	Dec. 31, 2012			Dec. 31, 2013		
		Fair value			Fair value	
	Notional amount*	Positive fair value	Negative fair value	Notional amount*	Positive fair value	Negative fair value
	€ million	€ million	€ million	€ million	€ million	€ million
Currency hedging of recorded transactions	**10,477**	**180**	**(227)**	**14,535**	**348**	**(260)**
Forward exchange contracts	8,705	180	(65)	10,519	286	(58)
of which cash flow hedges	330	14	–	–	–	–
Currency options	–	–	–	1,752	23	–
Cross-currency interest-rate swaps	1,772	–	(162)	2,264	39	(202)
of which cash flow hedges	1,461	–	(159)	2,132	38	(200)
Currency hedging of forecasted transactions	**4,554**	**127**	**(24)**	**3,925**	**194**	**(19)**
Forward exchange contracts	3,418	108	(19)	3,191	153	(17)
of which cash flow hedges	3,314	107	(18)	3,000	150	(15)
Currency options	1,136	19	(5)	734	41	(2)
of which cash flow hedges	355	13	(2)	407	40	–
Interest-rate hedging of recorded transactions	**5,066**	**267**	**(67)**	**3,851**	**146**	**(47)**
Interest-rate swaps	5,066	267	(67)	3,851	146	(47)
of which fair value hedges	3,960	212	–	2,745	107	–
Commodity price hedging	**47**	**11**	**(5)**	**16**	**2**	**(1)**
Forward commodity contracts	30	11	(5)	10	1	(1)
Commodity option contracts	17	–	–	6	1	–
Total	**20,144**	**585**	**(323)**	**22,327**	**690**	**(327)**
of which current derivatives	13,776	381	(118)	17,091	533	(106)
for currency hedging	12,713	275	(90)	15,785	446	(81)
for interest-rate hedging**	1,016	95	(23)	1,300	85	(24)
for commodity hedging	47	11	(5)	6	2	(1)

* The notional amount is reported as gross volume, which also contains economically closed hedges.
** The fair value of long-term interest-rate swaps resulting from current interest payments was classified as current.

31. 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:

Contingent Liabilities [Table 4.91]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Warranties	107	107
Guarantees	237	140
Other contingent liabilities	260	467
Total	**604**	**714**

The guarantees mainly comprise a declaration issued by Bayer AG to the trustees of the U.K. pension plans guaranteeing the pension obligations of Bayer Public Limited Company and Bayer CropScience Limited. Under the declaration, Bayer AG – in addition to the two companies – undertakes to make further payments into the plans upon receipt of a payment request from the trustees. The net liability with respect to these defined benefit plans as of December 31, 2013, amounted to €100 million (2012: €171 million).

Other contingent liabilities in 2013 included an amount of €172 million for potential payment claims related to the partial exemption from the surcharge levied under the German Renewable Energy Act.

OTHER FINANCIAL COMMITMENTS

The other financial commitments were as follows:

Other Financial Commitments [Table 4.92]

	Dec. 31, 2012	Dec. 31, 2013
	€ million	€ million
Operating leases	604	596
Orders already placed under purchase agreements	632	365
Unpaid portion of the effective initial fund	1,005	1,005
Potential payment obligations under R&D collaboration agreements	1,798	2,106
Revenue-based milestone payment commitments	2,005	2,191
Total	**6,044**	**6,263**

The non-discounted future minimum lease payments relating to operating leases totaled €596 million (2012: €604 million). The maturities of the respective payment obligations were as follows:

Operating Leases [Table 4.93]

Maturing in	Dec. 31, 2012	Maturing in	Dec. 31, 2013
	€ million		€ million
2013	194	2014	174
2014	133	2015	144
2015	98	2016	81
2016	61	2017	66
2017	45	2018	42
2018 or later	73	2019 or later	89
Total	**604**	**Total**	**596**

Financial commitments resulting from orders already placed under purchase agreements related to planned or ongoing capital expenditure projects totaled €365 million (2012: €632 million).

The unpaid capital provided to Bayer-Pensionskasse VVaG for its effective initial fund amounted to €1,005 million (2012: €1,005 million).

The Bayer Group has entered into cooperation agreements with third parties under which it has agreed to fund various research and development projects or has assumed other payment obligations based on the achievement of certain milestones or other specific conditions. If all of these payments have to be made, their maturity distribution as of December 31, 2013 was expected to be as set forth in the following table. 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.

Potential Payment Obligations Under R&D Collaboration Agreements [Table 4.94]

Maturing in	Dec. 31, 2012	Maturing in	Dec. 31, 2013
	€ million		€ million
2013	238	2014	155
2014	93	2015	181
2015	186	2016	144
2016	101	2017	113
2017	74	2018	95
2018 or later	1,106	2019 or later	1,418
Total	**1,798**	**Total**	**2,106**

In addition to the above commitments, there were also revenue-based milestone payment commitments totaling €2,191 million (2012: €2,005 million), of which €2,090 million (2012: €1,886 million) were not expected to fall due until 2019 (2012: 2018) or later. These commitments are also highly uncertain.

Should the achievement of the milestones or specific conditions become sufficiently probable, a provision or other liability is recognized in the statement of financial position, and this may also lead to the recognition of an intangible asset in the same amount. The above table includes neither current revenue-based royalty payments nor future payments that are probable and therefore already reflected in the statement of financial position.

32. Legal risks

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, patent disputes, tax assessments and environmental matters. The outcome of any current or future proceedings cannot 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 revenues and earnings.

Legal proceedings currently considered to involve material risks are outlined below. The legal proceedings referred to do not represent an exhaustive list.

HealthCare:

PRODUCT-RELATED LITIGATION

Yasmin™/YAZ™: As of February 10, 2014, the number of claimants in the pending lawsuits and claims in the United States totaled about 4,600 (excluding claims already settled). Claimants allege that they have suffered personal injuries, some of them fatal, from the use of Bayer's drospirenone-containing oral contraceptive products such as Yasmin™ and/or YAZ™ or from the use of Ocella™ and/or Gianvi™, generic versions of Yasmin™ and YAZ™, respectively, marketed by Barr Laboratories, Inc. in the United States. Claimants seek compensatory and punitive damages, claiming, in particular, that Bayer knew, or should have known, of the alleged risks and should be held liable for having failed to disclose them or adequately warn users. All cases pending in U.S. federal courts have been consolidated in a multidistrict litigation proceeding for common pre-trial management.

A few State Attorney Generals in the U.S. are investigating the alleged off-label promotion of Yasmin™ and YAZ™ as well as the alleged failure to warn about an alleged increased risk of developing blood clots in violation of consumer protection statutes. One Attorney General has filed an action against Bayer.

As of February 10, 2014, 13 class actions had been served upon Bayer in Canada and one in Israel.

As of February 10, 2014, Bayer had reached agreements, without admission of liability, to settle the claims of approximately 8,250 claimants in the U.S. for a total amount of about US$1.69 billion. Bayer has only been settling claims in the U.S. for venous clot injuries (deep vein thrombosis or pulmonary embolism) after a case-specific analysis of medical records on a rolling basis. Such injuries are alleged by about 1,950 of the pending unsettled claimants. Bayer will continue to consider the option of settling individual claims for venous clot injuries in the U.S. on a case-by-case basis.

In March 2013, Bayer agreed to settle, without admission of liability, lawsuits in which plaintiffs allege a gallbladder injury for a total maximum aggregate amount of US$24 million. As of February 10, 2014, about 8,800 plaintiffs had decided to participate in the settlement, which represents more than 95% (90% participation required) of the eligible plaintiffs, so the settlement will go forward.

Additional lawsuits are anticipated. Bayer believes that it has meritorious defenses and will continue to defend itself vigorously against all claims that are not considered for settlement. Bayer has taken appropriate accounting measures for anticipated defense costs and for agreed and anticipated future settlements based on the information currently available and based on the number of pending and estimated future claims alleging venous clot injuries. Bayer has revised the accounting measures taken for the entire Yasmin™/YAZ™ complex for the annual financial statements to reflect anticipated future cases and legal and defense costs.

Mirena™: As of February 10, 2014, lawsuits of approximately 1,450 users of Mirena™, a levonorgestrel-releasing intrauterine system providing long-term contraception, had been served upon Bayer in the U.S. Most of the cases pending in U.S. federal courts have been consolidated in a multidistrict litigation proceeding for common pre-trial management. Additional lawsuits are anticipated. Plaintiffs allege personal injuries resulting from the use of Mirena™, including perforation of the uterus or ectopic pregnancy, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that Mirena™ is defective and that Bayer knew or should have known of the risks associated with it and failed to adequately warn its users. As of February 10, 2014, four class actions relating to Mirena™ had been served upon Bayer in Canada. Bayer believes it has meritorious defenses and intends to defend itself vigorously. Based on the information currently available, Bayer has taken appropriate accounting measures for anticipated defense costs.

In connection with the above proceedings concerning Yasmin™/YAZ™ and Mirena™, Bayer is insured against product liability risks to the extent customary in the industry. However, the accounting measures taken with regard to the Yasmin™/YAZ™ claims exceed the available insurance coverage.

COMPETITION LAW PROCEEDINGS

Cipro™: Since the year 2000, multiple class action lawsuits against Bayer involving Cipro™, a medication used in the treatment of infectious diseases, have been pending in the United States. The plaintiffs sued Bayer and other defendants, alleging that a settlement to end patent litigation reached in 1997 between Bayer and Barr Laboratories, Inc. violated antitrust regulations. All actions filed in federal courts have been dismissed. The federal litigation has ended. A class action brought by indirect purchasers of Cipro™ in California was settled by Bayer, without admission of liability, in June 2013. The agreement became final in December 2013. With the conclusion of the class action in California, only one action, filed in Kansas, remains active. Bayer believes that it has meritorious defenses and intends to defend itself vigorously. Bayer believes the risks remaining in this litigation are no longer material.

PATENT DISPUTES

Beyaz™/Safyral™: In 2013, Bayer received two notices from Watson Laboratories, Inc. that Watson has filed Abbreviated New Drug Applications with a Paragraph IV certification ("ANDA IV") seeking approval of generic versions of both Beyaz™ and Safyral™, Bayer's oral contraceptives containing folate, in the United States. In response, Bayer filed two suits against Watson in U.S. federal court for infringement of the same patent. The lawsuits were consolidated.

Yasmin™/Yasminelle™/YAZ™: In 2011, an opposition division of the European Patent Office revoked a formulation patent ("dissolution") for Yasmin™, Yasminelle™ and YAZ™. In November 2013, a board of appeal of the European Patent Office dismissed Bayer's appeal. The revocation of the patent is now final. The other formulation patent ("micronization") for Yasmin™, Yasminelle™ and YAZ™ had already been revoked by the European Patent Office and that decision is also final.

Betaferon™/Betaseron™: In 2010, Bayer filed a complaint against Biogen Idec MA Inc. in U.S. federal court seeking a declaration by the court that a patent issued to Biogen in 2009 is invalid and not infringed by Bayer's production and distribution of Betaseron™, Bayer's drug product for the treatment of multiple sclerosis. Biogen is alleging patent infringement by Bayer through Bayer's production and distribution of Betaseron™ and Extavia™ and has sued Bayer accordingly. Betaseron™ is manufactured and distributed in the United States by Bayer. Extavia™ is also a drug product for the treatment of multiple sclerosis; it is manufactured by Bayer, but distributed in the United States by Novartis Pharmaceuticals Corporation, another defendant in the lawsuit.

Finacea™: In March 2013, Bayer filed a patent infringement suit in a U.S. federal court against Glenmark Generics Ltd. In January 2013, Bayer had received a notice from Glenmark that Glenmark had filed an ANDA IV seeking approval of a generic version of Bayer's Finacea™ topical gel in the United States.

BAY 94-9027 (rFVIII mutein): In 2013, Bayer filed a lawsuit against Nektar Therapeutics in the district court of Munich, Germany. In this proceeding, Bayer claims rights to certain European patent applications based on a past collaboration between Bayer and Nektar in the field of hemophilia. The European patent applications with the title "Polymer-factor VIII moiety conjugates" are part of a patent family registered in the name of Nektar comprising further patent applications and patents in other countries including the United States. However, Bayer believes that the patent family does not include any valid patent claim relevant for Bayer's drug candidate BAY 94-9027 for the treatment of hemophilia A.

Staxyn™: In April 2012, Bayer filed a patent infringement suit in a U.S. federal court against Watson Laboratories, Inc., and in May 2013 a similar suit against Par Pharmaceutical, Inc. and Par Pharmaceutical Companies, Inc. In 2012, Bayer had received notice of an ANDA IV pursuant to which Watson seeks approval to market a generic version of Bayer's erectile dysfunction treatment Staxyn™ prior to patent expiration in the United States. In April 2013, Bayer had received a similar notice from Par Pharmaceutical. Staxyn™ is an orodispersible (orally disintegrating) formulation of Levitra™. Both drug products contain the same active ingredient, which is protected in the U.S. by two patents expiring in 2018.

Bayer believes it has meritorious defenses in the above patent disputes and intends to defend itself vigorously.

FURTHER LEGAL PROCEEDINGS

Trasylol™/Avelox™: A qui tam complaint relating to marketing practices for Trasylol™ (aprotinin) and Avelox™ (moxifloxacin) filed by a former Bayer employee is pending in the United States District Court in New Jersey. The U.S. government has declined to intervene at the present time.

Bayer Pharma AG former shareholder litigation: In 2008, the squeeze-out of the former minority shareholders of Bayer Pharma AG (formerly named Bayer Schering Pharma AG), Berlin, Germany, became effective. As usual in such cases, several shareholders have initiated special court proceedings to review the adequacy of the compensation payments made by Bayer for the transfer of the shares in the squeeze-out. In another court proceeding initiated by former minority shareholders of Bayer Pharma AG (formerly Bayer Schering Pharma AG) to review the adequacy of compensation payments made by Bayer in connection with the 2006 domination and profit and loss transfer agreement, the District Court (Landgericht) of Berlin decided in April 2013 that the compensation paid by Bayer at the time should be increased by about 40%. Bayer disagrees with this decision and has appealed. Appropriate accounting measures have been taken for this proceeding as well as for the parallel proceeding relating to the squeeze-out of the former minority shareholders.

Newark Bay Environmental Matters: In the United States, Bayer is one of numerous parties involved in a series of claims brought by federal and state environmental protection agencies. The claims arise from operations by entities which historically were conducted near Newark Bay or surrounding bodies of water, or which allegedly discharged hazardous waste into these waterways or onto nearby land. Bayer and the other potentially responsible parties are being asked to remediate and contribute to the payment of past and future remediation or restoration costs and damages.

