BASF Report 2016

Economic, environmental and social performance

BASF
We create chemistry

Chemicals

The Chemicals segment comprises our business with basic chemicals and intermediates. Its portfolio ranges from solvents and plasticizers to high-volume monomers and glues as well as raw materials for detergents, plastics, textile fibers, paints and coatings, crop protection and medicines. In addition to supplying customers in the chemical industry and numerous other sectors, we also ensure that other BASF segments are supplied with chemicals for producing downstream products.

Page 61

Key data Chemicals (million €)

		2016	2015	Change in %
Sales		13,461	14,670	(8)
Thereof	Petrochemicals	5,035	5,728	(12)
	Monomers	5,745	6,093	(6)
	Intermediates	2,681	2,849	(6)
EBITDA		3,169	3,090	3
Income from operations (EBIT)		1,983	2,131	(7)
EBIT before special items		2,064	2,156	(4)

Performance Products

Our Performance Products lend stability, color and better application properties to many everyday products. Our product portfolio includes vitamins and other food additives in addition to ingredients for pharmaceuticals, personal care and cosmetics, as well as hygiene and household products. Other products from this segment improve processes in the paper industry, in oil, gas and ore extraction, and in water treatment. They furthermore enhance the efficiency of fuels and lubricants, the effectiveness of adhesives and coatings, and the stability of plastics.

Page 67

Key data Performance Products (million €)

		2016	2015	Change in %
Sales		15,002	15,648	(4)
Thereof	Dispersions & Pigments	4,530	4,629	(2)
	Care Chemicals	4,735	4,900	(3)
	Nutrition & Health	1,932	1,998	(3)
	Performance Chemicals	3,805	4,121	(8)
EBITDA		2,522	2,289	10
Income from operations (EBIT)		1,648	1,340	23
EBIT before special items		1,745	1,366	28

Functional Materials & Solutions

In the Functional Materials & Solutions segment, we bundle system solutions, services and innovative products for specific sectors and customers, especially the automotive, electrical, chemical and construction industries, as well as applications for household, sports and leisure. Our portfolio comprises catalysts, battery materials, engineering plastics, polyurethane systems, automotive coatings, surface treatment solutions and concrete admixtures as well as construction systems like tile adhesives and decorative paints.

Page 74

Key data Functional Materials & Solutions (million €)

		2016	2015	Change in %
Sales		18,732	18,523	1
Thereof	Catalysts	6,263	6,306	(1)
	Construction Chemicals	2,332	2,304	1
	Coatings	3,249	3,166	3
	Performance Materials	6,888	6,747	2
EBITDA		2,906	2,228	30
Income from operations (EBIT)		2,199	1,607	37
EBIT before special items		1,946	1,649	18

Agricultural Solutions

The Agricultural Solutions segment provides innovative solutions in the areas of chemical and biological crop protection, seed treatment and water management as well as for nutrient supply and plant stress.

Page 80

Key data Agricultural Solutions (million €)

	2016	2015	Change in %
Sales	5,569	5,820	(4)
EBITDA	1,305	1,321	(1)
Income from operations (EBIT)	1,037	1,083	(4)
EBIT before special items	1,087	1,090	0

Oil & Gas

In the Oil & Gas segment, we focus on exploration and production in oil and gas-rich regions in Europe, North Africa, Russia, South America and the Middle East. Together with our Russian partner Gazprom, we are also active in the transport of natural gas in Europe.

Page 84

Key data Oil & Gas (million €)

	2016	2015	Change in %
Sales	2,768	12,998	(79)
EBITDA	1,596	2,587	(38)
Income from operations (EBIT)	499	1,072	(53)
EBIT before special items	517	1,366	(62)
Net income	362	1,050	(66)

BASF Group 2016 at a glance

Economic data

		2016	2015	Change in %
Sales	million €	57,550	70,449	(18.3)
Income from operations before depreciation and amortization (EBITDA) and special items	million €	10,327	10,508	(1.7)
EBITDA	million €	10,526	10,649	(1.2)
Amortization and depreciation[1]	million €	4,251	4,401	(3.4)
Income from operations (EBIT)	million €	6,275	6,248	0.4
Special items	million €	(34)	(491)	93.1
EBIT before special items	million €	6,309	6,739	(6.4)
Financial result	million €	(880)	(700)	(25.7)
Income before taxes and minority interests	million €	5,395	5,548	(2.8)
Net income	million €	4,056	3,987	1.7
EBIT after cost of capital	million €	1,136	194	485.6
Earnings per share	€	4.42	4.34	1.8
Adjusted earnings per share	€	4.83	5.00	(3.4)
Dividend per share	€	3.00	2.90	3.4
Research and development expenses	million €	1,863	1,953	(4.6)
Personnel expenses	million €	10,165	9,982	1.8
Number of employees		113,830	112,435	1.2
Assets	million €	76,496	70,836	8.0
Investments[2]	million €	7,258	6,013	20.7
Equity ratio	%	42.6	44.5	–
Return on assets	%	8.2	8.7	–
Return on equity after tax	%	13.3	14.4	–
Net debt	million €	14,401	12,935	11.3
Cash provided by operating activities	million €	7,717	9,446	(18.3)
Free cash flow	million €	3,572	3,634	(1.7)

[1] Amortization of intangible assets, depreciation of property, plant and equipment, impairments and write-ups

[2] Additions to intangible assets and property, plant and equipment (including acquisitions)

Value added 2016[3]

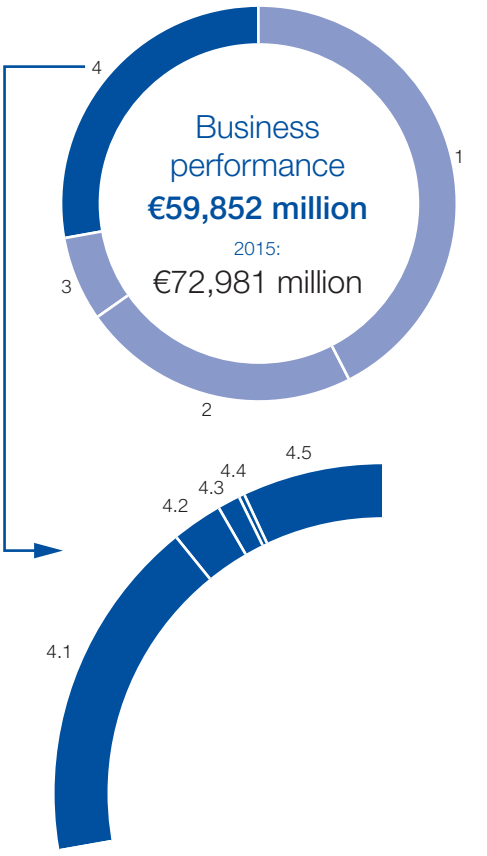
Creation of value added (million €)

		2016	2015
	Business performance	59,852	72,981
1	Cost of raw materials and merchandise	(25,450)	(37,323)
2	Services purchased, energy costs and other expenses	(13,658)	(14,787)
3	Amortization and depreciation	(4,251)	(4,401)
4	**Value added**	**16,493**	**16,470**

Use of value added

		2016	2015
4.1	Employees	61.6%	60.6%
4.2	Government	8.6%	9.4%
4.3	Creditors	4.0%	3.9%
4.4	Minority interests	1.2%	1.9%
4.5	Shareholders (dividend and retention)	24.6%	24.2%

[3] Value added results from the company's performance minus goods and services purchased, depreciation and amortization. Business performance includes sales revenues, other operating income, interest income and net income from shareholdings. Value added shows the BASF Group's contribution to both private and public income as well as its distribution among all stakeholders.