In the Lower Passaic River matter, a group of more than sixty companies including Bayer is investigating contaminated sediments in the riverbed under the supervision of the United States Environmental Protection Agency (EPA) and other governmental authorities. Future remediation will involve some form of dredging, the nature and scope of which are not yet defined, and potentially other tasks. The cost of the investigation and the remediation work may be substantial if the final remedy involves extensive dredging and disposal of impacted sediments. In the Newark Bay matter, an unaffiliated party is currently conducting an investigation of sediments in Newark Bay under EPA supervision. The investigation is in a preliminary stage. Bayer has contributed to certain investigation costs in the past and may incur costs for future investigation and remediation activities in Newark Bay.

Bayer has also been notified by governmental authorities acting as natural resource trustees that it may have liability for natural resource damages arising from the contamination of the Lower Passaic River, Newark Bay and surrounding water bodies. Bayer is currently unable to determine the extent of its liability.

CropScience:

Proceedings involving genetically modified rice: Several thousand plaintiffs have sued a number of Bayer Group companies before U.S. federal and state courts in connection with genetically modified rice. Plaintiffs have alleged that they suffered economic losses after traces of genetically modified rice were identified in samples of conventional long-grain rice grown in the U.S. Without acknowledging liability, Bayer has reached settlement agreements with a majority of the plaintiffs, including U.S. long-grain rice growers and non-grower entities, such as rice importers and exporters, rice mills or rice dryers and rice seed sellers, for a total amount of approximately US$1.026 billion. Bayer is aware of 24 unsettled claims in the U.S. Bayer intends to continue to defend itself vigorously in all cases in which reasonable resolutions are not possible.

One of the remaining cases was brought by BASF to recover damages allegedly resulting from the contamination of its Clearfield 131 rice variety. In that case, Bayer also filed a claim against BASF alleging that BASF was negligent in its handling of Clearfield 131 and that its negligence contributed to the damages allegedly suffered by rice growers, rice mills and others in this litigation. Bayer seeks reimbursement from BASF for a portion of the amount that Bayer has paid in settlements. Bayer's claim against BASF was dismissed by the trial court of first instance in a decision that is currently on appeal.

Bayer has established appropriate provisions for the settlement program as well as for legal and defense costs.

Asbestos: A further risk may arise from asbestos litigation in the United States. In many cases, the 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. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

MaterialScience:

Partial exemption from the surcharge under the Renewable Energy Act: Under the German Renewable Energy Act (Erneuerbare-Energien-Gesetz) of 2012 ("EEG 2012"), all consumers of electricity normally have to pay a surcharge which is used to promote the development of renewable energies in Germany ("EEG surcharge"). Some energy-intensive companies are partially exempted from this surcharge. In December 2013, the European Commission launched a formal investigation to determine whether this partial exemption violates European Union rules on state aid (government aid). Should this investigation result in the exemption provisions of EEG 2012 being declared invalid retroactively, Bayer could face claims of up to approximately €172 million for the year 2013. Bayer believes there are good arguments to support the position that the partial exemption from the EEG surcharge is admissible under E.U. law and intends to defend itself vigorously against any potential claims for further payments.

TAX PROCEEDINGS

Stamp taxes in Greece: In February 2014, a Greek administrative court of first instance dismissed Bayer's appeal against the assessment of stamp taxes and contingent penalties in the total amount of approximately €23 million on certain intra-Group loans to a Greek subsidiary. Bayer is convinced that the decision is wrong and will appeal. In a second court proceeding of first instance before the same court, Bayer has appealed against the assessment of stamp taxes and contingent penalties in a total amount of approximately €90 million. Bayer believes it has meritorious arguments to support its legal position and intends to defend itself vigorously.

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. Cash flows are classified by operating, investing and financing activities in accordance with IAS 7 (Statement of Cash Flows). Effects of changes in the scope of consolidation are stated separately.

Of the cash and cash equivalents, an amount of €119 million (2012: €131 million) had limited availability due to foreign exchange restrictions. Past experience has shown such restrictions to be of short duration. The above amount included €96 million (2012: €100 million) of exchange-restricted cash in Venezuela. The conversion of cash from Venezuelan bolivars (VEF) into U.S. dollars is subject to a government approval process. In the event of a devaluation of the bolivar, the carrying amount of cash and cash equivalents will therefore be reduced accordingly.

The cash flows reported by consolidated companies outside the eurozone are translated at average monthly exchange rates, with the exception of cash and cash equivalents, which are translated at closing rates. The "Change in cash and cash equivalents due to exchange rate movements" is reported in a separate line item.

33. Net cash provided by (used in) operating activities

The gross cash flow for 2013 of €5,832 million (2012: €4,556 million) is the cash surplus from operating activities before any changes in working capital. The cash flows by segment are shown in NOTE [1].

The net cash of €5,171 million (2012: €4,530 million) provided by operating activities (net cash flow) also takes into account the changes in working capital and other non-cash transactions.

An income-tax-related net cash outflow of €1,281 million (2012: €1,667 million) is included in the net cash flow for 2013. The changes in income tax liabilities, income tax provisions and claims for reimbursement of income taxes are shown in the line item "Changes in other working capital, other non-cash items."

The transfers of bonds with a total value of €1,000 million to pension funds in the prior year were non-cash transactions and therefore did not result in an operating cash outflow.

The sale of securities held for trading, which must be reflected under operating activities according to IAS 7, increased net cash flow by €200 million.

34. Net cash provided by (used in) investing activities

Net cash outflow for investing activities in 2013 amounted to €2,581 million (2012: €814 million).

Additions to property, plant and equipment and intangible assets in 2013 resulted in a cash outflow of €2,157 million (2012: €1,929 million). Cash inflows from sales of property, plant and equipment and other assets amounted to €153 million (2012: €230 million).

Cash outflows of €1,082 million (2012: €466 million) pertained to acquisitions, mainly including those of Conceptus, Inc., United States; Teva Animal Health Inc., United States; the soybean seed producer Wehrtec Tecnologia Agricola Ltda., Brazil; the soybean business of Agricola Wehrmann Ltda., Brazil; the soybean seed producer FN Semillas S.A., Argentina; PROPHYTA Biologischer Pflanzenschutz GmbH, Germany; and Steigerwald Arzneimittelwerk GmbH, Germany. The prior-year figure mainly comprised the acquisitions of the biological crop protection company AgraQuest, Inc., United States; the watermelon and melon seed business of Abbott & Cobb, Inc., United States; and the remaining 50% of the shares of Baulé S.A.S., France. Further details of acquisitions and divestitures are given in NOTES [6.2] and [6.3], respectively.

The net cash inflow from noncurrent and current financial assets amounted to €301 million (2012: €1,069 million).

The transfers of bonds with a total value of €1,000 million to pension funds in the prior year were non-cash transactions and therefore did not result in an investing cash inflow.

The balance of the cash inflows and outflows of approximately €3 billion in connection with the transfer of capital investments to a type of investment fund established in the form of a Belgian institutional SICAV – reflected in the line item "Cash inflows from (outflows for) current financial assets" – was zero. See also NOTE [35].

35. Net cash provided by (used in) financing activities

In 2013 there was a net cash outflow of €2,535 million (2012: €3,783 million) for financing activities. Net loan repayments amounted to €619 million (2012: €1,946 million).

The increased use of current financial instruments led to a higher debt turnover ratio.

To allow nearly all of the investments of Bayer Pension Trust e.V. (approx. €3 billion) to be held within a single investment vehicle and thereby improve the efficiency of capital administration, for example, a type of investment fund was established in 2013 in the form of a Belgian institutional SICAV under the name LECTA N.V. Bayer Pension Trust is the sole investor in this fund. The greater part of the capital investments of Bayer Pension Trust first had to be transferred to Bayer AG in order to transfer them to LECTA. Bayer AG financed the purchase through an intraday loan. Bayer Pension Trust used the proceeds of the transfer to purchase an equivalent number of newly issued shares in LECTA, and LECTA in turn used the proceeds of the share issue to purchase the capital investments from Bayer AG. The liquidity accruing to Bayer AG was subsequently used to repay the loan. The taking of the intraday loan and its repayment are reflected in "Issuances of debt" and "Retirements of debt," respectively.

Cash outflows for dividend payments amounted to €1,574 million (2012: €1,366 million). Net interest payments – including payments for and receipts from interest-rate swaps – decreased to €338 million (2012: €468 million).

Other Information

36. Audit fees

The following fees for the services of the worldwide network of PricewaterhouseCoopers (PwC), including PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft (PwC AG WPG), were recognized as expenses:

Audit Fees [Table 4.95]

	PwC		Of which PwC AG WPG	
	2012	2013	2012	2013
	€ million	€ million	€ million	€ million
Financial statements auditing	11	10	3	3
Audit-related services and other audit work	6	4	5	3
Tax consultancy	1	2	–	–
Other services	1	1	1	1
Total	**19**	**17**	**9**	**7**

The fees for the auditing of financial statements mainly comprise those for the audits of the consolidated financial statements of the Bayer Group and the financial statements of Bayer AG and its subsidiaries. The fees for audit-related services and other audit work comprise those for audits of the internal control system – including project audits in connection with the implementation of new IT systems – along with interim financial statement reviews and other assurance services.

37. Related parties

Related parties as defined in IAS 24 (Related Party Disclosures) are those legal entities and natural persons 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, non-consolidated subsidiaries, joint ventures, associates and post-employment benefit plans, as well as the corporate officers of Bayer AG whose compensation is reported in NOTE [38] and in the Compensation Report, which forms part of the Combined Management Report.

Transactions with non-consolidated subsidiaries, joint ventures, associates and post-employment benefit plans are carried out on an arm's-length basis.

The following table shows the volume of transactions with related parties included in the consolidated financial statements of the Bayer Group at amortized cost or using the equity method, and with post-employment benefit plans:

Related Parties [Table 4.96]

	2012				2013			
	Sales of goods and services	Purchases of goods and services	Receivables	Liabilities	Sales of goods and services	Purchases of goods and services	Receivables	Liabilities
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Non-consolidated subsidiaries	32	13	17	41	24	9	6	28
Joint ventures	26	–	10	6	25	–	5	2
Associates	10	674	4	1	8	703	3	1
Post-employment benefit plans	–	–	821	73	–	–	825	66

2012 figures restated

Goods and services in the amount of €703 million (2012: €674 million) were purchased from the associated company PO JV, LP, Wilmington, United States, mainly in the course of day-to-day business operations.

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 for Bayer-Pensionskasse VVaG. The entire amount remained drawn as of December 31, 2013. Loan capital was first provided to Bayer-Pensionskasse VVaG in 2008 for its effective initial fund. This capital amounted to €595 million as of December 31, 2013 (2012: €595 million). The outstanding receivables bear interest at an average rate of 3%. Bayer AG recognized €32 million in interest for the year 2013 and €31 million for 2012.

The transfer of capital investments from Bayer Pension Trust to LECTA N.V. is described in NOTES [34] and [35].

Impairment losses recognized on receivables from related parties in 2013 amounted to €2 million (2012: €0 million).

38. Total compensation of the Board of Management and the Supervisory Board, advances and loans

The compensation of the Board of Management comprises short-term payments, stock-based payments and post-employment benefits.

The following table shows the individual components of the Board of Management's compensation according to IFRS:

Board of Management Compensation according to IFRS [Table 4.97]

	2012	2013
	€ thousand	€ thousand
Fixed compensation	3,394	3,774
Fringe benefits	147	182
Total short-term non-performance-related compensation	**3,541**	**3,956**
Short-term performance-related cash compensation	4,247	4,712
Total short-term compensation	**7,788**	**8,668**
Stock-based compensation (virtual Bayer shares) earned in the respective year	4,299	3,976
Change in value of existing entitlements to stock-based compensation (virtual Bayer shares)	3,136	5,030
Stock-based compensation (Aspire) earned in the respective year	2,007	2,925
Change in value of existing entitlements to stock-based compensation (Aspire)	1,196	2,312
Total stock-based compensation (long-term incentive)	**10,638**	**14,243**
Service cost for pension entitlements earned in the respective year	2,501	1,805
Total long-term compensation	**13,139**	**16,048**
Aggregate compensation (IFRS)	**20,927**	**24,716**

In addition to the above compensation, actuarial gains of €1,437 thousand (2012: actuarial losses of €7,553 thousand) incurred in connection with pension obligations to the currently serving members of the Board of Management were recognized outside profit or loss. These changes mainly resulted from the rise in interest rates (2012: decline in interest rates).

Further details are provided in the Compensation Report, which forms part of the Combined Management Report.

An amount of €18,310 thousand (2012: €13,222 thousand) is recognized in the statement of financial position for future payments of stock-based compensation based on virtual shares to the members of the Board of Management who held office on December 31, 2013.

An amount of €6,813 thousand (2012: €3,793 thousand) is recognized in the statement of financial position for future payments of stock-based compensation based on the Aspire program to the members of the Board of Management who held office on December 31, 2013.

The present value of the defined benefit pension obligation for the active members of the Board of Management as of December 31, 2013, was €23,473 thousand (2012: €33,448 thousand).

Pension payments to former members of the Board of Management and their surviving dependents amounted to €12,871 thousand (2012: €12,673 thousand). The defined benefit obligation for former members of the Board of Management and their surviving dependents amounted to €150,148 thousand (2012: €149,746 thousand).

The compensation of the Supervisory Board amounted to €3,309 thousand (2012: €2,974 thousand). No variable compensation components were granted in 2013 following the change in the compensation system (2012: €218 thousand).

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2013 was €727 thousand (2012: €670 thousand).

Pension obligations for employee representatives on the Supervisory Board amounted to €2,218 thousand (2012: €2,412 thousand).

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2013, or at any time during 2013 or 2012.

39. Events after the end of the reporting period

TAKEOVER OFFER FOR ALGETA ASA

On December 19, 2013, Bayer announced its intention to acquire the pharmaceutical company Algeta ASA, Norway. The formal takeover offer at a price of NOK 362 per share in cash was made to Algeta shareholders on January 20, 2014. The offer, which implies an equity value of NOK 17.6 billion (€2.1 billion), is subject to a minimum acceptance level of 90% of the outstanding shares of Algeta ASA by the end of the offer period. The offer period expires at 9:00 a.m. Central European Time on February 24, 2014. If the offer is successful, payment to Algeta shareholders is to be made at the beginning of March 2014.