Innovation

		2016	2015	Change in %
Research and development expenses	million €	1,863	1,953	(4.6)
Number of employees in research and development at year-end		9,966	10,010	(0.4)

Employees and society

		2016	2015	Change in %
Employees				
Employees at year-end		113,830	112,435	1.2
Apprentices at year-end		3,120	3,240	(3.7)
Personnel expenses	million €	10,165	9,982	1.8
Society				
Donations and sponsorship	million €	47.0	56.2	(16.4)

Environment, health, safety and security

		2016	2015	Change in %
Safety, security and health				
Transportation incidents with significant impact on the environment		0	0	0
Process safety incidents	per one million working hours	2.0	2.1	(4.8)
Lost-time injuries	per one million working hours	1.4	1.4	0
Health Performance Index[4]		0.96	0.97	(1.0)
Environment				
Primary energy use[5]	million MWh	57.4	57.3	0.2
Energy efficiency in production processes	kilograms of sales product/MWh	617	599	3.0
Total water withdrawal	million cubic meters	1,649	1,686	(2.2)
Withdrawal of drinking water	million cubic meters	20.7	22.1	(6.3)
Emissions of organic substances to water[6]	thousand metric tons	15.9	17.3	(8.1)
Emissions of nitrogen to water[6]	thousand metric tons	2.9	3.0	(3.3)
Emissions of heavy metals to water[6]	metric tons	23.2	25.1	(7.6)
Emissions of greenhouse gases	million metric tons of CO_2 equivalents	21.9	22.2	(1.4)
Emissions to air (air pollutants)[6]	thousand metric tons	26.7	28.6	(6.6)
Waste	million metric tons	2.1	2.0	5.0
Operating costs for environmental protection	million €	1,011	962	5.1
Investments in environmental protection plants and facilities	million €	206	346	(40.5)

[4] For more information, see page 99.

[5] Primary energy used in BASF's plants as well as in the plants of our energy suppliers to cover energy demand for production processes

[6] Excluding emissions from oil and gas production

Audits along the value chain

	2016	2015	Change in %
Suppliers			
Number of on-site sustainability audits of raw material suppliers	104	135	(23.0)
Responsible Care Management System			
Number of environmental and safety audits	121	130	(6.9)
Number of short-notice audits	37	68	(45.6)
Number of occupational medicine and health protection audits	30	53	(43.4)

Contents

To Our Shareholders

Letter from the Chairman of the Board of Executive Directors — 7
The Board of Executive Directors of BASF SE — 10
BASF on the capital market — 12

Management's Report

The BASF Group — 19
Our strategy — 22
Innovation — 32
Investments, acquisitions and divestitures — 37
Business models and customer relations — 39
Working at BASF — 40
Social commitment — 46
The business year at BASF — 47
Responsibility along the value chain — 92
Forecast — 111

Corporate Governance

Corporate governance report — 127
Compliance — 134
Management and Supervisory Boards — 136
Compensation report — 138
Report of the Supervisory Board — 146
Declaration of Conformity — 150
Declaration of Corporate Governance — 150

Consolidated Financial Statements

Statement by the Board of Executive Directors — 153
Auditor's report — 154
Statement of income — 155
Statement of income and expense recognized in equity — 156
Balance sheet — 157
Statement of cash flows — 158
Statement of equity — 159
Notes — 160

Supplementary Information on the Oil & Gas Segment

Supplementary information on the Oil & Gas segment – 223

Overviews

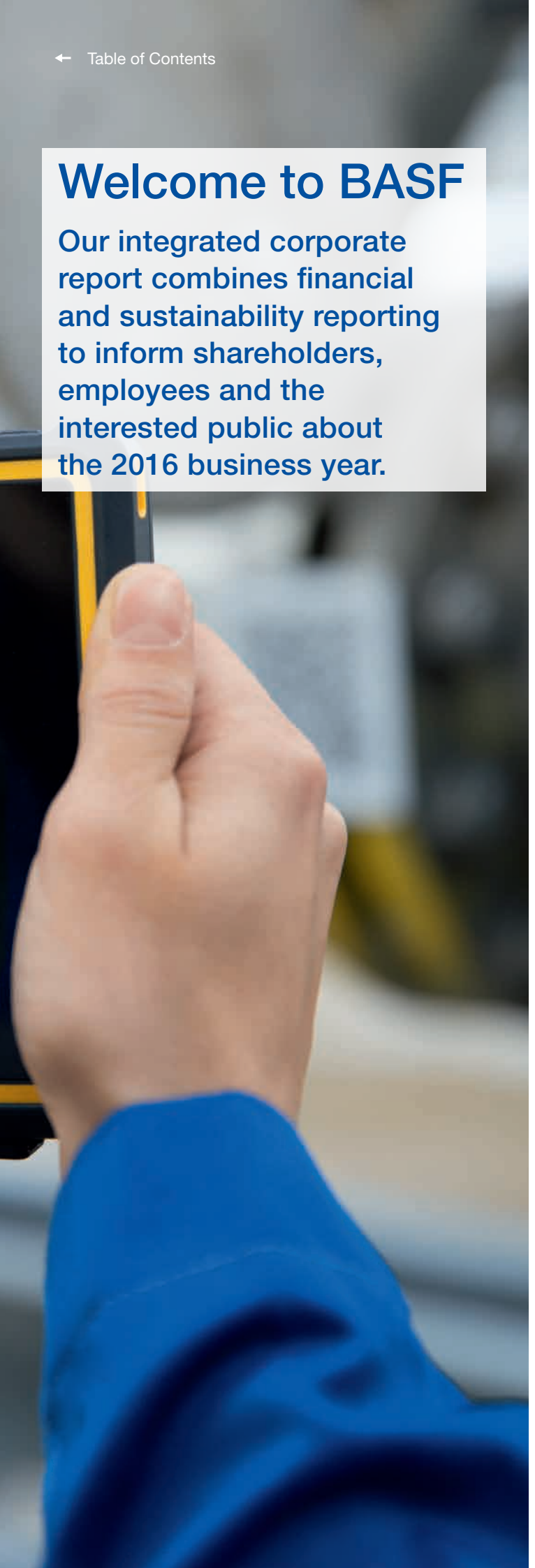
Ten-year summary — 233
Trademarks — 235
Glossary — 236

Detailed tables of contents can be found on each colored chapter divider.

← Table of Contents

Welcome to BASF

Our integrated corporate report combines financial and sustainability reporting to inform shareholders, employees and the interested public about the 2016 business year.



Chemistry for a sustainable future

Our innovations contribute to a sustainable future. We support the United Nations in the implementation of the U.N. Sustainable Development Goals (SDGs), which create the framework for sustainable business practices at the economic, social and environmental levels. In drafting these development goals, the United Nations worked together with nongovernmental organizations, international trade associations, employee representatives, scientists, policymakers and industry. BASF was actively involved in the development of the SDGs as a member of working groups.

On the following pages, we share how BASF contributes to the SDGs: with responsible production, solutions for clean water, products for sustainable agriculture and to combat hunger, and with contributions to infrastructure, industry and innovation.

←
Cover photo and page 1:
We drive digital transformation under the banner "BASF 4.0": In plants at the Ludwigshafen site, employees can access information at any time using special tablets and QR codes.

Our contribution to a sustainable future

PRODUCTION

The BASF Verbund's strengths lie in highly efficient, innovative value chains that extend from basic chemicals right through to high-value-added products. We use resource-saving processes to make products that create value for our customers and the environment.

Sustainable, improved production

Greater supply security combined with more efficient and environmentally friendly production: BASF switched over its production process for the monomer acrylamide to a modern enzyme-based process. Acrylamide is used for the production of water-soluble flocculation aids in wastewater treatment and papermaking, as well as mineral processing and enhanced oil recovery. The bio-catalytic production method results in less waste than the copper catalysis previously used. The process takes place at room temperature and under normal atmospheric conditions, resulting in energy savings and greater environmental compatibility. It also generates fewer by-products. BASF has been producing bio-acrylamide in Suffolk, Virginia, since 2014 and started up a new bio-acrylamide plant in Bradford, England, in 2016. A third plant is being built in Asia and should start up in 2017. With three state-of-the-art production facilities located directly in key markets, BASF is able to quickly and sustainably meet regional demand.

For more on bio-polyacrylamide, see basf.com/bioacrylamide

Milestone: To bolster its worldwide polyacrylamide production network, BASF started up the new world-scale production plant for bio-acrylamide in Bradford, England.