Algeta ASA develops novel cancer therapies based on its world-leading, patented technologies. Its alpha-pharmaceuticals are designed to target cancers using the unique properties of alpha particle radiation. The company has about 180 employees. Bayer and Algeta have collaborated since 2009 to develop and commercialize radium-223 dichloride, which was approved in the United States in May 2013 under the tradename Xofigo™ and is being co-promoted there by Algeta and Bayer.

The planned acquisition would strengthen HealthCare's oncology business and support our efforts to provide patients with innovative treatment options.

ISSUANCE OF BONDS

After the end of the reporting period – on January 21, 2014 – Bayer AG issued three tranches of bonds with a combined nominal volume of €2 billion under the multi-currency European Medium Term Notes program. Of the three tranches, one has a nominal volume of €500 million, a floating-rate coupon of 22 basis points over three-month Euribor and a maturity of two years. The second has a nominal volume of €750 million, a maturity of four years and a fixed-rate coupon of 1.125%. The third has a nominal volume of €750 million, a maturity of seven years and a fixed-rate coupon of 1.875%. The proceeds will be used for general corporate purposes and possible acquisitions.

Leverkusen, February 17, 2014
Bayer Aktiengesellschaft

The Board of Management

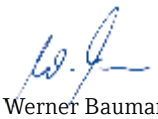
Responsibility Statement*

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, 2014
Bayer Aktiengesellschaft

The Board of Management

Dr. Marijn Dekkers
Chairman



Werner Baumann

Michael König

Kemal Malik

Prof. Dr. Wolfgang Plischke

*applies exclusively to the content of the printed version of the Annual Report 2013

Independent Auditors' Report

To Bayer Aktiengesellschaft, Leverkusen

REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

We have audited the accompanying consolidated financial statements of Bayer Aktiengesellschaft and its subsidiaries, which comprise the consolidated income statement and statement of comprehensive income, the consolidated statement of financial position, the consolidated statement of cash flows, the consolidated statement of changes in equity and the notes to the consolidated financial statements for the business year from January 1, 2013 to December 31, 2013.

Board of Management's Responsibility for the Consolidated Financial Statements

The Board of Management of Bayer Aktiengesellschaft is responsible for the preparation of these consolidated financial statements. This responsibility includes that these consolidated financial statements are prepared in accordance with International Financial Reporting Standards, as adopted by the E.U., and the additional requirements of German commercial law pursuant to § (Article) 315a Abs. (paragraph) 1 HGB ("Handelsgesetzbuch": German Commercial Code) and that these consolidated financial statements give a true and fair view of the net assets, financial position and results of operations of the Group in accordance with these requirements. The Board of Management is also responsible for the internal controls as the Board of Management determines are necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW) and additionally observed the International Standards on Auditing (ISA). Accordingly, we are required to comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing audit procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The selection of audit procedures depends on the auditor's professional judgment. This includes the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In assessing those risks, the auditor considers the internal control system relevant to the entity's preparation of consolidated financial statements that give a true and fair view. The aim of this is to plan and perform audit procedures that are appropriate in the given circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control system. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Board of Management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Audit Opinion

According to § 322 Abs. 3 Satz (sentence) 1 HGB, we state that our audit of the consolidated financial statements has not led to any reservations.

In our opinion based on the findings of our audit, the consolidated financial statements comply, in all material respects, with IFRSs, as adopted by the E.U., and the additional requirements of German commercial law pursuant to § 315a Abs. 1 HGB and give a true and fair view of the net assets and financial position of the Group as at December 31, 2013 as well as the results of operations for the business year then ended, in accordance with these requirements.

REPORT ON THE COMBINED MANAGEMENT REPORT

We have audited the accompanying Group management report of Bayer Aktiengesellschaft for the business year from January 1, 2013 to December 31, 2013, which is combined with the management report of the company. The Board of Management of Bayer Aktiengesellschaft is responsible for the preparation of the combined management report in accordance with the requirements of German commercial law applicable pursuant to § 315a Abs. 1 HGB. We conducted our audit in accordance with § 317 Abs. 2 HGB and German generally accepted standards for the audit of the combined management report promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW). Accordingly, we are required to plan and perform the audit of the combined management report to obtain reasonable assurance about whether the combined management report is consistent with the consolidated financial statements and the audit findings, as a whole provides a suitable view of the Group's position and suitably presents the opportunities and risks of future development.

According to § 322 Abs. 3 Satz 1 HGB we state that our audit of the combined management report has not led to any reservations.

In our opinion based on the findings of our audit of the consolidated financial statements and combined management report, the combined management report is consistent with the consolidated financial statements, as a whole provides a suitable view of the Group's position and suitably presents the opportunities and risks of future development.

Essen, February 18, 2014

PricewaterhouseCoopers
Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft

Dr. Peter Bartels
Wirtschaftsprüfer

Anne Böcker
Wirtschaftsprüferin

Independent Assurance Report

To Bayer AG, Leverkusen

We have been engaged to perform a limited assurance engagement on the online annexes of the augmented online version of the Annual Report of Bayer AG, Leverkusen, (hereinafter: the Company), for the business year from 1 January to 31 December 2013 ("Annual Report 2013 – Augmented Version"; hereinafter: Online Version) as well as on the chapters "Investor Information" and "Reporting Principles" of the Online Version.[1]

MANAGEMENT'S RESPONSIBILITY

Company's Board of Managing Directors is responsible for the proper preparation of the report in accordance with the criteria stated in the Sustainability Reporting Guidelines Vol. 3.1 (pp. 7 to 17) of the Global Reporting Initiative (GRI):

- Materiality,
- Stakeholder Inclusiveness,
- Sustainability Context,
- Completeness,
- Balance,
- Clarity,
- Accuracy,
- Timeliness,
- Comparability and
- Reliability.

This responsibility includes the selection and application of appropriate methods to prepare the report and the use of assumptions and estimates for individual sustainability disclosures which are reasonable in the circumstances. Furthermore, the responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Online Version.

PRACTITIONER'S RESPONSIBILITY

Our responsibility is to express a conclusion based on our work performed as to whether anything has come to our attention that causes us to believe that the information marked with the label "limited assurance" in the Online Version of the Company's Annual Report for the business year from 1 January to 31 December 2013 have not been prepared, in all material respects, in accordance with the above mentioned criteria of the Sustainability Reporting Guidelines Vol. 3.1 (pp. 7 to 17) of the GRI.

Any links to external sources of documentation as well as prospective statements were not in scope of our engagement.

We also have been engaged to make recommendations for the further development of sustainability management and sustainability reporting based on the results of our assurance engagement.

[1]Our engagement applied to the German and English augmented online version of the Annual Report of Bayer AG, which describes the sustainability perfor-mance of the Company. This text is a translation of the Independent Assur-ance Report issued in German language – the German text is authoritative. The Online Version is available at www.bayer.de/GB13 and www.bayer.com/AR13 respectively.

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000. This Standard requires that we comply with ethical requirements and plan and perform the assurance engagement, under consideration of materiality, in order to provide our conclusion with limited assurance.

In a limited assurance engagement the evidence-gathering procedures are more limited than for a reasonable assurance engagement (for example, an audit of financial statements in accordance with § (Article) 317 HGB ("Handelsgesetzbuch": "German Commercial Code")), and therefore less assurance is obtained than in a reasonable assurance engagement. The procedures selected depend on the practitioner's judgement.

Within the scope of our work we performed amongst others the following procedures:

- Inquiries of personnel responsible for the preparation of the Online Version regarding the process to prepare the reporting of sustainability information and the underlying internal control system;
- Inspection of documents regarding the sustainability strategy as well as understanding the sustainability management structure, the stakeholder dialogue and the development process of Company's sustainability program;
- Inquiries of personnel in the corporate functions that are responsible for the individual chapters of the Online Version;
- Recording of the systems and processes for collection, analysis, validation and aggregation of sustainability data and their documentation on a sample basis;
- Performance of site visits as part of the inspection of processes for collecting, analyzing and aggregating selected data at:
  - Bayer CropScience Kansas City (United States of America),
  - Bayer CropScience Knapsack (Germany),
  - Bayer CropScience Muttenz (Switzerland),
  - Bayer HealthCare Berlin (Germany),
  - Bayer HealthCare Shawnee (United States of America),
  - Bayer MaterialScience Caojing (China),
  - Bayer MaterialScience Leverkusen (Germany),
  - Currenta Leverkusen (Germany);
- Analytical procedures on sustainability data included in the Online Version;
- Gaining further evidence for selected data of the Online Version through inspection of internal documents, contracts and invoices/reports from external service providers.

CONCLUSION

Based on our limited assurance engagement, nothing has come to our attention that causes us to believe that the information marked with the label "limited assurance" in the Online Version of the Company's Annual Report for the business year from 1 January to 31 December 2013 has not been prepared, in all material respects, in accordance with the above mentioned criteria of the Sustainability Reporting Guidelines Vol. 3.1 (pp. 7 to 17) of the GRI.

EMPHASIS OF MATTER – RECOMMENDATIONS

Without qualifying our conclusion above, we make the following recommendations for the further development of the Company's sustainability management and sustainability reporting:

- Further formalization of the internal controls system for sustainability information and transformation into standardized processes in the course of the further development of Integrated Reporting;
- Further development of the materiality analysis in consideration of the new requirements for Integrated Reporting and the new G4 Guidelines of GRI.

Düsseldorf, February 27, 2014

PricewaterhouseCoopers
Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft

Michael Werner

ppa. Aissata Touré
Wirtschaftsprüferin
(German Public Auditor)

03
Further Information

For direct access to a chapter, simply click on its name.

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 at December 31, 2013 or the date on which they ceased to be members of the Supervisory Board of Bayer AG):

WERNER WENNING
Leverkusen, Germany
(born October 21, 1946)

Chairman of the Supervisory Board effective October 2012

Chairman of the Supervisory Board of Bayer AG and Chairman of the Supervisory Board of E.ON SE

Memberships on other supervisory boards:

- Deutsche Bank AG (until May 2013)
- E.ON SE (Chairman)
- HDI V.a.G (until May 2013)
- Henkel Management AG (effective September 2013)
- Siemens AG (Vice Chairman effective October 2013)
- Talanx AG (until May 2013)

Memberships in comparable supervising bodies of German or foreign corporations:

- Freudenberg & Co. KG (Chairman of the Shareholders' Committee) (until June 2013)
- Henkel AG & Co. KGaA (Member of the Shareholders' Committee)

THOMAS DE WIN
Cologne, Germany
(born November 21, 1958)

Vice Chairman of the Supervisory Board, Member of the Supervisory Board effective April 2002

Chairman of the Bayer Group Works Council

Chairman of the Bayer Central Works Council

Memberships on other supervisory boards:

- Bayer MaterialScience AG

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

Memberships on other supervisory boards:

- Daimler AG
- Deutsche Bank AG (Chairman)
- RWE AG (until April 2013)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Member of the Shareholders' Committee)

DR. CLEMENS BÖRSIG
Frankfurt am Main, Germany
(born July 27, 1948)

Member of the Supervisory Board effective April 2007

Member of various supervisory boards

Memberships on other supervisory boards:

- Daimler AG
- Linde AG

Memberships in comparable supervising bodies of German or foreign corporations:

- Emerson Electric Co.

ANDRÉ VAN BROICH
Dormagen, Germany
(born June 19, 1970)

Member of the Supervisory Board effective April 2012

Chairman of the Works Council of the Dormagen site of Bayer

Memberships on other supervisory boards:

- Bayer CropScience AG

THOMAS EBELING
Muri bei Bern, Switzerland
(born February 9, 1959)

Member of the Supervisory Board effective April 2012

Chief Executive Officer of ProSiebenSat.1 Media AG

Memberships in comparable supervising bodies of German or foreign corporations:

- Lonza Group AG (effective April 2013)

DR.-ING. THOMAS FISCHER
Krefeld, Germany
(born August 27, 1955)

Member of the Supervisory Board effective October 2005

Chairman of the Group Managerial Employees' Committee of Bayer

Memberships on other supervisory boards:

- Bayer MaterialScience AG

PETER HAUSMANN
Winsen/Aller, Germany
(born February 13, 1954)

Member of the Supervisory Board effective April 2006

Member of the Executive Committee of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Continental AG (effective July 2013)
- Henkel AG & Co. KGaA (effective April 2013)
- 50Hertz Transmission GmbH
- Vivawest Wohnen GmbH

REINER HOFFMANN
Wuppertal, Germany
(born May 30, 1955)

Member of the Supervisory Board effective October 2006

North Rhine District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Evonik Services GmbH (Vice Chairman)
- SASOL Germany GmbH (Vice Chairman)

YÜKSEL KARAASLAN
Hohen Neuendorf, Germany
(born March 1, 1968)

Member of the Supervisory Board effective April 2012

Chairman of the Works Council of the Berlin site of Bayer

Vice Chairman of the Bayer Central Works Council

Memberships on other supervisory boards:

- Bayer Pharma AG

DR. RER. POL. KLAUS KLEINFELD
New York, U.S.A.
(born November 6, 1957)

Member of the Supervisory Board effective April 2005

Chairman and Chief Executive Officer of Alcoa Inc.

Memberships in comparable supervising bodies of German or foreign corporations:

- Member of the Board of Directors of Morgan Stanley

PETRA KRONEN
Krefeld, Germany
(born August 22, 1964)

Member of the Supervisory Board effective July 2000

Chairman of the Works Council of the Uerdingen site of Bayer

Memberships on other supervisory boards:

- Bayer MaterialScience AG (Vice Chairman)

DR. RER. NAT. HELMUT PANKE
Munich, Germany
(born August 31, 1946)

Member of the Supervisory Board effective April 2007

Member of various supervisory boards

Memberships in comparable supervising bodies of German or foreign corporations:

- Microsoft Corporation
- Singapore Airlines Limited
- UBS AG

SUE H. RATAJ
Sebastopol, U.S.A.
(born January 8, 1957)

Member of the Supervisory Board effective April 2012

Member of the Board of Directors (non-executive) of Cabot Corporation, Boston, U.S.A.