Production in North America: BASF has been producing bio-acrylamide in Suffolk, Virginia, since 2014.

Naturally lighter

“Weight savings” is a key term in modern automotive engineering, as lighter vehicle components reduce fuel consumption and carbon emissions for the end customer. To produce lightweight, innovative auto parts made from environmentally friendly substances, manufacturers need the right materials from the supplier industry. Such as BASF’s binding agent Acrodur®: The acrylic resin can be processed in a simple and especially environmentally friendly manner; the only by-product generated is water. Acrodur® is used, for example, in collaboration with partners to create a new vehicle roof frame using renewable hemp. The natural fiber construction is strengthened with Acrodur®, making the roof frame up to 40% lighter compared with regular steel components.

For more information, see basf.com/nonwovens

Lighter weight: The binding agent Acrodur® 950 L provides the strength and heat-resistance needed in the world’s first vehicle roof frame made entirely of natural fibers.

WATER

Water is a valuable resource. It needs to be handled responsibly, and new methods of wastewater treatment are in demand. Two examples show how BASF helps.

Clean water: Dr. Kevin McPeak is a scientist in residence at the BASF Sustainable Living Laboratory at Louisiana State University. He researches portable filtration and disinfection systems for drinking water – harnessing visible sunlight.

Purified by the sun

Clean water is essential for our health. We need new and simple solutions to produce safe drinking water – especially in developing countries where traditional, energy-intensive methods of water treatment are difficult to put into practice. At the United States' Louisiana State University, new ideas have room to develop: As the major sponsor, BASF provided the university's College of Engineering with $1 million to help construct the BASF Sustainable Living Laboratory. The laboratory, in operation since fall 2016, focuses on researching sustainable solutions for global challenges. Dr. Kevin McPeak is the lab's first scientist in residence. He and his team are working on portable filtration and disinfection systems for drinking water. "We are investigating light-driven oxidation processes that safely and effectively inactivate pathogens," McPeak explains. Instead of the ultraviolet light used in traditional methods for sun-supported water treatment, he harnesses visible sunlight. Ultraviolet light makes up a mere 5% of the solar spectrum. By contrast, visible light accounts for more than 40% of the spectrum, which means that McPeak harnesses several times as much energy than traditional methods. This, in turn, allows for quicker and more effective disinfection. With his research, McPeak wants to create a simple and inexpensive solution for developing countries to transform polluted water into drinking water.

Largest water treatment plant on the Rhine: The BASF wastewater treatment plant in Ludwigshafen, Germany, purifies almost 100 million cubic meters of the company's production water every year. Even wastewater from the surrounding towns and communities is purified.

A better energy footprint: Dr. Peter Schmittel is manager of the wastewater treatment plant. He and his team work on improving the facility's energy footprint – with great success.

Tiny helpers, big impact

BASF's wastewater treatment plant is one of the largest in Europe. It purifies nearly 100 million cubic meters of wastewater from BASF's production each year, in addition to another 20 million cubic meters of wastewater from the German towns of Ludwigshafen, Frankenthal and Bobenheim-Roxheim. The core of the plant is biological purification: Bacteria transform polluted water into sewage sludge, carbon dioxide (CO_2) and water. Keeping the wastewater moving and the bacteria supplied with oxygen requires a lot of energy. Without changing water volume or quality, BASF has increased the plant's energy efficiency by 28% compared with 2012 and reduced costs by around €3 million over this period. In addition, 18,000 fewer metric tons of CO_2 are emitted annually. "Efficient biological purification is the key to our success. Solid matter is already better separated in the precleaning phase, reducing not only the amount of pollution in the biological pools, but also the energy requirement for aeration," explains plant manager Dr. Peter Schmittel. BASF also reduced the bacteria concentration by 50%. The remaining bacteria are better supplied with oxygen, which enables them to work even more efficiently.

For more on the water treatment plant, see basf.com/wastewater-treatment-plant

FOOD

In 2050, nearly ten billion people will live on Earth. Our innovative solutions for efficient and environmentally friendly agriculture and animal feed make an important contribution toward keeping people supplied with sufficient and nourishing food.

Improved feed conversion

Sustainability is a core criterion in the development of BASF's feed additives portfolio. This means we not only evaluate additives based on their nutritional value, we also consider additional positive effects on animal feed and the environment. In pig and poultry feeding, the enzyme Natuphos® improves digestion of important nutrients such as phosphorus, proteins, calcium and zinc. The feed is more environmentally friendly, as the animals excrete less phosphorus, reducing the impact on water. Thanks to Natuphos®, the animals are also better able to utilize the energy from their food, reducing the overall feeding costs. In pig farming, adding the organic acid Amasil® lowers the pH value of the pigs' food, creating an environment that is inhospitable to harmful bacteria. The lower amount of bacteria consumed reduces the animals' microbial load, improving their vitality. Furthermore, Amasil® extends the food's shelf life, enabling farmers to provide their animals with the needed nutrients in high quality.

For more on feed additives, see: animal-nutrition.basf.com

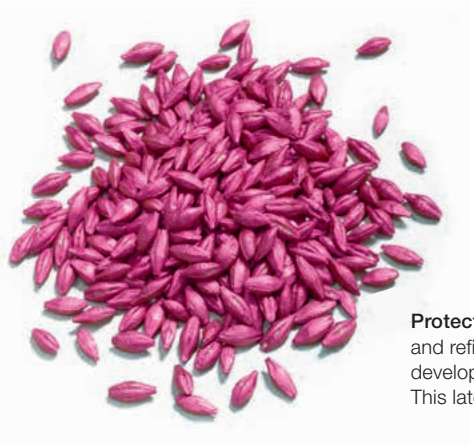
Enzymes for sustainable agriculture: The animal feed additive Natuphos® helps farmers raise healthy animals.

Knowledge on a global scale

BASF opened a new research and development center for biological crop protection and seed solutions in Limburgerhof, Germany. Together with other research sites in Brazil, Argentina, France, England, South Africa, China, Australia, the United States and Canada, Limburgerhof is part of an international network of expertise. Its goal is the global exchange of research results that have been tried and tested in different climate zones and under various local parameters. In this network, BASF researches naturally occurring organisms and cultures and their potential use in biological crop protection. This is how we pursue our goal of supplementing our classic portfolio of chemical crop protection and offering farmers an even more comprehensive product portfolio. We combine knowledge of biological microorganism fermentation with chemical formulation expertise and develop new solutions for better seed treatment. Farmers then profit from seeds that provide plants with all-around protection from the very beginning. Sowing is simulated and optimized in order to provide farmers with the best possible application and handling.

For more on crop protection solutions, see basf.com/agro

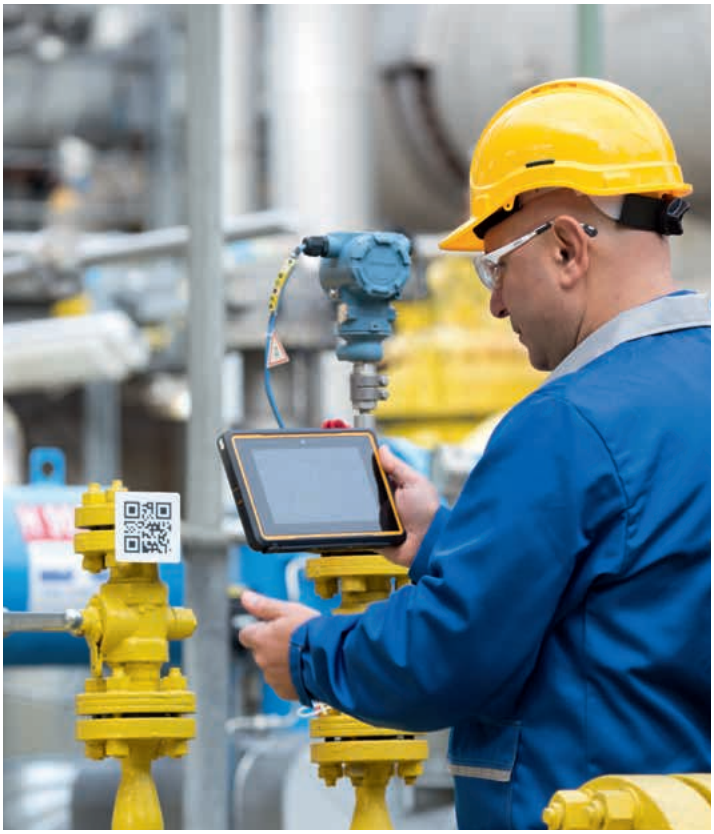
Networked research: The new research and development center in Limburgerhof, Germany, is part of our global network of R+D sites and testing centers for biological crop protection and seed treatment solutions.