PETRA REINBOLD-KNAPE
Gladbeck, Germany
(born April 16, 1959)

Member of the Supervisory Board effective April 2012

Northeast District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- envia Mitteldeutsche Energie AG
- Vattenfall Europe Generation AG

Memberships in comparable supervising bodies of German or foreign corporations:

- MDSE Mitteldeutsche Sanierungs- und Entsorgungsgesellschaft mbH

MICHAEL SCHMIDT-KIESSLING
Schwelm, Germany
(born March 24, 1959)

Member of the Supervisory Board effective April 2012

Vice Chairman of the Works Council of the Elberfeld site of Bayer

Memberships on other supervisory boards:

- Bayer Pharma AG

PROF. DR.-ING. EKKEHARD D. SCHULZ
Krefeld, Germany
(born July 24, 1941)

Member of the Supervisory Board effective April 2005

Member of various supervisory boards

Memberships on other supervisory boards:

- MAN SE (Vice Chairman)
- RWE AG

DR. KLAUS STURANY*
Ascona, Switzerland
(born October 23, 1946)

Member of the Supervisory Board effective April 2007

Member of various supervisory boards

Memberships on other supervisory boards:

- Hannover Rückversicherung AG (Vice Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Sulzer AG

PROF. DR. DR. H.C. MULT. ERNST-LUDWIG WINNACKER
Munich, Germany
(born July 26, 1941)

Member of the Supervisory Board effective April 1997

Secretary General of the Human Frontier Science Program, Strasbourg

Memberships on other supervisory boards:

- Medigene AG (Chairman) (until July 2013)
- Wacker Chemie AG

OLIVER ZÜHLKE
Solingen, Germany
(born December 11, 1968)

Member of the Supervisory Board effective April 2007

Chairman of the Works Council of the Leverkusen site of Bayer

Chairman of the Bayer European Forum

Standing committees of the Supervisory Board of Bayer AG
(as at Dec. 31, 2013)

PRESIDIAL COMMITTEE/ MEDIATION COMMITTEE
Wenning (Chairman), Achleitner, Hausmann, de Win

AUDIT COMMITTEE
Sturany* (Chairman), Fischer, Hoffmann, Schulz, Wenning, de Win

HUMAN RESOURCES COMMITTEE
Wenning (Chairman), Achleitner, Kronen, Zühlke

NOMINATIONS COMMITTEE
Wenning (Chairman), Achleitner

* independent expert member pursuant to Section 100 Paragraph 5 of the German Stock Corporation Act (AktG)

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 at December 31, 2013 or the date on which they ceased to be members of the Board of Management of Bayer AG):

DR. MARIJN DEKKERS
(born September 22, 1957)

Chairman
(effective October 1, 2010)

Member of the Board of Management effective January 1, 2010, appointed until December 31, 2014

- Board of Directors of General Electric Company

KEMAL MALIK
(born September 29, 1962)

Member of the Board of Management effective February 1, 2014, appointed until January 31, 2017

DR. RICHARD POTT
born May 11, 1953

Member of the Board of Management until May 31, 2013

Labor Director

- Bayer Chemicals AG (Chairman)
- Bayer HealthCare AG (Chairman)
- Bayer Pharma AG (Chairman)
- Currenta Geschäftsführungs-GmbH (Chairman)
- SCHOTT AG

WERNER BAUMANN
(born October 6, 1962)

Member of the Board of Management effective January 1, 2010, appointed until December 31, 2017

- Bayer Business Services GmbH (Chairman)
- Bayer CropScience AG (Chairman)

MICHAEL KÖNIG
(born September 3, 1963)

Member of the Board of Management effective April 1, 2013, appointed until March 31, 2016

Labor Director
(since June 1, 2013)

- Bayer HealthCare AG (Chairman) (since June 1, 2013)
- Bayer Pharma AG (Chairman) (since June 1, 2013)
- Currenta Geschäftsführungs-GmbH (Chairman) (since June 1, 2013)

PROF. DR. WOLFGANG PLISCHKE
(born September 15, 1951)

Member of the Board of Management effective March 1, 2006, appointed until April 29, 2014

- Bayer MaterialScience AG (Chairman)
- Bayer Technology Services GmbH (Chairman)

Organization Chart

[Graphic 5.1]

BAYER AG (HOLDING COMPANY)

Group Management Board

Marijn Dekkers
Chairman

Werner Baumann
Finance

Wolfgang Plischke[1]
Technology, Innovation & Sustainability

Kemal Malik
Innovation[2]

Michael König*
Human Resources, Technology[2], Sustainability[2]

Corporate Center

Corporate Office
P. Molan

Corporate Brand, Communications and Government Relations
H. Heitmann

Investor Relations
A. Rosar

Corporate Auditing
R. Meyer

Law, Patents & Compliance
R. Hartwig

Regional Coordination
I. Paterson

Group Accounting & Controlling
U. Hauck

Finance
P. Müller

Taxes
B.-P. Bier

Mergers & Acquisitions
F. Rittgen

Environment & Sustainability
W. Grosse Entrup

Corporate Human Resources & Organization
H.-U. Groh

Corporate Development
P. Hausner

Innovation
N. N.

Technology & Manufacturing Strategy
T. Kirchner

BUSINESS AREAS

Bayer HealthCare

O. Brandicourt (photo)
Chief Executive Officer

M. Vehreschild
Chief Financial Officer

D. Ehle
Animal Health

E. L. Mann
Consumer Care

A. Main
Medical Care

A. Fibig
Pharmaceuticals

A. Busch
Global Drug Discovery

J. Möller
Global Development

M. Devoy
Chief Medical Officer

H. Klusik*
Product Supply

N. Sheail
Global Business Development & Licensing

S. Gehring
General Counsel

A. Günther
Human Resources

O. Renner
Communications and Public Affairs

Bayer CropScience

L. Condon (photo)
Chief Executive Officer

M. A. Schulz
Chief Financial Officer

M. Reichardt
Agricultural Commercial Operations

L. van der Broek
Market Leadership Strategy

M. Haug
Human Resources

S. Kurzawa
Communications

G. Marchand
General Counsel

C. D. Nicholson
Research & Development

D. Backhaus
Product Supply

G. Riemann
Environmental Science

M. Kremer
Strategy

B. Naaf*
Business Management

Bayer MaterialScience

P. Thomas (photo)
Chief Executive Officer

A. Steiger-Bagel
Chief Financial Officer

T. Van Osselaer
Industrial Operations

M. Steilemann
Polycarbonates

J. Wolff
Polyurethanes

D. Meyer
Coatings, Adhesives, Specialties

G. Harnier
General Counsel

M. Bernhardt*
Human Resources

R. Northcote
Communications and Public Affairs

SERVICE AREAS

Bayer Business Services

Executive Board
D. Hartert (photo)
Chairman
W. Oehlschläger*

Bayer Technology Services

D. Van Meirvenne
Managing Director

Currenta

Executive Board
G. Hilken (photo)
Chairman
J. Waldi*

*Labor Director
[1] until April 29, 2014
[2] effective April 30, 2014

as of March 1, 2014

Index of the Global Reporting Initiative (GRI) and the 10 UN Global Compact Principles

UNGC principles	GRI Indicators according to the G3.1 Guidelines		Reported	Page reference	Online annex
	STRATEGY AND ANALYSIS				
1-10	**1.1**	Statement from the most senior decision-maker of the organization	full	1-7	
	1.2	Description of key impacts, risks, and opportunities	full	48-50, 59, 62, 64f., 84f., 94-96, 109, 214f., 216f.	3-1.3-1, 3-3-BHC-1, 3-6-2
	ORGANIZATIONAL PROFILE				
	2.1	Name of the organization	full	46	
	2.2	Primary brands, products, and/or services	full	46, 60f., 116-119, 282f.	
	2.3	Operational structure of the organization	full	60f., 263-265	
	2.4	Location of organizations headquarters	full	46	
	2.5	Number of countries where the organization operates, and names of countries with major operations	full	47, 168f.	
	2.6	Nature of ownership and legal form	full	42, 46	
	2.7	Markets served	full	46f., 68f., 116-119, 168	
	2.8	Scale of the reporting organization	full	47, 170f., 178	
	2.9	Significant changes during the reporting period	full	62, 80, 265f.	
	2.10	Awards received in the reporting period	full	41f., 106	2-1, 3-7-20
	REPORT PARAMETERS				
	3.1	Reporting period for information provided	full	front cover, 350	
	3.2	Date of most recent previous report	full	Annual Report: 28.02.2013 Sustainable Development Report: 26.04.2013	
	3.3	Reporting cycle	full	annualy	
	3.4	Contact point for questions regarding the report or its contents	full	353	
	3.5	Process for defining report content	full	84, 350	3-6-1
	3.6	Boundary of the report	full	350	
	3.7	State any specific limitations on the scope or boundary of the report	full	350	
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities	full	350	
	3.9	Data measurement techniques and the bases of calculations	full	135f., 245-258, 350	
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	full	61, 94, 102, 153-158, 160, 162, 164-168, 170, 172-175, 177-179, 228-232, 234, 262f., 269-275, 277f., 280f., 284f., 286-291, 295f., 298, 301, 304, 308-312, 315, 327, 352	
	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	full	28, 350	
	3.12	Table identifying the location of the Standard Disclosures in the report	full	342-343	
	3.13	Policy and current practice with regard to seeking external assurance	full	331-335, 350	
	GOVERNANCE, COMMITMENTS, AND ENGAGEMENT				
1-10	**4.1**	Governance structure of the organization	full	32-36, 186-188	
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer	full	32-36, 185-188, 337-341	
	4.3	Number and gender of members of the highest governance body that are independent and/or non-executive members	full	187f., 337-340	
	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	full	43, 187, Financial Calendar	3-6-2
	4.5	Linkage between compensation of the highest governance body, senior managers, and executives and the organization's performance	full	94, 191, 193-207	
	4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	full	188, 191	
1-10	**4.7**	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity	full	94f., 191	
1-10	**4.8**	Statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance	full	47f., 95	3-6-4
	4.9	Procedures of the highest governance body for overseeing the organization, identification and management of sustainability performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	full	187, 191, 217	
	4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to sustainability	full	32, 205-207	
7	**4.11**	Explanation if precautionary approach or principle is addressed	full	119	3-10-1
1-10	**4.12**	Support of externally developed economic, environmental, and social charters, principles, or other initiatives	full	96, 120f., 135, 138, 143, 191	3-3-BHC-1, 3-5-BCS-1, 3-10-2
	4.13	Principal memberships in industry associations and/or national/international advocacy organization´s	full	96	3-6-2, 3-10-BCS-1
1-10	**4.14**	List of stakeholder groups engaged by the organization	full	59	
	4.15	Basis for identification and selection of stakeholders with whom to engage	full	59	3-6-2
	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	full	59, 85	3-6-1, 3-6-2
1-10	**4.17**	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded	full	59, 94, 216	3-6-1, 3-6-2
1, 6, 7	**ECONOMIC PERFORMANCE – MANAGEMENT APPROACH**		full	46f., 49f., 57f., 108	
	EC1	Direct economic value generated and distributed	full	57f., 148, 274-277	3-13-1
7	**EC2**	Financial implications and other risks and opportunities due to climate change	full	133f., 137, 218, 220, 224	
1,6	**EC3**	Coverage of the organization´s defined benefit plan obligations	full	101, 295-303	
	EC4	Significant financial assistance received from government	full		3-5-2
	EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	full		3-7-8
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	partial	108-115, 122	3-8-1
6	**EC7**	Local hiring: policy and proportion of senior management hired from the local community	full	104	
	EC8	Infrastructure investments and services provided primarily for public benefit	full	150	3-3-BHC-1, 3-8-7, 3-10-BCS-2, 3-13-3

UNGC principles	GRI Indicators according to the G3.1 Guidelines		Reported	Page reference	Online annex
7, 8, 9	**ENVIRONMENTAL PERFORMANCE – MANAGEMENT APPROACH**		full	49f., 113, 132-135, 137-144, 147, 191, 221	3-1.3-1
8,9	**EN1**	Materials used by weight or volume	partial	114f.	3-8-8
8,9	**EN2**	Percentage of materials used that are recycled input materials	not reported		
8	**EN3/ EN4**	Direct and indirect energy consumption by primary energy source	full	132f.	
7	**EN5**	Energy saved due to conservation and efficiency improvements	full	133f.	3-12.2-1
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	full	133f.	3-12.2-2
8	**EN8**	Total water withdrawal by source	full	139	
	EN9	Water sources significantly affected by withdrawal of water	full	138	3-12.3-1
	EN10	Percentage and total volume of water recycled and reused	full	139	3-12.3-3
8	**EN11**	Use of land in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	partial		3-12.5-2
8	**EN12**	Significant impacts of activities, products, and services on biodiversity in protected areas	full	142f.	3-12.5-1, 3-12.5-2
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	full	142f.	3-12.5-1
8,9	**EN16**	Total direct and indirect greenhouse gas emissions by weight	full	135f.	3-12.2-5
8	**EN17**	Other relevant indirect greenhouse gas emissions by weight	full	133, 135, 137	3-12.2-6
7,8,9	**EN18**	Initiatives to reduce greenhouse gas emissions and reductions achieved	full	133f.	3-12.2-1, 3-12.2-3, 3-12.2-4, 3-12.2-6
8	**EN19**	Emissions of ozone-depleting substances by weight	full	137	
8	**EN20**	NOx, SOx, and other significant air emissions by type and weight	full	137f.	3-12.2-7
8	**EN21**	Total water discharge by quality and destination	full	140	
8	**EN22**	Total weight of waste by type and disposal method	full	141f.	3-12.2-4, 3-12.4-1, 3-12.4-2
8	**EN23**	Total number and volume of significant spills	full	144, 147	3-12.6-1
7,8,9	**EN26**	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	full	67, 82-84, 124-126, 133f.	3-10-BCS-3, 3-12.2-2, 3-12.5-1
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category	not reported		
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	full	221, 304, 321, 323f.	
	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	full	133, 137	3.12.2-6
	SOCIAL PERFORMANCE				
1, 3, 6	**Labor Practices and Decent Work – Management Approach**		full	49f., 94-107, 128, 221	3-1.3-1
	LA1	Total workforce by employment type, employment contract, and region, broken down by gender	full	96-98	3-7-1, 3-7-3, 3-7-17
6	**LA2**	Total number and rate of new employee hires and employee turnover by age group, gender, and region	partial	97	3-7-2, 3-7-19
1,3	**LA4**	Employees covered by collective bargaining agreements	full	103	3-7-12
1,3	**LA5**	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	full	102	3-6-2, 3-7-10, 3-7-12
1	**LA7**	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender	partial	128f.	3-11-1
1	**LA8**	Prevention and risk-control programs in place regarding serious diseases	fully	107, 128f.	3-7-21, 3-11-2, 3-11-3
	LA10	Average hours of training per year per employee by gender, and by employee category	partial	100	
	LA11	Programs for skills management and lifelong learning that support the continued employability	full	98-100, 106f.	3-7-5, 3-7-6, 3-7-7
	LA12	Percentage of employees recieving regular performance reviews	full	96, 98	
1,6	**LA13**	Composition of governing bodies and breakdown of employees according to age group/gender/culture	partial	104, 106, 188, 337-340	3-7-15
1,6	**LA14**	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	partial	100	3-7-8
1,6	**LA15**	Return to work and retention rates after parental leave, by gender	full	105	3-7-18
1-6	**Human Rights – Management Approach**		full	49f., 84, 101, 103, 109-112, 132, 191-193	3-8-7
1-6	**HR1**	Significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening (percentage and total number)	partial	132	
1-6	**HR2**	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken	partial	109f.	3-8-4
1-6	**HR3**	Employee training on human rights, including the percentage of employees trained	partial	101, 111	3-8-5
1,2,6	**HR4**	Total number of incidents of discrimination and corrective actions taken	partial	191, 193, 216	
1-5	**HR5-7**	Operations and significant suppliers: support of freedom of association and collective bargaining, abolition of child labor, elimination of all forms of forced or compulsory labor	full	101-103, 109-112	3-7-12
	HR10	Percentage/Number of operations verified for observance of human rights	partial	101, 109-112, 191-193	
	HR11	Number of grievances relating to human rights and measures taken	partial	101, 109-112, 191, 193, 216	
10	**Social Performance: Society – Management Approach**		full	49f., 130f., 138, 148f., 191-193, 221	3-1.3-1, 3-6-2, 3-13-2
	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	full	148	3-6-2, 3-13-2
10	**SO2**	Corruption: Percentage and total number of business units analyzed	partial	191f.	3-18.3-1
10	**SO3**	Corruption: Percentage of employees trained in anti-corruption	full	191f.	3-18.3-1
10	**SO4**	Actions taken in response to incidents of corruption	partial	191-193, 216, 221, 304, 321	3-18.3-1
10	**SO5**	Public policy positions and participation in public policy development and lobbying	full	122	3-6-2, 3-5-3, 3-10-6
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	full		3-6-2, 3-13-2
	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	full	221, 304, 321f.	
	SO8	Monetary value of significant fines and sanctions for non-compliance with laws and regulations	full	221, 304, 321-325	
	SO9	Operations with (potential) negative impacts on local communities	full	130f., 138, 144	3-11-3, 3-11-4
	SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	full	130f., 138, 144	3-12.3-2, 3-12.6-1
1, 8	**Product Responsibility – Management Approach**		full	49f., 116-128, 219-221	3-1.3-1, 3-6-2, 3-9-BHC-1, 3-9-BHC-2
1,8	**PR1**	Product life cycle stages for which health and safety impacts are assessed and percentage of products subject to such procedures	full	83, 119-121, 123-125, 127f.	3-10-2, 3-10-4, 3-10-BCS-2, 3-10-BMS-1
8	**PR3**	Type of product information required by procedures, and percentage of products subject to such information requirements	full	119-121, 123, 125, 127f.	3-10-BHC-1
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	partial		3-6-2
10	**PR6**	Programs for adherence to laws, standards, and voluntary codes related to marketing communications	full	116-119	3-9-BHC-1, 3-9-BHC-2
	PR9	Significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	full	221, 304, 321-324	