Protected seeds: Seed treatments and refining support plants' undisturbed development from the very beginning. This later increases yields.

INFRASTRUCTURE, INDUSTRY, INNOVATION

Infrastructure, industry and innovation are three important pillars of sustainable development. While infrastructure provides the basic foundation for all business processes, innovations – such as in the field of digitalization – expand our technological possibilities.



Smart Manufacturing: The steam cracker in Ludwigshafen has state-of-the-art information and automation technology at its disposal.

Driving digital transformation

The BASF 4.0 project team is evaluating possibilities for more intensive use of digital technologies and business models, and drives the digital transformation of BASF. Under the banner “Smart Manufacturing,” BASF implements digital technologies and applications in its plants with the goal of making production more efficient and even safer. This includes the “predictive maintenance” approach. A model-based analysis of the data can, for example, better predict the optimal point in time for maintenance measures, reducing unscheduled repairs and shutdowns and optimizing coordination between maintenance and production processes. The steam cracker – the heart of production in Ludwigshafen – already uses predictive maintenance through the application of state-of-the-art information and automation technology. Several thousand sensors track process data, like pressure and temperature, around the clock in order to monitor and optimally direct the plant. Another Smart Manufacturing project is “Augmented Reality.” Plant employees are supported in their work with industry-specific tablet devices that provide access at any time to digital information. Working processes are made more transparent and efficient.

Digital and mobile: Special tablet devices give plant employees access to information at any time.

Delhi Metro: BASF developed customized concrete waterproofing solutions for the subway system of the Delhi, India, metropolitan region.

Expertise for big visions

Delhi is one of the largest cities in the world. The pulsing metropolis of over 16 million people is one of the most important centers of commerce and trade in India. After the expansion of its metro, over 270 stations along approximately 330 kilometers of rail will run under the surface of the city. To date, only the cities of London, Seoul, Tokyo and Beijing boast larger subway networks. Construction projects on this scale would hardly be possible without innovative and robust construction materials. For the expansion of the Delhi Metro, the BASF team in India won the project tender with their customized concept proposal, including the use of BASF waterproofing solutions for concrete. BASF's Master Builders Solutions line of concrete solutions are currently used in underground transport systems all over the world, such as in China, Singapore, the United States and Poland. Railway tunnel construction is another area that uses BASF's construction chemicals solutions. In Switzerland, for example, concrete additives and cement-based injections for waterproofing were employed in building the world's longest rail tunnel, the Gotthard Base Tunnel, and its feeder, the Ceneri Base Tunnel. Especially in megaprojects, the high performance of BASF construction chemicals in sometimes extremely demanding conditions is an important distinguishing feature.

For more on our construction chemicals, see master-builders-solutions.basf.com

Our foundation

€32.6 billion
in equity

€7.3 billion
invested in fixed and intangible assets (including acquisitions)

€1.86 billion
spent on research and development

€10.17 billion
in personnel expenses

€69 million
spent on further education

€34 billion
worth of raw materials, goods and services purchased for own production

€206 million
invested in environmental protection

30,000
different raw materials procured

5.4%
of raw materials purchased worldwide from renewable resources

1,649
million m³
of water abstracted

15.0
million MWh
of electricity demand

40.7
million MWh
of steam demand

Training:
118,000
enrollments in courses on occupational safety and
13,000
on process safety

75,000
employees and contractors at around
350
sites participate in worldwide safety initiative

121
environmental, safety and security audits performed at
80 sites

30
sites audited on occupational medicine and health protection

113,830
employees worldwide, of which
3,120
apprentices

Around 10,000
employees in research and development

Average of
2.0
days of further training per employee each year

84.6%
of our senior executives have international experience

Numerous options for balancing personal and professional life worldwide; in Ludwigshafen, Germany, for example,
600
employees make use of these opportunities daily

Our **stakeholders** include customers, employees, suppliers and shareholders, as well as experts in science, industry, politics, society and media

Over 70,000
suppliers

around 90%
of raw materials, goods and services for own production sourced locally

104
raw material supplier sites audited

56
external compliance hotlines

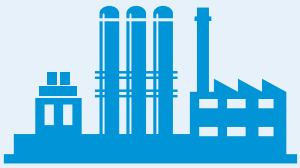
Our business model

5
segments

- Chemicals
- Performance Products
- Functional Materials & Solutions
- Agricultural Solutions
- Oil & Gas

13
operating divisions

86
strategic business units



BASF Group companies in more than
80
countries

Intelligent Verbund system
6
Verbund sites and
352
additional production sites worldwide

Our corporate purpose:
We create chemistry for a sustainable future

More than 130,000 customers

With our **broad portfolio**, we serve customers from many different sectors – from **major global customers** to **local workshops.**

Market success based on strategic principles

- We add value as one company
- We innovate to make our customers more successful
- We drive sustainable solutions
- We form the best team

Values as guideline for our conduct and actions

- Creative
- Open
- Responsible
- Entrepreneurial

Our results

€57.6 billion
in sales, of which
around **€10 billion**
from innovations
on the market since
2011

€6.28 billion
in EBIT

€6.31 billion
in EBIT before
special items

Net income of
€4.1 billion

€3.00
dividend per share

€1.1 billion
in income
taxes

1,644
million m³
of water discharged

Greenhouse gas emissions:
21.9 million metric tons
of CO_2 equivalents

14.0 million MWh
fuel saved through Verbund system

Customers' use of BASF's climate protection products avoids
540 million metric tons
of CO_2 equivalents

Number of lost-time injuries
per one million working
hours
1.4

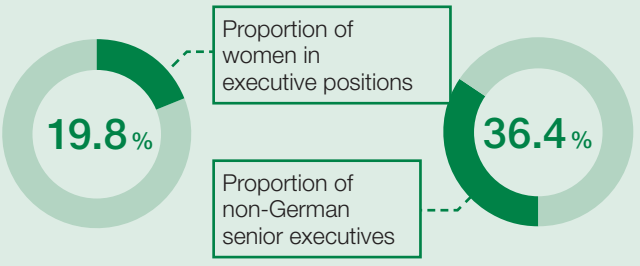
0
transportation incidents
with significant impact on
the environment

Process safety
incidents:
decline to
2.0
per one million
working hours

Over
60,000
product applications
assessed and rated
for aspects of
sustainability

Around
3,000
projects in
research pipeline

Around
850
patents filed
worldwide



€47.0 million
spent on donations and
sponsorship

Involved in
UN Global Compact
since 2000

Around
600
universities, research
institutions and companies
within our global network

In 2 cases
we terminated
our collaboration
with suppliers as
a result of
unsatisfactory
sustainability
performance

278
phone calls and emails
received by external
compliance hotlines

How we create value

BASF's success is supported by both financial and nonfinancial value drivers. We want to understand how these interact, and derive targeted measures for increasing the positive impact of our actions and further minimizing the negative effects. This intention forms the basis of our integrated reporting.

The following overview provides examples of how we create value for our company, the environment and society. It is modeled on the framework of the International Integrated Reporting Council (IIRC). Both financial and nonfinancial value drivers – such as environmental, production-related, personnel and knowledge-based factors, along with aspects of society and partnerships – form the **foundation** of our actions. Through our **business model** these inputs are transformed into various outputs – the **results** of our actions.

About This Report

Integrated reporting

This integrated report documents BASF's economic, environmental and social performance in 2016. We use examples to illustrate how sustainability contributes to BASF's long-term success and how we as a company create value for our customers, employees, shareholders, business partners, neighbors and the public.