GRI-Statement

Global Reporting Initiative™

Statement
GRI Application Level Check

GRI hereby states that **Bayer AG** has presented its report "Annual Report 2013 - Augmented Version" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines. For methodology, see www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 29 January 2014

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative

A+ GRI REPORT GRI CHECKED

The "+" has been added to this Application Level because **Bayer AG** has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

***Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 23 January 2014. GRI explicitly excludes the statement being applied to any later changes to such material.*

Glossary

A

Adalat™ Drug product for the treatment of hypertension; active ingredient: nifedipine

Adempas™ Drug product for the treatment of two types of pulmonary hypertension: chronic thromboembolic pulmonary hypertension (CTEPH) and pulmonary arterial hypertension (PAH); active ingredient: riociguat

Advantage™ product line (Advantix™ and other brands) Flea, tick and worm control product for dogs and cats; active ingredient: imidacloprid

Aleve™/Apronax™/Flanax™ Analgesic; active ingredient: naproxen

Alka-Seltzer Plus™ Drug product that reduces pain and fever

Antacids Drug products to treat heartburn and acid-related stomach complaints

APEC™ Brand name for particularly heat-resistant polycarbonates for application at temperatures of up to 200 °Celsius

Arize™ Hybrid rice seed

Aspirin™ World-famous analgesic; active ingredient: acetylsalicylic acid

Aspirin™ Cardio Drug product for secondary prevention of heart attacks; active ingredient: acetylsalicylic acid

Avalox™/Avelox™ Drug product for the treatment of respiratory tract infections; active ingredient: moxifloxacin

B

Bayblend™ Brand name for polymer blends based on polycarbonate and acrylonitrile butadiene styrene

Baycox™ Drug product to control coccidiosis, a parasitic infectious disease in young farm animals; active ingredient: toltrazuril

Bayer Garden™/Bayer Advanced™ Umbrella brands for consumer home and garden products

Baytril™ Drug for the treatment of severe veterinary infections; active ingredient: enrofloxacin

Bepanthen™ Range of skincare and wound-healing products; active ingredient: dexpanthenol

Bepanthol™ Range of care products for dry, irritated skin; value-adding ingredient: panthenol

Berocca™ Dietary supplement containing B-group vitamins, vitamin C and minerals

Betaferon™/Betaseron™ Drug product for the treatment of multiple sclerosis (MS); active ingredient: interferon beta-1b

Breeze™ Blood glucose meter for people with diabetes for simple, safe and rapid use at home or while traveling

C

Canesten™ Antifungal medication to treat skin infections; active ingredient: clotrimazole or bifonazole

Capital invested (CI) Capital invested comprises the assets on which the company must obtain a return by generating an appropriate cash inflow; in some cases the cost of ultimately reproducing the assets must be earned in addition.

Cash flow return on investment (CFROI) The CFROI is the difference between the gross cash flow in the period and the cost of reproducing depletable assets, divided by the capital invested. The CFROI is thus a measure of the return on capital employed in the period.

Cash value added (CVA) This is the difference between the gross cash flow and gross cash flow hurdle. It is therefore the amount by which the gross cash flow exceeds the return and reproduction requirements. If CVA is positive, the investors' return and reproduction requirements have been satisfied and value has been created for the company.

CDP is an international, not-for-profit organization that works on behalf of analysts and investors to promote the transparent reporting of greenhouse gas emissions and water use (Water Disclosure Report) by companies. CDP publishes two climate rankings each year: the Climate Disclosure Leadership Index (CDLI) rates the extent and quality of the disclosure of climate-relevant data, while the best-rated companies are additionally listed in the Climate Performance Leadership Index (CPLI).

Glossary

Cipro™/Ciprobay™/Ciproxin™/Baycip™ Drug product for the treatment of infectious diseases; active ingredient: ciprofloxacin

Contour™ Line of blood glucose meters for people with diabetes for simple, safe and rapid use at home or while traveling; includes Contour™ Next, Contour™ XT, Contour™ Plus, Contour™ Next Link and Contour™ Next USB

Core earnings per share (core EPS) Core earnings per share are calculated by adjusting net income for amortization and impairment losses/loss reversals of intangible assets, impairment losses/loss reversals of property, plant and equipment, special items and the related tax effects to obtain the core net income, which is then divided by the weighted average number of issued ordinary shares. Core earnings per share are not defined in the International Financial Reporting Standards. By reporting this indicator, the company aims to give readers a clear picture of the results of operations and ensure comparability of data over time.

(Corporate) Compliance comprises the observance of statutory and company regulations on lawful and responsible conduct.

Corporate governance comprises the long-term management and oversight of the company in accordance with the principles of responsibility and transparency. The German Corporate Governance Code sets out basic principles for the management and oversight of listed companies.

Council™ Herbicide; active ingredient: triafamone; mainly used in rice

Credit default swaps (CDS) Credit default swaps are tradable insurance contracts used to hedge against the default of a borrower.

D

Diversity designates the variation within the workforce in terms of gender, origin, nationality, age, religion and physical incapacitation.

Drontal™ product line Dewormers for dogs and cats; active ingredients: combinations of praziquantel, pyrantel and febantel

E

EBIT EBIT comprises earnings before financial result and taxes.

Earnings before interest, taxes, depreciation and amortization (EBITDA) EBIT plus amortization and impairment losses on intangible assets and depreciation and impairment losses on property, plant and equipment, minus impairment loss reversals. EBITDA, EBITDA before special items and the EBITDA margin before special items are not defined in the International Financial Reporting Standards. EBITDA before special items is a meaningful indicator of operating performance since it is not affected by depreciation, amortization, impairments or special items. By reporting this indicator, the company aims to give readers a clear picture of the results of operations and ensure comparability of data over time.

Emissions factors Country- or production plant-specific factors in kg CO_2e/MWh for converting produced/consumed energy (electricity and heat) values into greenhouse gas volumes. These emissions factors can be based on either statistical data (such as IEA, WIR, Defra/DECC, etc.) or on operator and supplier data, should they be available.

EMTN program The multi-currency European Medium Term Notes (EMTN) program is a documentation platform that enables Bayer to raise capital by quickly issuing debt on the global capital market. Maturities, currencies and conditions can be very flexibly designed.

Earnings per share (EPS) EPS is calculated by dividing Group net income by the weighted average number of issued shares as defined in IAS 33.

Essure™ Non-surgical permanent birth control method

Eylea™/Eylia™ is a recombinant fusion protein consisting of parts of human VEGF receptors 1 and 2 extracellular domains fused to the Fc portion of human IgG1 and formulated as an iso-osmotic solution for intravitreal administration. It acts as a soluble decoy receptor that binds to VEGF-A and placental growth factor (PGF) with a higher affinity than their natural receptors and can therefore inhibit the binding and activation of these cognate VEGF receptors.

F

FiberMax™ Cotton seed

G

Gadavist™/Gadovist™ Contrast agent for magnetic resonance imaging of the central nervous system, liver and kidneys; active ingredient: gadobutrol

GHG Protocol The Greenhouse Gas Protocol Corporate Standard is an internationally recognized standard for the recording and reporting of greenhouse gas emissions. It covers direct (Scope 1) and indirect (Scope 2) greenhouse gas emissions relating to a company's value-added chains, as well as emissions resulting from third-party and acquired upstream services (Scope 3).

Global commercial paper program Commercial paper (CP) issued under Bayer's program is a short-term, unsecured debt instrument normally issued at a discount and redeemed at nominal value. It is a flexible way of obtaining short-term funding on the capital market.

Glucobay™ Drug product for the treatment of diabetes; active ingredient: acarbose

GlyTol™ Herbicide tolerance trait; mainly used in cotton

GRI (Global Reporting Initiative) is a charitable organization that works on behalf of the dissemination and optimization of sustainability reporting. The GRI guidelines are considered the most frequently used and internationally most recognized standard for sustainability reporting. These guidelines are evolved in a multi-stakeholder process. GRI was established in 1997 by the Ceres Coalition of environmentally responsible economies and the United Nations Environment Programme (UNEP).

Gross cash flow (GCF) The gross cash flow comprises income after income taxes, plus income taxes, plus financial result, minus income taxes paid or accrued, plus depreciation, amortization and impairment losses, minus impairment loss reversals, plus/minus changes in pension provisions, minus gains/plus losses on retirements of noncurrent assets, minus gains from the remeasurement of already held assets in step acquisitions. The change in pension provisions includes the elimination of non-cash components of EBIT. It also contains benefit payments during the year.

Gross cash flow hurdle The GCF hurdle is the gross cash flow that needs to be generated to satisfy investors' return and reproduction requirements.

H

Harmonix™ Insect Control Biological household insecticide based on pyrethrum, derived from the chrysanthemum flower

HDI Hexamethylene diisocyanate, a raw material for polyurethane coatings

Hybrid bond A hybrid bond is a corporate bond with equity-equivalent properties, usually with either no maturity date or a very long maturity. Due to its subordination, issuer bankruptcy carries a lower likelihood of repayment than a normal bond.

I

Iberogast™ Plant-based combination product with a broad spectrum of action in various parts of the digestive system

Interface™ Fungicide with Stressgard™ Formulation Technology for professional use on turfgrasses

InVigor™ Summer canola seed

K

Kogenate™ Drug product for the treatment of hemophilia; active ingredient: recombinant Factor VIII

L

Laif™ Plant-based medicine to treat mild depression; active ingredient: St. John's wort

Levitra™ Drug product for the treatment of erectile dysfunction; active ingredient: vardenafil

Liberty™ Herbicide; active ingredient: glufosinate-ammonium; mainly used in genetically modified crops (cotton, canola, soybeans and corn)

Life Sciences Field of activities comprising particularly agriculture and health care. At Bayer this refers to the activities of the CropScience and HealthCare subgroups.

Glossary

M

Magnevist™ Contrast agent for MRI diagnosis of the central nervous system and body; active ingredient: gadopentetate dimeglumine

Makrolon™ Brand name for polycarbonate

Marengo™ Pre-emergent herbicide, active ingredient: indaziflam; mainly used for ornamentals

Maxforce™ Range of bait products against ants and roaches

MDI Diphenylmethane diisocyanate, an important raw material for rigid polyurethane foam used in the thermal insulation of buildings and refrigerated appliances

Mirena™ Intrauterine contraceptive; active ingredient: levonorgestrel

N

Natria™ Product line in the Bayer Garden™ range of consumer products; based on biological ingredients

Neonicotinoids Chemical class of systemic insecticides

Net cash flow Net cash flow is the cash flow from operating activities as defined in IAS 7.

Nexavar™ Cancer drug to treat patients with hepatocellular carcinoma, advanced renal cell carcinoma or – in the United States – advanced differentiated thyroid cancer; active ingredient: sorafenib

O

One A Day™ Multivitamin product

Over the counter (OTC) In the health care field, OTC medicines are those obtainable without a prescription. In finance, OTC represents trade between financial market participants outside of an organized exchange. OTC transactions are nevertheless subject to securities trading laws.

P

Phase I-III studies Phases in the development of a drug product. The active ingredient candidate is tested in healthy subjects (with the exception of oncology) in Phase I, and in sick patients in Phases II and III. The studies are subject to strict legal requirements and documentation procedures.

Price/cash flow ratio The price/cash flow ratio is the ratio of the share price to gross cash flow per share. It shows how long it would take for the company's cash flow to cover the share price.