Further information

The following symbols indicate important information for the reader:

You can find more information within the report.

You can find more information on our website.

This section shows how the ten principles of the U.N. Global Compact and the Blueprint for Corporate Sustainability Leadership are implemented.

If the symbol is underlined, the entire chapter is relevant.

The BASF Report online

HTML version with additional features: **basf.com/report**

PDF version available for download: **basf.com/basf_report_2016.pdf**

Content and structure

- As an integrated report, the BASF Report also serves as a progress report in terms of U.N. Global Compact
- Sustainability reporting follows Global Reporting Initiative's G4 "comprehensive" international guidelines

The BASF Report combines the major financial and nonfinancial information necessary to thoroughly evaluate our performance. We select the report's topics based on the following reporting principles: materiality, sustainability context, completeness, balance, and stakeholder inclusion. In addition to our integrated report, we publish further information online. Links to this supplementary information are provided in each chapter.

Our sustainability reporting has been based on Global Reporting Initiative (GRI) standards since 2003 already. For the BASF Report 2016, we have chosen the GRI's "comprehensive" disclosure criteria.

In addition, we served as a pilot enterprise in the development of the framework for integrated reporting of the International Integrated Reporting Council (IIRC). Following this pilot phase, we have been active in the IR Business Network since 2014 in order to discuss our experience with other stakeholders and at the same time receive inspiration for enhancing our reporting. This report addresses elements of the IIRC framework by, for example, using graphics to illustrate how we create value or demonstrate the relationships between financial and nonfinancial performance in the chapters for the segments. The information in the BASF Report 2016 also serves as a progress report on BASF's implementation of the ten principles of the United Nations Global Compact and takes into consideration the Blueprint for Corporate Sustainability Leadership of the Global Compact LEAD platform.

The GRI and Global Compact Index can be found in the online report, providing information on GRI indicators and topics relevant to the Global Compact principles.

The 2016 Online Report can be found at basf.com/report

For more on sustainability, see basf.com/sustainability

For more on the Global Compact, the implementation of the Global Compact principles, Global Compact LEAD and Blueprint for Corporate Sustainability Leadership, see globalcompact.org and basf.com/en/global-compact

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

An illustrated example of BASF's business model as geared toward the IIRC framework can be found in the introduction under "How we create value"

Requirements and topics

- Financial reporting according to International Financial Reporting Standards, German Commercial Code and German Accounting Standards
- Sustainability reporting focused on material topics

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

The focus and boundaries of this report are based on the results of the materiality analysis together with a strategic evaluation defining key aspects of the value chain.

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

For more on our selection of sustainability topics, see page 29 onward and basf.com/materiality

For more on our control and risk management system, see page 111 onward

THE GLOBAL COMPACT WE SUPPORT

UN GLOBAL COMPACT Global Compact LEAD PARTICIPANT

GRI GOLD Community BASF 2016

Data

- **Relevant information included up to the editorial deadline of February 21, 2017**

All information and bases for calculation in this report are founded on national and international standards for financial and sustainability reporting. The data and information for the reporting period were sourced from the expert units responsible using representative methods. The reporting period was the 2016 business year. Relevant information is included up to the editorial deadline of February 21, 2017. The report is published each year in English and German.

BASF Group's scope of consolidation for its financial reporting comprises BASF SE, with its headquarters in Ludwigshafen, Germany, and all of its fully consolidated material subsidiaries and proportionally included joint operations. Shares in joint ventures and associated companies are accounted for, if material, using the equity method in the BASF Group Consolidated Financial Statements.

The chapter "Working at BASF" refers to employees active in a company within the BASF Group scope of consolidation as of December 31, 2016. Our data collection methods for environmental protection and occupational safety are based on the recommendations of the European Chemical Industry Council (CEFIC).

In the chapter "Environment, Health, Safety and Security," we report all data on the emissions and waste of the worldwide production sites of BASF SE, its subsidiaries, and joint operations based on our stake.[1] Work-related accidents[1] at all sites of BASF SE and its subsidiaries as well as joint operations and joint ventures in which we have sufficient authority in terms of safety management, are compiled worldwide regardless of our stake and reported in full. Further data on transportation safety[1] and social responsibility refers to BASF SE and its subsidiaries unless otherwise indicated.

For more on companies accounted for in the Consolidated Financial Statements, see the Notes from page 172 onward

For more on emissions, see page 103 onward

The Consolidated Financial Statements begin on page 151

External audit and evaluation

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

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

The Auditor's Report can be found on page 154

The Assurance Report on sustainability information in the BASF Report 2016 can be found at basf.com/sustainability_information

Forward-looking statements

This report contains forward-looking statements. These statements are based on current estimates and projections of BASF management and currently available information. Future statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. Such factors include those discussed in the Opportunities and Risks Report from pages 111 to 118. We do not assume any obligation to update the forward-looking statements contained in this report.

[1] Excluding the Chemetall business acquired from Albemarle Corp., Charlotte, North Carolina, in December 2016

1

To Our Shareholders

Management's Report — 17
Corporate Governance — 125
Consolidated Financial Statements — 151
Supplementary Information on the Oil & Gas Segment — 221
Overviews — 231

Letter from the Chairman of the Board of Executive Directors — 7

The Board of Executive Directors of BASF SE — 10

BASF on the capital market — 12

Dear Shareholder,

In 2016, we achieved the goals we set for ourselves for growth and earnings. We successfully grew in the chemicals business and further improved profitability. It was foreseeable that earnings in Oil & Gas would not match the previous year's level. The oil price declined further – by around 15%, to an average of $44 per barrel for Brent crude in 2016. Furthermore, we had divested our gas trading and storage business in the third quarter of 2015. As a result, BASF Group's EBIT before special items of €6.3 billion was slightly lower overall, down by 6% versus the previous year. As expected, sales declined considerably, by 18% to €57.6 billion.

2016 also painfully demonstrated to us that, despite all our caution and protective measures, risks in the chemical industry cannot be ruled out. In October an accident occurred during maintenance work on a pipeline at the Ludwigshafen site. An explosion resulted in the deaths of four people. Our sympathy is with their families and friends. We are doing everything we can to fully investigate the accident and we will continue to be open and transparent in reporting the findings. If there are ways of further improving our safety, we will pursue them.

The BASF team worked hard to quickly implement solutions to the initial major disturbances to the logistics supplying the site. As a result, the economic consequences are considerably smaller than had been expected in the immediate aftermath of the accident. This was an impressive demonstration of the strength of the BASF team. And for this as well, I would like to extend a heartfelt thanks to all employees on behalf of the Board of Executive Directors, especially since 2016 was also a challenging business year.

2016 got off to a weak start with the oil price at times dipping below $30 per barrel for Brent crude. Our customers were feeling uncertain and were hesitant to place orders. In the first quarter we did not achieve any volume growth. Throughout the rest of the year the impact of our strict spending and cost-discipline measures continually increased. Our excellence program DrivE also delivered the anticipated contributions. Both of these factors played a role in the positive earnings momentum.

As the year progressed, we were able to increase BASF's growth. Our sales volumes rose from quarter to quarter. Particularly in Asia, we continuously increased our sales volumes in the chemicals business and grew strongly. This shows that the high investments we made in research and development and new production capacity in recent years are paying off. The Performance Products and Functional Materials & Solutions segments, where we provide our customers with tailor-made solutions for their applications, contributed in particular to this. In both of these segments we significantly improved our profitability, even more than we had expected one year ago. In the Chemicals segment, our earnings nearly matched the previous year's level and were thus slightly better than expected. Despite considerable price erosion for many products as a result of lower raw material prices, we were able to keep margins stable in many cases.

Our crop protection business performed moderately well in a difficult market environment. Volumes were below the prior-year level, but we managed to keep EBIT before special items stable thanks to strict cost management – we consider this a solid result compared with other industry players.

In the Oil & Gas business we made dramatic adjustments to our costs and expenditures in response to the changing market conditions. As expected, sales and earnings in the segment were significantly below the previous year's level. An important development was our increased production of oil and gas in 2016. Following the sale of our gas trading business we are concentrating on the exploration and production of oil and gas.