Price/EPS ratio (price/earnings ratio) This is the ratio of the current share price to earnings per share. A high price/EPS ratio indicates that the market assigns a high value to the stock in the expectation of future earnings growth.

R

Redoxon™ Vitamin product containing vitamin C and zinc

Responsible Care™ initiative Voluntary global initiative by the chemical industry aimed at achieving continuous improvement in environmental protection, occupational health and safety, product stewardship, and the safety of sites and their immediate surroundings.

Riociguat Active ingredient from a new class of vasodilative substances; stimulates soluble guanylate cyclase (sGC), an enzyme. In January, the European Committee for Medicinal Products for Human Use (CHMP) recommended that riociguat be approved to treat chronic thromboembolic pulmonary hypertension (CTEPH) and pulmonary arterial hypertension (PAH). Riociguat was approved in the United States and Japan under the trade name Adempas™.

Roundup Ready™ Herbicide tolerance trait for crops, developed by Monsanto; mainly used in soybeans, corn, oilseed rape/canola, cotton and sugar beet

S

Seresto™ Flea and tick collar for dogs and cats; active ingredients: imidacloprid and flumethrin

Sivanto™ Insecticide; active ingredient: flupyradifurone; mainly used in fruit and vegetables

Specticle™ Herbicide; active ingredient: indaziflam; mainly for lawn care by professional users

Stivarga™ Drug product for the treatment of metastatic colorectal cancer and, in the United States, gastrointestinal stromal tumors. It is an oral multikinase inhibitor that blocks certain kinases responsible for tumor growth; active ingredient: regorafenib

Supradyn™ Dietary supplement (B-group vitamins with niacin, vitamin C and iron)

Syndicated credit facility Credit line agreed with a group of banks. Generally used for extensive financing requirements, such as when making an acquisition, to increase available liquidity or as security for the issuance of debt instruments. The credit facility can be utilized and repaid flexibly, either in full or in portions, during its term.

T

Talcid™ Antacid to treat heartburn and stomach complaints; active ingredient: hydrotalcite

TDI Toluene diisocyanate, an important raw material for flexible polyurethane foam used in upholstery, mattresses and car seats

TwinLink™ Dual insecticide resistance and herbicide tolerance trait; mainly used in cotton

U

Ultravist™ Contrast agent for X-ray examinations including computed tomography; active ingredient: iopromide

UNGC (United Nations Global Compact) The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption. By doing so, business – as a primary driver of globalization – can help ensure that markets, commerce, technology and finance advance in ways that benefit economies and societies everywhere. By committing to the UNGC, companies agree to document each year their efforts to uphold the ten principles.

V

Velum™/Verango™ Nematicide; active ingredient: fluopyram; mainly used in fruit and vegetables

W

Weighted average cost of capital (WACC) The weighted average cost of capital (WACC) represents the return expected by investors on the capital invested in the company. It is computed as a weighted average of the cost of equity and debt. The cost of equity is derived from capital market information and represents the return expected by stockholders, while the cost of debt represents the conditions at which the company can borrow money over the long term.

White & Black™ Cough and cold medicine

WHO Class I The World Health organization (WHO) divides crop protection products into various hazard classes. Class I products are deemed to be extremely hazardous.

World-scale production facility Very large production facility that allows substantial economies of scale

X

Xarelto™ Direct Factor Xa inhibitor in tablet form. Xarelto™ is approved for the prevention and treatment of thrombosis in a wide range of venous and arterial indications, including stroke prevention in patients with atrial fibrillation; active ingredient; rivaroxaban

Xofigo™ Drug product for the treatment of patients with castration-resistant prostate cancer with symptomatic bone metastases and no known visceral metastases; active ingredient: radium-223 dichloride

Y

YAZ™/Yasmin™/Yasminelle™ Combined oral contraceptives; active ingredients: ethinyl estradiol and drospirenone

Z

Zetia™ Cholesterol-lowering drug from Merck & Co., co-marketed by Bayer in Japan; active ingredient: ezetimib

For explanations of further specialist terminology, go to: www.investor.bayer.com > Stock > Glossary

Reporting Principles

This Annual Report provides comprehensive and transparent information on all the topics we believe are important for the company and its stakeholders.

The consolidated financial statements of the Bayer Group were prepared according to the International Financial Reporting Standards (IFRS) and the applicable provisions of the German Commercial Code. The combined management report complies with the German Commercial Code and German financial reporting standards. The financial statements of Bayer AG were prepared according to the requirements of the German Commercial Code and Stock Corporation Act. The Compensation Report for the Board of Management complies with the recommendations of the German Corporate Governance Code. The consolidated financial statements and the combined management report are published in line with statutory disclosure requirements.

The Bayer Group's sustainability reporting is aligned to the G3.1 guidelines of the Global Reporting Initiative (GRI) and the 10 principles of the U.N. Global Compact (UNGC). The GRI has checked and confirmed that level A+ has been maintained. A statement to this effect and a GRI index listing the corresponding UNGC principles can be found on page 344f. A comprehensive overview of the GRI indicators and an outline of our progress in implementing the 10 UNGC principles (corresponding to the Advanced Level) are available online. Our reporting is also aligned to international guidelines and recommendations, including those on the definition and selection of non-financial indicators and on reporting.

We follow the OECD guidelines and comply with the ISO 26000 standard. In selecting and measuring our key data we also take into account the recommendations of the European Federation of Financial Analysts Societies (EFFAS) in the case of non-financial indicators, and those of the Greenhouse Gas Protocol regarding greenhouse gas emissions. We also consider the recommendations of the World Business Council for Sustainable Development (WBCSD) and the European Chemical Industry Council (CEFIC). This year we will again submit a declaration of conformity with the German Sustainability Code.

DATA COLLECTION FOR FINANCIAL AND NON-FINANCIAL INDICATORS

Credible reporting is based on transparency and data validity. We collect the data of all relevant organizational units and companies worldwide that fall within the scope of the Bayer Group's consolidated financial statements.

All HSE (health, safety and environmental protection) performance indicators for the Group are collated in our Group-wide site information system (BaySIS). The HSE data cover all fully consolidated companies in which Bayer owns at least 50% of the shares. The performance indicators of these companies are fully consolidated, irrespective of the exact proportion of the shares held by Bayer. Data on occupatio environmental incidents are collected at all sites worldwide. Environmentally relevant indicators are measured at all production sites.

We mainly use SAP systems to collect financial data worldwide. We use the global HR information system and the associated reporting application – the Sustainability Management Annual Reporting Tool (SMART) – to collect HR indicators and social data.

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

EXTERNAL VERIFICATION

PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft has audited the consolidated financial statements of Bayer AG, Leverkusen, and the combined management report for the fiscal year from January 1, 2013, to December 31, 2013, and has issued an unqualified opinion.

All of the online annexes that supplement the management report in the augmented online version of the Bayer Annual Report 2013 ("Annual Report 2013 – Augmented Version") for the fiscal year from January 1, 2013, to December 31, 2013, and the parts of the Annual Report 2013 entitled "Investor Information" and "Reporting Principles" have been reviewed by PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft on a limited assurance basis.

Five-Year Summary

[Table 1.2]

	2009	2010	2011	2012	2013
	€ million	€ million	€ million	€ million	€ million
Bayer Group					
Sales	31,168	35,088	36,528	39,741	40,157
Sales outside Germany	86.7%	87.4%	87.3%	88.3%	87.9%
EBIT[1]	3,006	2,730	4,149	3,928	4,934
EBIT before special items[2]	3,772	4,452	5,025	5,639	5,773
EBITDA[2]	5,815	6,286	6,918	6,916	7,830
EBITDA before special items[2]	6,472	7,101	7,613	8,280	8,401
Income before income taxes	1,870	1,721	3,363	3,176	4,207
Income after income taxes	1,359	1,310	2,472	2,453	3,186
Earnings per share (€)[3]	1.70	1.57	2.99	2.91	3.86
Noncurrent assets	**34,049**	**33,188**	**32,697**	**32,308**	**32,289**
of which goodwill and other intangible assets	21,546	20,163	19,455	18,757	18,776
of which property, plant and equipment	9,409	9,835	9,823	9,898	10,015
Current assets	**16,993**	**18,318**	**20,068**	**19,010**	**19,028**
Inventories	6,091	6,104	6,368	6,991	7,129
Receivables and other current assets	8,177	9,374	11,846	10,321	10,237
Cash and cash equivalents	2,725	2,840	1,770	1,698	1,662
Financial liabilities	**12,949**	**11,833**	**11,679**	**9,530**	**9,031**
Noncurrent	11,460	9,944	7,995	6,962	5,590
Current	1,489	1,889	3,684	2,568	3,441
Interest expense – net	(548)	(499)	(335)	(252)	(355)
Return on equity	7.7%	6.9%	13.0%	13.0%	16.2%
Gross cash flow[4]	4,658	4,771	5,172	4,556	5,832
Capital expenditures (total)	1,669	1,621	1,666	1,929	2,157
Depreciation and amortization	2,660	2,571	2,521	2,641	2,611
Research and development expenses	2,746	3,053	2,932	3,013	3,190
Equity including non-controlling interest (total)	**18,951**	**18,896**	**19,271**	**18,551**	**20,804**
Capital stock	2,117	2,117	2,117	2,117	2,117
Reserves	16,834	16,779	17,154	16,434	18,687
Net income	1,359	1,301	2,470	2,403	3,189
Non-controlling interest	54	63	59	100	86
Liabilities (total)	**32,091**	**32,610**	**33,494**	**32,767**	**30,513**
Total assets	**51,042**	**51,506**	**52,765**	**51,318**	**51,317**
Equity ratio	**37.1%**	**36.7%**	**36.5%**	**36.1%**	**40.5%**
Bayer AG					
Net income	2,226	1,245	1,125	889	2,498
Allocation to (withdrawal from) retained earnings	1,068	5	(239)	(682)	761
Total dividend payment	1,158	1,240	1,364	1,571	1,737
Dividend per share (€)	1.40	1.50	1.65	1.90	2.10

[Table 1.2 (continued)]

	2009	2010	2011	2012	2013
Employees					
Personnel expenses (incl. pension plans) (€ million)	7,776	8,099	8,726	9,194	9,430
Employees[5] (as of Dec. 31)	111,000	111,400	111,800	110,000	113,200
Percentage of women in senior management	20	21	22	23	25
Number of nationalities in the Group Leadership Circle	22	21	22	23	31
Proportion of employees with health insurance (%)	95	94	94	94	95
Proportion of employees covered by collective agreements on pay and conditions (%)	56	55	54	53	55
Safety					
Recordable Incident Rate for Bayer employees (RIR)	0.62	0.62	0.56	0.49	0.47
Lost Time Recordable Incident Rate for Bayer employees (LTRIR)	0.40	0.34	0.31	0.27	0.26
Loss of Primary Containment Incident Rate (LoPC-IR)[6]	–	–	–	0.38	0.35
Number of transport incidents	10	8	7	6	11
Environmental Protection					
Direct greenhouse gas emissions (CO_2 equivalents in million t)[7]	4.57	4.80	4.23	4.24	4.09
Indirect greenhouse gas emissions (CO_2 equivalents in million t)[7]	3.53	3.70	3.92	4.12	4.29
Volatile organic compounds (VOC) (thousand t/a)[8]	2.59	2.54	2.69	2.60	2.27
Ozone depleting substances (t/a)[9]	17.45	20.77	16.31	16.28	15.65
Total organic carbon (TOC) (thousand t/a)	1.35	1.42	1.50	1.42	1.53
Total phosphorus in wastewater (thousand t/a)	0.74	0.09	0.08	0.15	0.11
Total nitrogen in wastewater (thousand t/a)	0.64	0.49	0.53	0.70	0.69
Hazardous waste generated (thousand t/a)	375	354	474	603	467
Hazardous waste landfilled (thousand t/a)	89	56	122	175	53
Water use (million m^3/a)	407	474	411	384	361
Primary energy consumption (petajoules [10^{15} joules]/a)	48.12	51.63	50.10	49.05	47.58
Secondary energy consumption (petajoules [10^{15} joules]/a)	29.20	34.08	34.85	34.14	33.27
Energy efficiency (MWh/t)[10]	4.09	3.77	3.63	3.50	3.44

2012 figures restated; figures for 2009–2011 as last reported

[1] EBIT = earnings before financial result and taxes
[2] For definition see Combined Management Report, Chapter 16.2 "Calculation of EBIT(DA) Before Special Items."
[3] Earnings per share as defined in IAS 33 = net income divided by the average number of shares. For details see Note [16] to the consolidated financial statements.
[4] For definition see Combined Management Report, Chapter 16.5 "Liquidity and Capital Expenditures of the Bayer Group."
[5] Full-time equivalents
[6] LoPC-IR has been recorded since 2012.
[7] Portfolio-adjusted in accordance with the Greenhouse Gas Protocol
[8] Volatile organic compounds (VOC) excluding methane
[9] Ozone-depleting substances (ODS) in CFC-11 equivalents
[10] Energy efficiency: quotient of total energy consumption and manufactured sales volume. For MaterialScience, only manufactured sales volumes that also form the basis for calculating MaterialScience-specific emissions are taken into account.