"The chemicals business and our crop protection business successfully contributed to considerable improvement in EBIT after cost of capital."

We want to create value for our shareholders. The benchmark for this is positive EBIT after cost of capital. The considerable improvement in 2016 is especially satisfying because the chemicals business and our crop protection business successfully contributed to this. We were thus able to more than offset the price-related negative contribution from our Oil & Gas business.

As a shareholder, you deserve to appropriately share in this success. We are continuing our dividend policy and propose to raise the dividend again, by 10 cents to €3.00 per share. BASF shares thus once again offer a high dividend yield of 3.4% based on the closing share price at the end of 2016.

The BASF share price trend in 2016 reflected the earnings momentum as well as future expectations. In a volatile market environment our share price developed positively. It closed out the year at €88.31, around 25% higher than at the end of the previous year. The performance of our shares was also impressive: With dividends reinvested, the value of our shares rose by 30%, thus considerably outperforming the DAX 30 (7%), Dow Jones Euro Stoxx 50 (4%) and MSCI World Chemicals (11%) Indexes.

Five years ago, we introduced our "We create chemistry" strategy. It focused on growth from investments, innovation and the further development of our portfolio.

In recent years, we have increased our investments in new plants worldwide. We have thus created the conditions to enable organic growth. After a phase of high investments, especially in emerging markets, we scaled these back in 2016 as previously announced. In the coming years we plan to invest at a comparable level. We are now filling the existing capacity in our plants and we want to build on the volume growth momentum seen last year.

Innovation and sustainability – which are closely related – are key pillars of our strategy. In order to offer customized solutions to our customers in the various regions and markets, we have continuously expanded our global research and development activities. In 2016 we further developed our approach to innovation. Our researchers are working on using digital technologies even more. We are integrating digital technologies in our research processes and using data to explore new questions. We also want to make greater use of scientific models to predict the properties of chemical structures. These measures help us strengthen our long-term competitiveness and take advantage of new growth opportunities.

"We have bundled, focused and accelerated our digitalization activities under the name BASF 4.0."

Digitalization will change BASF in other areas, too. We have bundled, focused and accelerated our digitalization activities under the name BASF 4.0. The digital transformation will influence the way we manage our factories in the future, how we work seamlessly with our suppliers and customers, and how we tap and develop new business opportunities and markets. This report contains examples of how we are doing this. We see digitalization as an opportunity for BASF and for our employees – and we will actively shape it.

We also want to continue to grow profitably with acquisitions. In 2016 we purchased Chemetall, a leading global supplier of surface treatments. Chemetall's products can, for example, protect metals from corrosion or facilitate their machining. They are used in industries such as automotive and aerospace. This business is very close to customers and perfectly complements our coatings activities. At the same time, we have divested activities that were no longer an optimal fit for our portfolio, such as the industrial coatings and polyolefin catalysts businesses, which we successfully sold.

The process of structural change in the chemical industry continues, following what appear to be the prevailing trends. BASF adheres to simple principles: Every business should achieve a leading market position if possible and be successful on its own – especially in comparison with its direct competitors. And each business benefits from BASF and from our Verbund – not only in production and logistics but also in research and development and with customers. The Verbund is and will remain the core of BASF. It demands and fosters excellence.

In 2017, we want to grow further and all segments should contribute to this. More importantly, our earnings should rise again, also in the Oil & Gas business, where we assume an average oil price of $55 per barrel of Brent crude in 2017. Business so far this year is in line with our expectations. These expectations are also based on the assumptions that economic conditions will be similar to 2016 and chemical production worldwide will rise by around 3.4%.

"In 2017, we want to grow further and all segments should contribute to this."

However, political uncertainties in particular have rarely been this high. The impact of Brexit remains unpredictable; it affects our competitiveness as well as that of our customers in our home market of Europe, where, moreover, important elections are taking place. Protectionism may seem sweet at first, but it is poison. Around the world, we are seeing a trend towards trying to create prosperity through isolation rather than cooperation. This is another reason why our strategy of producing as much as possible in the local markets is still the right approach.

In the long term, Asia will continue to be the growth driver in the global chemicals market. And China is by far the largest market. In the growth markets in particular we have systematically invested in production, research and development and sales and marketing. We can therefore offer our local customers tailor-made solutions and successfully participate in this growth.

"In the growth markets in particular we have systematically invested in production, research and development and sales and marketing."

We are cautiously optimistic for 2017. In light of the major uncertainties, we will continue our strict discipline with respect to expenditures and costs. An ongoing task is the further development of our portfolio. We will continue to drive forward the digital transformation in our research and development, in production and in the development of new business models that connect us even more closely with our customers. I can assure you that the BASF team is full of energy and drive – and we will prove it once again in 2017.

Yours,

Kurt Bock

The Board of Executive Directors of BASF SE

Dr. Kurt Bock
Chairman of the Board of Executive Directors

Dr. Martin Brudermüller
Vice Chairman of the Board of Executive Directors

Dr. Hans-Ulrich Engel
Chief Financial Officer

Michael Heinz

Wayne T. Smith

Dr. Harald Schwager

Margret Suckale

Sanjeev Gandhi

BASF on the capital market

€88.31	€3.00	DJSI World, CDP
BASF share closing price up by 24.9% year-on-year	Proposed dividend per share	BASF once again included in sustainability indexes

Stock markets in 2016 were again marked by a high level of volatility. Particularly contributing to this were fluctuating economic figures in China, crude oil prices and the referendum in the United Kingdom on E.U. membership. In this volatile environment, the BASF share rose by 24.9%, trading at €88.31 at the end of 2016. We stand by our ambitious dividend policy and will propose a dividend of €3.00 per share at the Annual Shareholders' Meeting – an increase of 3.4% compared with the previous year. BASF enjoys solid financing and good credit ratings.

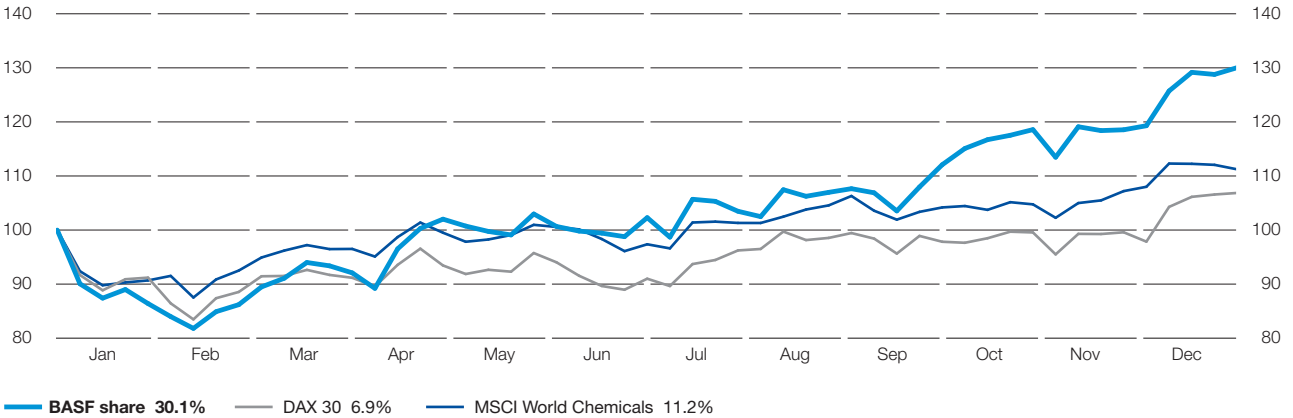
BASF share performance

- BASF share gains 24.9% in 2016
- Long-term development continues to clearly outperform benchmark indexes