Subsidiary and affiliated companies of the Bayer Group as of December 31, 2013, pursuant to Section 313 of the German Commercial Code

The fully consolidated companies are listed in the following table:

Fully Consolidated Subsidiaries [Table 4.22-1]

Company Name	Place of Business	Bayer's interest
		%
Europe		
AgrEvo Verwaltungsgesellschaft mbH	Frankfurt am Main, Germany	100
Alcafleu Management GmbH & Co. KG	Schönefeld, Germany	99.9
Aviator Acquisition AS	Oslo, Norway	100
Baulé S.A.S.	Romans-sur-Isère, France	100
Bayer (Schweiz) AG	Zurich, Switzerland	100
Bayer 04 Immobilien GmbH	Leverkusen, Germany	100
Bayer 04 Leverkusen Fußball GmbH	Leverkusen, Germany	100
Bayer A/S	Lyngby, Denmark	100
Bayer AB	Solna, Sweden	100
Bayer Agriculture Limited	Cambridge, U.K.	100
Bayer Altersversorgung GmbH	Leverkusen, Germany	100
Bayer Animal Health GmbH	Leverkusen, Germany	100
Bayer Antwerpen NV	Antwerp, Belgium	100
Bayer AS	Oslo, Norway	100
Bayer Austria Gesellschaft m.b.H.	Vienna, Austria	100
Bayer B.V.	Mijdrecht, Netherlands	100
Bayer Beteiligungsverwaltung Goslar GmbH	Leverkusen, Germany	100
Bayer Bitterfeld GmbH	Bitterfeld-Wolfen, Germany	100
Bayer Bulgaria EOOD	Sofia, Bulgaria	100
Bayer Business Services GmbH	Leverkusen, Germany	100
Bayer Capital Corporation B.V.	Mijdrecht, Netherlands	100
Bayer Chemicals AG	Leverkusen, Germany	100
Bayer Consumer Care AG	Basel, Switzerland	100
Bayer Consumer Care Deutschland GmbH	Berlin, Germany	100
Bayer CropScience (Portugal)-Produtos para a Agricultura, Lda	Carnaxide, Portugal	100
Bayer CropScience AG	Monheim am Rhein, Germany	100
Bayer CropScience Beteiligungsgesellschaft mbH	Frankfurt am Main, Germany	100
Bayer CropScience Deutschland GmbH	Langenfeld, Germany	100
Bayer CropScience Holding SA	Lyon, France	100
Bayer CropScience Holdings Limited	Cambridge, U.K.	100
Bayer CropScience Limited	Cambridge, U.K.	100
Bayer CropScience NV	Diegem, Belgium	100
Bayer CropScience S.r.l.	Milan, Italy	100
Bayer CropScience Vermögensverwaltungsgesellschaft mbH	Leverkusen, Germany	100
Bayer CropScience, S.L.	Quart de Poblet, Spain	100
Bayer d.o.o.	Belgrade, Serbia	100
Bayer d.o.o.	Ljubljana, Slovenia	100
Bayer d.o.o.	Zagreb, Croatia	100
Bayer Direct Services GmbH	Leverkusen, Germany	100
Bayer Gastronomie GmbH	Leverkusen, Germany	100
Bayer Gesellschaft für Beteiligungen mbH	Leverkusen, Germany	100
Bayer Global Investments B.V.	Mijdrecht, Netherlands	100
Bayer HealthCare AG	Leverkusen, Germany	100

Subsidiary and affiliated companies of the Bayer Group
as of December 31, 2013

Fully Consolidated Subsidiaries [Table 4.22-1 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Bayer HealthCare Manufacturing S.r.l.	Milan, Italy	100
Bayer Hellas A.G.	Athens, Greece	100
Bayer Hispania, S.L.	Sant Joan Despi, Spain	100
Bayer Holding France SCS	Lyon, France	100
Bayer Hungária Kft.	Budapest, Hungary	100
Bayer Innovation GmbH	Leverkusen, Germany	100
Bayer Intellectual Property GmbH	Monheim am Rhein, Germany	100
Bayer International SA	Fribourg, Switzerland	100
Bayer Limited	Dublin, Ireland	100
Bayer Ltd.	Kiev, Ukraine	100
Bayer MaterialScience A/S	Otterup, Denmark	100
Bayer MaterialScience AG	Leverkusen, Germany	100
Bayer MaterialScience B.V.	Foxhol, Netherlands	100
Bayer MaterialScience Brunsbüttel Energie GmbH	Brunsbüttel, Germany	100
Bayer MaterialScience Customer Services GmbH	Leverkusen, Germany	100
Bayer MaterialScience GmbH	Darmstadt, Germany	100
Bayer MaterialScience NV	Tielt, Belgium	100
Bayer MaterialScience Oldenburg GmbH & Co. KG	Oldenburg, Germany	100
Bayer MaterialScience S.p.A.	Milan, Italy	99
Bayer MaterialScience S.r.l.	Milan, Italy	100
Bayer MaterialScience, S.L.	Sant Joan Despi, Spain	100
Bayer Nordic SE	Espoo, Finland	100
Bayer NV	Diegem, Belgium	100
Bayer Oy	Turku, Finland	100
Bayer Pharma AG	Berlin, Germany	100
Bayer Polyols S.N.C.	Puteaux, France	100
Bayer Polyurethanes B.V.	Mijdrecht, Netherlands	100
Bayer Portugal, SA	Carnaxide, Portugal	100
Bayer Public Limited Company	Newbury, U.K.	100
Bayer R&I B.V.	Maastricht, Netherlands	100
Bayer Real Estate GmbH	Leverkusen, Germany	100
Bayer S.A.S.	Lyon, France	100
Bayer S.p.A.	Milan, Italy	100
Bayer s.r.o.	Prague, Czech Republic	100
Bayer Santé Familiale SAS	Gaillard, France	100
Bayer Santé SAS	Loos, France	100
Bayer SARL	Lyon, France	100
Bayer Schering Pharma AG	Berlin, Germany	100
Bayer Seeds B.V.	Mijdrecht, Netherlands	100
Bayer Sp. z o.o.	Warsaw, Poland	100
Bayer Technology Services GmbH	Leverkusen, Germany	100
Bayer Vital GmbH	Leverkusen, Germany	100
Bayer Weimar GmbH und Co. KG	Weimar, Germany	100
Bayer World Investments B.V.	Mijdrecht, Netherlands	100
Bayer, spol. sr.o.	Bratislava, Slovakia	100
Bayer-Handelsgesellschaft mit beschränkter Haftung	Leverkusen, Germany	100
Berlimed, S.A.	Madrid, Spain	100
Berlis AG	Zurich, Switzerland	100
Biogenetic Technologies B.V.	Rotterdam, Netherlands	100
Chemion Logistik GmbH	Leverkusen, Germany	100
Conceptus SAS	Versailles, France	100
Currenta GmbH & Co. OHG	Leverkusen, Germany	60
Dritte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100

Fully Consolidated Subsidiaries [Table 4.22-1 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Dritte K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100
Epurex Films GmbH & Co. KG	Bomlitz, Germany	100
Erste Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Erste K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100
Euroservices Bayer GmbH	Leverkusen, Germany	100
EuroServices Bayer, S.L.	Sant Joan Despi, Spain	100
Fünfte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Generics Holding GmbH	Leverkusen, Germany	100
GP Grenzach Produktions GmbH	Grenzach-Wyhlen, Germany	100
Hild Samen GmbH	Marbach am Neckar, Germany	100
Intendis GmbH	Berlin, Germany	100
Intendis Manufacturing S.p.A.	Milan, Italy	100
Intraserv GmbH & Co. KG	Schönefeld, Germany	100
Jenapharm GmbH & Co. KG	Jena, Germany	100
KOSINUS Grundstücks-Verwaltungsgesellschaft mbH & Co. Gamma OHG	Schönefeld, Germany	100
KVP Pharma+Veterinär Produkte GmbH	Kiel, Germany	100
Marotrast GmbH	Jena, Germany	100
Mediwest Norway AS	Oslo, Norway	100
Medrad Belgium BVBA	Diegem, Belgium	100
Medrad Denmark ApS	Lyngby, Denmark	100
Medrad Europe B.V.	Maastricht, Netherlands	100
Medrad France S.A.R.L.	Rungis, France	100
Medrad Italia S.r.l.	Cava Manara, Italy	100
Medrad Medizinische Systeme GmbH	Leverkusen, Germany	100
Medrad Sweden AB	Mölndal, Sweden	100
Medrad UK Limited	Ely, U.K.	100
MENADIER Heilmittel GmbH	Berlin, Germany	100
Nunhems B.V.	Haelen, Netherlands	100
Nunhems France S.A.R.L.	Soucelles, France	100
Nunhems Hungary Kft.	Szolnok, Hungary	100
Nunhems Italy S.r.l.	St. Agata Bolognes, Italy	100
Nunhems Netherlands B.V.	Haelen, Netherlands	100
Nunhems Poland Sp. z o.o.	Poznan, Poland	100
Nunhems Spain, S.A.	Valencia, Spain	100
Pallas Versicherung AG	Leverkusen, Germany	100
Pandias Re AG	Luxembourg City, Luxembourg	100
PROPHYTA Biologischer Pflanzenschutz GmbH	Malchow, Germany	100
SC Bayer SRL	Bucharest, Romania	100
Schering Holdings Limited	Newbury, U.K.	100
Schering-Kahlbaum Gesellschaft mit beschränkter Haftung	Berlin, Germany	100
Sechste Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Siebte Bayer VV GmbH	Leverkusen, Germany	100
Steigerwald Arzneimittelwerk GmbH	Darmstadt, Germany	100
TECTRION GmbH	Leverkusen, Germany	100
TOO Bayer KAZ	Astana, Kazakhstan	100
TravelBoard GmbH	Leverkusen, Germany	100
UAB Bayer	Vilnius, Lithuania	100
Vierte Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
ZAO Bayer	Moscow, Russia	100
Zweite Bayer Real Estate VV GmbH & Co. KG	Schönefeld, Germany	100
Zweite K-W-A Beteiligungsgesellschaft mbH	Leverkusen, Germany	100

Subsidiary and affiliated companies of the Bayer Group
as of December 31, 2013

Fully Consolidated Subsidiaries [Table 4.22-1 (continued)]

Company Name	Place of Business	Bayer's interest
		%
North America		
AgraQuest Holding Inc.	Davis, U.S.A.	100
AgraQuest, Inc.	Davis, U.S.A.	100
Athenix Corp.	Research Triangle Park, U.S.A.	100
Bayer Business and Technology Services LLC	Pittsburgh, U.S.A.	100
Bayer Canadian Holdings Inc.	Toronto, Canada	100
Bayer Corporation	Pittsburgh, U.S.A.	100
Bayer Cotton Seed International Inc.	Research Triangle Park, U.S.A.	51
Bayer CropScience Holding Inc.	Research Triangle Park, U.S.A.	100
Bayer CropScience Holdings Inc.	Calgary, Canada	100
Bayer CropScience Inc.	Calgary, Canada	100
Bayer CropScience Inc.	Research Triangle Park, U.S.A.	100
Bayer CropScience LLC	Research Triangle Park, U.S.A.	100
Bayer CropScience LP	Research Triangle Park, U.S.A.	100
Bayer Essure Inc.	Milpitas, U.S.A.	100
Bayer HealthCare Animal Health Inc.	St. Joseph, U.S.A.	100
Bayer HealthCare LLC	Whippany, U.S.A.	100
Bayer HealthCare Pharmaceuticals Inc.	Pine Brook, U.S.A.	100
Bayer HealthCare Pharmaceuticals LLC	Berkeley, U.S.A.	100
Bayer Inc.	Toronto, Canada	100
Bayer International Trade Services Corporation	Weirton, U.S.A.	100
Bayer MaterialScience LLC	Pittsburgh, U.S.A.	100
Bayer Medical Care Inc.	Indianola, U.S.A.	100
Bayer Overseas Trade Services Corporation	Weirton, U.S.A.	100
Bayer PO LLC	New Martinsville, U.S.A.	100
Bayer Puerto Rico Inc.	San Juan, Puerto Rico	100
Bayer West Coast Corporation	Berkeley, U.S.A.	100
Collateral Therapeutics, Inc.	Richmond, U.S.A.	100
Cooper Land Company of New Jersey, Inc.	Whippany, U.S.A.	100
Guidance Interactive Healthcare, Inc.	Tarrytown, U.S.A.	100
Hornbeck Seed Company, Inc.	Lubbock, U.S.A.	100
iSense Corporation	Wilsonville, U.S.A.	100
iSense Development Corporation	Wilsonville, U.S.A.	100
NippoNex Inc.	Tarrytown, U.S.A.	100
NOR-AM Agro LLC	Whippany, U.S.A.	100
Nunhems Melons, Inc.	Parma, U.S.A.	100
Nunhems USA, Inc.	Morgan Hill, U.S.A.	100
SB Capital Corporation	Pine Brook, U.S.A.	100
Schering Berlin Inc.	Whippany, U.S.A.	100
STWB Inc.	Pittsburgh, U.S.A.	100
Texas Brine Company LLC	Houston, U.S.A.	0*
Asia/Pacific		
Bayer (China) Limited	Beijing, China	100
Bayer (Malaysia) Sdn. Bhd.	Petaling Jaya, Malaysia	100
Bayer (Sichuan) Animal Health Co., Ltd.	Chengdu, China	100
Bayer (South East Asia) Pte Ltd.	Singapore, Singapore	100
Bayer Australia Limited	Pymble, Australia	100
Bayer BioScience Pvt. Ltd.	Hyderabad, India	100
Bayer Business Services Philippines, Inc.	Taguig City, Philippines	100
Bayer Business Services Private Limited	Powai, India	100
Bayer Co. (Malaysia) Sdn Bhd	Petaling Jaya, Malaysia	100

* fully consolidated structured entity according to IFRS 10.B8 in conjunction with B19 (b) and (c)

Subsidiary and affiliated companies of the Bayer Group
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Fully Consolidated Subsidiaries [Table 4.22-1 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Bayer CropScience (China) Company Ltd.	Hangzhou, China	100
Bayer CropScience Holdings Pty Ltd.	East Hawthorn, Australia	100
Bayer CropScience K.K.	Tokyo, Japan	100
Bayer CropScience Limited	Mumbai, India	68.9
Bayer CropScience Ltd.	Dhaka, Bangladesh	60
Bayer CropScience Ltd.	Seoul, South Korea	100
Bayer CropScience Pty Limited	East Hawthorn, Australia	100
Bayer CropScience, Inc.	Laguna, Philippines	100
Bayer Far East Service Co. Ltd.	Hong Kong, China	100
Bayer HealthCare Co. Ltd.	Beijing, China	100
Bayer HealthCare Limited	Hong Kong, China	100
Bayer Holding Ltd.	Tokyo, Japan	100
Bayer Jinling Polyurethane Co., Ltd.	Nanjing, China	55
Bayer Korea Ltd.	Seoul, South Korea	100
Bayer MaterialScience (Beijing) Company Limited	Beijing, China	100
Bayer MaterialScience (China) Company Limited	Shanghai, China	100
Bayer MaterialScience (Qingdao) Co. Ltd.	Qingdao, China	100
Bayer MaterialScience (Shanghai) Management Company Limited	Shanghai, China	100
Bayer MaterialScience Limited	Hong Kong, China	100
Bayer MaterialScience Ltd.	Gimhae, South Korea	100
Bayer MaterialScience Ltd.	Tokyo, Japan	100
Bayer MaterialScience Private Limited	Mumbai, India	100
Bayer MaterialScience Pty Ltd.	Pymble, Australia	100
Bayer MaterialScience Taiwan Limited	Taipei, Taiwan	95.5
Bayer New Zealand Limited	Auckland, New Zealand	100
Bayer Pakistan (Private) Limited	Karachi, Pakistan	100
Bayer Pharmaceuticals Private Limited	Mumbai, India	100
Bayer Philippines, Inc.	Laguna, Philippines	100
Bayer Taiwan Company Ltd.	Taipei, Taiwan	100
Bayer Technology and Engineering (Shanghai) Company Limited	Shanghai, China	100
Bayer Thai Co., Ltd.	Bangkok, Thailand	100
Bayer TPU (Shenzhen) Co. Ltd.	Shenzhen, China	100
Bayer Vapi Private Limited	Vapi, India	100
Bayer Vietnam Ltd.	Bien Hoa City, Vietnam	100
Bayer Yakuhin, Ltd.	Osaka, Japan	100
Guangzhou Bayer MaterialScience Company Limited	Guangzhou, China	100
Imaxeon Pty. Ltd.	Rydalmere, Australia	100
Medipharm (Pvt) Ltd.	Lahore, Pakistan	100
Medrad Asia Pte. Ltd.	Singapore, Singapore	100
MEDRAD Medical Equipment Trading Company-Beijing	Beijing, China	100
Nihon Medrad K.K.	Osaka, Japan	100
Nunhems Beijing Seeds Co. Ltd.	Beijing, China	95
Nunhems India Private Limited	Hyderabad, India	100
PT. Bayer Indonesia	Jakarta, Indonesia	99.8
PT. Bayer MaterialScience Indonesia	Jakarta, Indonesia	99.9
Sumika Bayer Urethane Co., Ltd.	Osaka, Japan	60
Latin America/Africa/Middle East		
AgraQuest de México S.A. de C.V.	Mexico City, Mexico	100
Alimtec S.A.	Santiago, Chile	100
Bayer (Proprietary) Limited	Isando, South Africa	100
Bayer Algerie S.P.A.	Algiers, Algeria	100

Subsidiary and affiliated companies of the Bayer Group
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Fully Consolidated Subsidiaries [Table 4.22-1 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Bayer Boliviana Ltda.	Santa Cruz De La Sierra, Bolivia	100
Bayer de México, S.A. de C.V.	Mexico City, Mexico	100
Bayer East Africa Ltd.	Nairobi, Kenya	55
Bayer Finance & Portfolio Management S.A.	Santiago, Chile	100
Bayer Finance Ltda.	Santiago, Chile	100
Bayer Israel Ltd.	Hod Hasharon, Israel	100
Bayer Middle East FZE	Dubai, United Arab Emirates	100
Bayer Pearl Polyurethane Systems FZCO	Dubai, United Arab Emirates	51
Bayer Pearl Polyurethane Systems LLC	Dubai, United Arab Emirates	49*
Bayer S.A.	Asunción, Paraguay	100
Bayer S.A.	Bogotá, Colombia	100
Bayer S.A.	Buenos Aires, Argentina	100
Bayer S.A.	Caracas, Venezuela	100
Bayer S.A.	Casablanca, Morocco	100
Bayer S.A.	Colón, Panama	100
Bayer S.A.	Guatemala City, Guatemala	100
Bayer S.A.	Lima, Peru	95.2
Bayer S.A.	Managua, Nicaragua	100
Bayer S.A.	Quito, Ecuador	100
Bayer S.A.	San José, Costa Rica	100
Bayer S.A.	Santiago, Chile	100
Bayer S.A.	Santo Domingo, Dominican Republic	100
Bayer S.A.	São Paulo, Brazil	100
Bayer S.A. de C.V.	Tegucigalpa, Honduras	100
Bayer SA	Montevideo, Uruguay	100
Bayer Türk Kimya Sanayi Limited Sirketi	Istanbul, Turkey	100
Bayer, S.A.	San Salvador, El Salvador	100
Corporación Bonima S.A. de C.V.	Ilopango, El Salvador	99.6
FN Semillas S.A.	Buenos Aires, Argentina	100
Holding Manager S.A.	Buenos Aires, Argentina	100
Mediterranean Seeds Ltd.	Einat, Israel	100
Medrad do Brasil Ltda.	São Paulo, Brazil	100
Medrad Mexicana S. de R.L. de CV	Mexico City, Mexico	100
Nunhems Chile S.A.	Santiago, Chile	100
Nunhems do Brasil Comercio de Sementes Ltda.	Campinas, Brazil	100
Nunhems Mexico S.A. de C.V.	Queretaro, Mexico	100
Nunhems Tohumculuk Anonim Sirketi	Antalya, Turkey	100
Productos Químicos Naturales, S.A. de C.V.	Orizaba, Mexico	100
Schering do Brasil Química e Farmacêutica Ltda.	São Paulo, Brazil	100
Wehrtec Tecnologia Agricola Ltda.	Cristalina, Brazil	100

* fully consolidated subsidiary according to IFRS 10.B39

The following joint operations were included in the consolidated financial statements in line with Bayer's shares of their assets, liabilities, revenues and expenses:

Joint Operations [Table 4.22-2]

Company Name	Place of Business	Bayer's interest
		%
Indurisk Rückversicherung AG	Luxembourg City, Luxembourg	50
Lyondell Bayer Manufacturing Maasvlakte VOF	Rotterdam, Netherlands	50

The following associates and joint ventures were accounted for in the consolidated financial statements using the equity method:

Associated Companies and Joint Ventures Accounted for Using the Equity Method [Table 4.22-3]

Company Name	Place of Business	Bayer's interest
		%
Associated companies		
Paltough Industries (1998) Ltd.	Kibbutz Ramat Yochanan, Israel	25
PO JV, LP	Wilmington, U.S.A.	39.7
Joint ventures		
Bayer IMSA, S.A. de C.V.	Nuevo Leon, Mexico	50
Bayer Zydus Pharma Private Limited	Mumbai, India	50
DIC Bayer Polymer Ltd.	Tokyo, Japan	50

The following subsidiaries (including one structured entity) were reflected in the consolidated financial statements at cost due to their immateriality:

Immaterial Subsidiaries [Table 4.22-4]

Company Name	Place of Business	Bayer's interest
		%
Europe		
Agreva GmbH	Frankfurt am Main, Germany	100
Ausbildungsinitiative Rheinland GmbH	Leverkusen, Germany	100
Baulé UK Limited	Cheadle Hulme, U.K.	100
Bayer 04 Leverkusen Sportförderung gGmbH	Leverkusen, Germany	100
Bayer 04 Marketing GmbH	Leverkusen, Germany	100
Bayer AEH Limited	Cambridge, U.K.	100
Bayer AGCO Limited	Cambridge, U.K.	100
Bayer CropScience Norwich Limited	Cambridge, U.K.	100
Bayer d.o.o. Sarajevo	Sarajevo, Bosnia and Herzegovina	100
Bayer Healthcare S.r.l.	Milan, Italy	100
Bayer MaterialScience Oldenburg Verwaltungs-GmbH	Oldenburg, Germany	100
Bayer Medical Care B.V.	Maastricht, Netherlands	100
Bayer OÜ	Tallinn, Estonia	100
Bayer Real Estate Waltersdorf Verwaltungs-GmbH	Schönefeld, Germany	100
Bayer UK Limited	Newbury, U.K.	100
Bayer US IP GmbH	Leverkusen, Germany	100
Bayer Verwaltungsgesellschaft mbH	Weimar, Germany	100
Bayer-Unterstützungskasse GmbH	Leverkusen, Germany	100
Bayhealth Comercialização de Produtos Farmacêuticos Unipessoal Lda.	Carnaxide, Portugal	100

Subsidiary and affiliated companies of the Bayer Group
as of December 31, 2013

Immaterial Subsidiaries [Table 4.22-4 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Baysalud, S.L.	Barcelona, Spain	100
Berlex – Especialidades Farmacêuticas Lda.	Carnaxide, Portugal	100*
Berlifarma – Especialidades Farmacêuticas, Lda.	Carnaxide, Portugal	100*
Berlimed – Especialidades Farmacêuticas Lda.	Carnaxide, Portugal	100*
Berlipharm B.V.	Weesp, Netherlands	100
CENTROFARMA-Indústria e Comércio de Prod. Farmacêuticos, Lda.	Carnaxide, Portugal	100
Chemie-Beteiligungsaktiengesellschaft	Glarus, Switzerland	100
CleanTech NRW GmbH	Leverkusen, Germany	100
Conceptus Medical Limited	Esher, U.K.	100
Currenta Geschäftsführungs-GmbH	Leverkusen, Germany	100
Ehrfeld Mikrotechnik BTS GmbH	Wendelsheim, Germany	100
Epurex Films Geschäftsführungs-GmbH	Bomlitz, Germany	100
Intendis Derma, S.L.	Sant Joan Despi, Spain	100
Intraserv Verwaltungs-GmbH	Schönefeld, Germany	100
KOSINUS Grundstücks-Verwaltungsgesellschaft mbH	Schönefeld, Germany	100
Lilienthalstraße Nr. 4 GmbH	Schönefeld, Germany	100
Lusal Producão Quimico Farmacêutica Luso-Alema, Lda.	Carnaxide, Portugal	100
Lusalfarma – Especialidades Farmacêuticas Lda.	Carnaxide, Portugal	100*
Medrad France B.V.	Mijdrecht, Netherlands	100
Neunte Bayer VV GmbH	Leverkusen, Germany	100
pbi Home & Garden Limited	Cambridge, U.K.	100
Radimetrics UK Limited	Kilmarnock, U.K.	100
Schering Agrochemicals Holdings	Newbury, U.K.	100
Schering Health Care Limited	Newbury, U.K.	100
Schering Industrial Products	Newbury, U.K.	100
SIA Bayer	Riga, Latvia	100
TecArena+ GmbH	Leverkusen, Germany	100
Willmitzer GmbH	Potsdam, Germany	0
North America		
Artificial Muscle, Inc.	Sunnyvale, U.S.A.	100
Baulé Inc.	Allentown, U.S.A.	100
Baulé USA LLC	Coraopolis, U.S.A.	100
Bayer I4 Acqusition Corporation	Wilmington, U.S.A.	100
Berlex Canada, Inc.	Pointe-Claire, Canada	100
BHCP Holdings LLC	Pittsburgh, U.S.A.	100
Delinting and Seed Treating Company	Research Triangle Park, U.S.A.	100
NippoNex Holdings LLC	Tarrytown, U.S.A.	100
The SDI Divestiture Corporation	Pittsburgh, U.S.A.	100
Viterion TeleHealthcare LLC	Tarrytown, U.S.A.	100

* including a 10% interest held by a non-consolidated subsidiary

Immaterial Subsidiaries

[Table 4.22-4 (continued)]

Company Name	Place of Business	Bayer's interest
		%
Asia / Pacific		
Bayer CropScience (Thailand) Company Limited	Bangkok, Thailand	100
Bayer Sheets India Private Limited	Mumbai, India	100
Bomac Animal Health Pty. Limited	Hornsby, Australia	100
Bomac Laboratories Pty. Limited	Hornsby, Australia	100
Chemdyes Pakistan (Private) Limited	Karachi, Pakistan	100
Myanmar Aventis CropScience Ltd.	Yangon, Myanmar	100
Shanghai Baulé Polyurethane Technology Co. Ltd.	Shanghai, China	100
TianJin Greenstone Polymer Technology Co. Ltd.	Tianjin, China	100
Latin America / Africa / Middle East		
AgrEvo South Africa (Pty) Ltd.	Isando, South Africa	100
Bayer Distribuidora de Produtos Químicos e Farmacêuticos Ltda.	São Paulo, Brazil	100
Bayer Evde Bakim Hizmetleri Ltd. Sti.	Istanbul, Turkey	100
Bayer Parsian AG	Teheran, Iran	100
Bayer Schering Pharma Mocambique, Lda.	Maputo, Mozambique	100*
Bayer Zimbabwe (Private) Limited	Harare, Simbabwe	100
Comercial Interamericana, S.A.	Guatemala City, Guatemala	100
Conceptus Costa Rica S.R.L.	Heredia, Costa Rica	100
Farmaco Ltda.	São Paulo, Brazil	100
Laboratorio Berlimed S.A.	Santiago, Chile	100
Miles, S.A. Guatemala Branch	Guatemala City, Guatemala	100
Químicas Unidas S.A.	Havanna, Cuba	100
Schering (Pty) Ltd.	Midrand, South Africa	100
Schering Peruana S.A.	Lima, Peru	100

* including a 10% interest held by a non-consolidated subsidiary

The following associates and joint ventures were accounted for in the consolidated financial statements at cost due to their immateriality:

Immaterial Associates and Joint Ventures [Table 4.22-5]

Company Name	Place of Business	Bayer's interest
		%
Europe		
Axxam S.p.A.	Milan, Italy	23.2
BaySecur GmbH	Leverkusen, Germany	49
BaySports-Travel GmbH	Leverkusen, Germany	50
BBB Management GmbH Campus Berlin-Buch	Berlin, Germany	20
Disalfarm, S.A.	Barcelona, Spain	33.3
Faserwerke Hüls GmbH	Marl, Germany	50
Healthbox Europe 1 LP	London, U.K.	37
INVITE GmbH	Cologne, Germany	50
PYCO SA	Mont de Marsan, France	47
Sauerstoff- und Stickstoffrohrleitungsgesellschaft mbH	Krefeld, Germany	50
North America		
Technology JV, L.P.	Wilmington, U.S.A.	33.3
Asia/Pacific		
Cotton Growers Services Pty. Limited	Moree, Australia	50
Latin America/Africa/Middle East		
Bayer Middle East Limited Liability Company	Dubai, United Arab Emirates	49
Coopers Environmental Science (Pty) Ltd.	Pomona Gardens, South Africa	26

The Bayer Group held between 5% and 20% of the voting rights of the following "large limited liability companies" as defined in Section 267 Paragraph 3 of the German Commercial Code:

Other Interests in Large Limited Liability Companies [Table 4.22-6]

Company Name	Place of Business	Bayer's interest
		%
Hokusan Co. Ltd.	Kitahiroshima, Japan	19.8
Instituto Rosenbusch S.A.	Buenos Aires, Argentina	10
PharmLog Pharma Logistik GmbH	Bönen, Germany	16.6

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Forward-Looking Statements
This Annual Report contains forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual financial position, 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.

Financial Calendar

Q1 2014 Interim Report	April **28, 2014**
Annual Stockholders' Meeting 2014	April **29, 2014**
Planned dividend payment date	April **30, 2014**
Q2 2014 Interim Report	July **30, 2014**
Q3 2014 Interim Report	October **30, 2014**
2014 Annual Report	February **26, 2015**
Q1 2015 Interim Report	April **30, 2015**
Annual Stockholders' Meeting 2015	May **27, 2015**