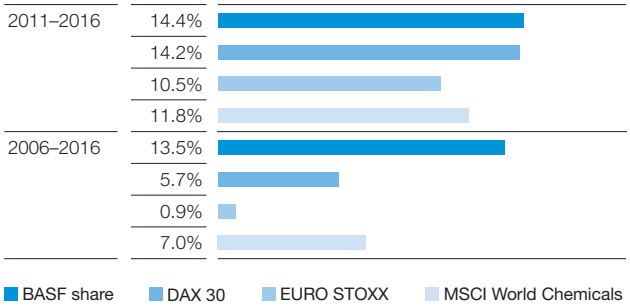
Weak economic data from the United States and China as well as turbulence in the crude oil market led to a negative start to the 2016 stock market year. Gains in oil prices, solid U.S. labor market data and better economic indicators for China led to stock market recovery during the second quarter. The uncertainty leading up to the United Kingdom's referendum on E.U. membership influenced the further course of the second quarter. Stock markets suffered considerable losses following the vote on June 23, 2016, to leave the E.U. Share prices subsequently recovered thanks to factors such as improved Chinese economic data and the U.S. Federal Reserve's initially unchanged interest rate policy. In the fourth quarter, the extension of the European Central Bank's bond-buying program as well as hopes for a growth-promoting economic policy from the newly elected U.S. president led to a year-end rally. On December 30, 2016, Germany's benchmark index, the DAX 30, reached a year's high of 11,481 points, as did the BASF share price at €88.31. This equates to a 24.9% rise in the value of BASF shares compared with the previous year's closing price. Assuming that dividends were reinvested, BASF shares gained 30.1% in value in 2016. The BASF share thus outperformed the German and European stock markets, whose benchmark indexes DAX 30 and DJ EURO STOXX 50 gained 6.9% and 3.7% over the same period, respectively. As for the global industry indexes, DJ Chemicals increased 10.8% in 2016 and MSCI World Chemicals 11.2%.

Viewed over a five and ten-year period, the long-term performance of BASF shares still clearly surpasses these indexes. The assets of an investor who invested €1,000 in BASF shares at the end of 2006 and reinvested the dividends in additional BASF shares would have increased to €3,538 by the end of 2016. This represents an annual yield of 13.5%, placing BASF shares above the returns for the DAX 30 (5.7%), EURO STOXX 50 (0.9%) and MSCI World Chemicals (7.0%) indexes.

Change in value of an investment in BASF shares in 2016
(With dividends reinvested; indexed)



Long-term performance of BASF shares compared with indexes
(Average annual increase with dividends reinvested)



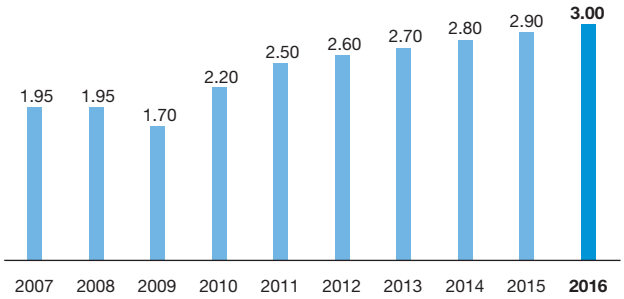
Weighting of BASF shares in important indexes as of December 31, 2016

DAX 30	8.7%
DJ Chemicals	6.5%
MSCI World Index	0.3%

Proposed dividend of €3.00 per share

At the Annual Shareholders' Meeting, the Board of Executive Directors and the Supervisory Board will propose a dividend payment of €3.00 per share. We stand by our ambitious dividend policy and plan to pay out nearly €2.8 billion to our shareholders. Based on the year-end share price for 2016, BASF shares offer a high dividend yield of 3.4%. BASF is part of the DivDAX share index, which contains the fifteen companies with the highest dividend yield in the DAX 30. We aim to increase our dividend each year, or at least maintain it at the previous year's level.

Dividend per share[1] (€ per share)



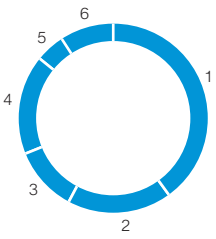
[1] Adjusted for two-for-one stock split conducted in 2008

Broad base of international shareholders

With over 500,000 shareholders, BASF is one of the largest publicly owned companies with a high free float. An analysis of the shareholder structure carried out at the end of 2016 showed that, at 18% of share capital, the United States and Canada made up the largest regional group of institutional investors. Institutional investors from Germany accounted for 11%. Shareholders from the United Kingdom and Ireland hold 11% of BASF shares, while institutional investors from the rest of Europe hold a further 17% of capital. Approximately 29% of the company's share capital is held by private investors, most of whom reside in Germany. BASF is therefore one of the DAX 30 companies with the largest percentage of private shareholders.

Shareholder structure (by region)

1	Germany	40%
2	United States and Canada	18%
3	United Kingdom and Ireland	11%
4	Rest of Europe	17%
5	Rest of world	5%
6	Not identified	9%



Employees becoming shareholders

In many countries, we offer share purchase programs that turn our employees into BASF shareholders. In 2016, for example, around 24,000 employees (2015: 21,600) purchased employee shares worth about €59 million (2015: €60 million).

For more on employee share purchase programs, see page 45

BASF a sustainable investment

- **BASF once again included in DJSI World sustainability index in 2016**
- **CDP again awards BASF leadership status and honors company's sustainable water management**

In September 2016, BASF shares were included in the Dow Jones Sustainability World Index (DJSI World) for the sixteenth year in succession. As one of the most well-known sustainability indexes, the DJSI World represents the top 10% of the 2,500 largest companies in the S&P Global Broad Market Index based on economic, environmental and social criteria.

BASF has participated in CDP's environmental data reporting program since 2004. The CDP represents more than 820 institutional investors who manage over $100 trillion in assets. The CDP's indexes serve as assessment tools for investors. In 2016, BASF achieved a rating of A- and gained leadership status once again. In an analysis of the largest 350 enterprises in Germany, Austria and Switzerland by market capitalization, CDP named BASF among five companies whose efforts have contributed significantly to a reduction in environmental emissions. In addition, BASF was one of 24 companies in 2016, out of a total of 607 assessed by CDP, to receive the top grade of "A" for sustainable water management, putting it among the world's leading enterprises in this area.

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

For more on energy and climate protection, see page 103 onward

Good credit ratings and solid financing

Rated "A1/P-1/outlook stable" by Moody's and "A/A-1/outlook stable" by Standard & Poor's, BASF enjoys good credit ratings, especially compared with competitors in the chemical industry. Rating agency Scope has also been evaluating our creditworthiness since September 2016. It rates BASF at "A/S-1/outlook stable."

At the end of 2016, the financial indebtedness of the BASF Group was €16.3 billion. Liquid funds including marketable securities amounted to €1.9 billion. The average maturity of our financial indebtedness was 5.6 years. The company's medium to long-term debt financing is predominantly based on corporate bonds with a balanced maturity profile. In 2016, BASF issued several bonds to finance, among other things, the acquisition of Chemetall. For short-term debt financing, BASF SE has a commercial paper program with an issuing volume of up to $12.5 billion. As backup for the commercial paper program, there are committed, broadly syndicated credit lines of €6 billion available; these are not being used at this time.

For more on financial indebtedness and maturities, see page 56 onward and the Notes from page 204 onward

Analysts' recommendations

Around 30 financial analysts regularly publish studies on BASF. At the end of 2016, 43% recommended buying our shares (end of 2015: 32%) and 39% recommended holding them (end of 2015: 40%), while 18% had a sell rating (end of 2015: 28%). The average target share price ascribed to BASF by analysts was €79.65 in December 2016.

Continuously updated analyst estimates on BASF are available at basf.com/share

Close dialog with the capital market

- Roadshows for institutional investors and talks with rating agencies
- BASF Roundtable Asia Pacific
- Information events for private investors

Our corporate strategy aims to create long-term value. We support this strategy through regular and open communication with all capital market participants. To keep institutional investors and rating agencies informed, we host numerous one-on-one meetings and roadshows worldwide. We also hold informational events to provide private investors with an insight into BASF. In 2016, around 1,500 private investors took the opportunity to attend such events in Germany and Austria.

At the end of September 2016, we informed analysts and investors at our "Roundtable Asia Pacific" event in London about our activities in the region as well as the growth potential for the chemical industry. With the aid of concrete measures and examples, it was explained how BASF intends to continue growing profitably in the Asia Pacific region in the future.

In 2016, we once again held special events aimed toward investors who base their investment decisions on sustainability criteria. There, we outlined in particular our measures for climate protection and energy efficiency. In addition, we offered several special creditor relations roadshows, where creditors and credit analysts could learn more about our business and financing strategy.

Investors can find comprehensive information about BASF and BASF shares on our website and on social media platforms.

Analysts and investors have confirmed the quality of our communication work: We took first place among European chemical companies in the annual survey conducted by Britain's IR Magazine. Institutional Investor Magazine recognized BASF in such areas as best investor day and best investor relations program in the European chemical industry. Moreover, the British IR Society honored the integration of sustainability reporting into BASF's corporate communications activities with first place in this international category. BASF won the Building Public Trust Award from auditing firm PricewaterhouseCoopers for best integrated corporate report in 2015. The award, which was presented in Germany for the first time, is intended to recognize companies for their open, honest and transparent reporting, not just of the classic reporting elements but also nonfinancial aspects such as sustainability, risk management and corporate governance.

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

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

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

Key BASF share data

		2012	2013	2014	2015	2016
Year-end price	€	71.15	77.49	69.88	70.72	88.31
Year high	€	73.09	78.97	87.36	96.72	88.31
Year low	€	51.89	64.79	65.61	65.74	56.70
Year average	€	62.17	71.96	77.93	79.28	70.96
Daily trade in shares[1]						
	million €	205.6	200.8	224.5	264.5	201.9
	million shares	3.3	2.8	2.9	3.3	2.9
Number of shares December 31	million shares	918.5	918.5	918.5	918.5	918.5
Market capitalization December 31	billion €	65.4	71.2	64.2	65.0	81.1
Earnings per share	€	5.25	5.22	5.61	4.34	4.42
Adjusted earnings per share	€	5.64	5.31	5.44	5.00	4.83
Dividend per share	€	2.60	2.70	2.80	2.90	3.00
Dividend yield[2]	%	3.65	3.48	4.01	4.10	3.40
Payout ratio	%	50	52	50	67	68
Price-earnings ratio (P/E ratio)[2]		13.6	14.8	12.5	16.3	20.0

[1] Average, Xetra trading

[2] Based on year-end share price

Further information on BASF share

Securities code numbers	
Germany	BASF11
Great Britain	0083142
Switzerland	11450563
United States (CUSIP Number)	055262505
ISIN International Securities Identification Number	DE000BASF111
International ticker symbol	
Deutsche Börse	BAS
London Stock Exchange	BFA
Swiss Exchange	BAS

2

To Our Shareholders 5

Management's Report

Corporate Governance 125
Consolidated Financial Statements 151
Supplementary Information on the Oil & Gas Segment 221
Overviews 231

The BASF Group 19

Our strategy 22
Corporate strategy 22
Goals 26
Value-based management 28
Sustainability management 29

Innovation 32

Investments, acquisitions and divestitures 37

Business models and customer relations 39

Working at BASF 40

Social commitment 46

The BASF Group business year 47
Economic environment 47
Results of operations 50
Net assets 55
Financial position 56
Business review by segment 59
Chemicals 61
Performance Products 67
Functional Materials & Solutions 74
Agricultural Solutions 80
Oil & Gas 84
Other 89
Regional results 90

Responsibility along the value chain 92
Suppliers 92
Raw materials 94
Environment, health, safety and security 96
Responsible Care Management System 96
Transportation and storage 97
Production 98
Product stewardship 101
Energy and climate protection 103
Water 107
Air and soil 109

Forecast 111
Opportunities and risks report 111
Economic environment in 2017 119
Outlook 2017 122

The BASF Group

Global leader

BASF is the world's leading chemical company

In 80+ countries

Employees contribute to our success

Broad portfolio

5 segments
13 operating divisions
86 strategic business units

At BASF, we create chemistry for a sustainable future. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. The approximately 114,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is arranged into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas.

Organization of the BASF Group

- Thirteen divisions grouped into five segments
- Regional divisions, corporate units and research and functional units support our business

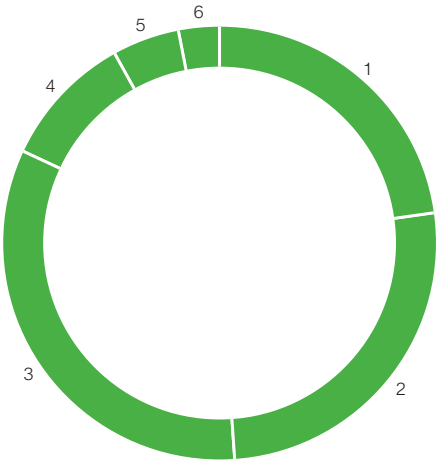
Thirteen divisions divided into five segments bear operational responsibility and manage our 57 global and regional business units. The divisions develop strategies for our 86 strategic business units and are organized according to sectors or products.

Our regional units are responsible for optimizing local infrastructure, and contribute to tapping our market potential. For financial reporting purposes, we organize our regional divisions into four regions: Europe; North America; Asia Pacific; and South America, Africa, Middle East.

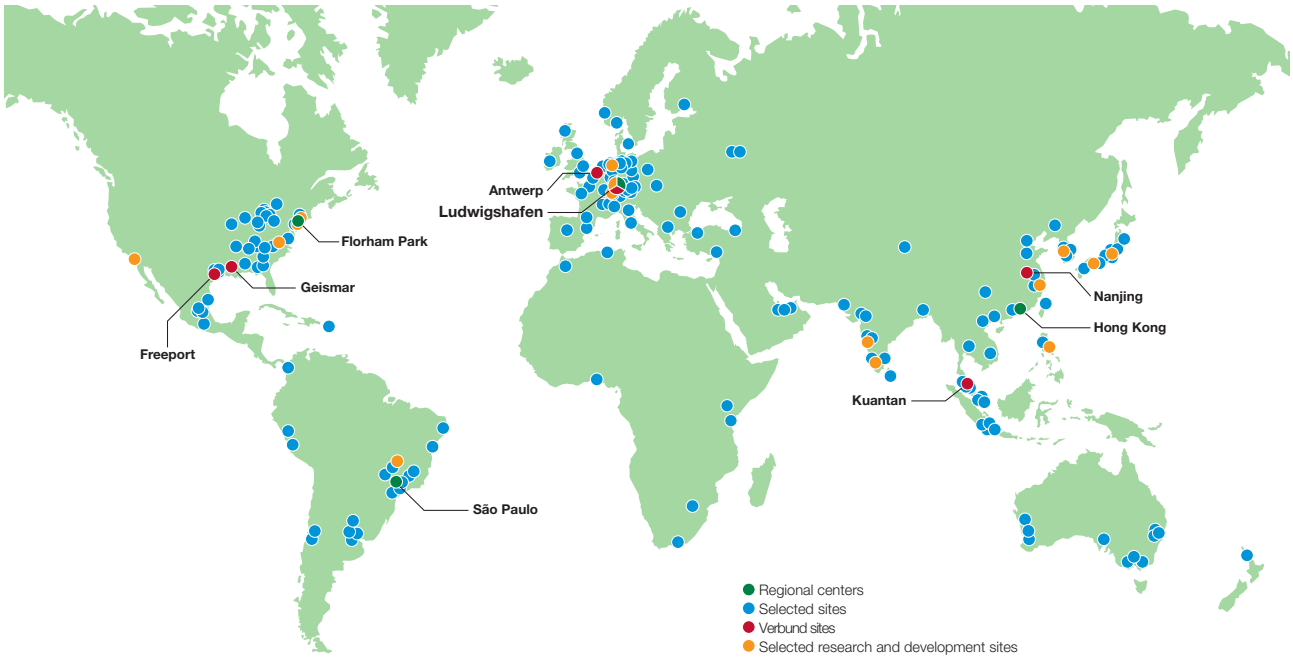
Until the end of 2016, three central divisions, six corporate units and ten competence centers supported the BASF Group's business activities in areas such as finance, engineering, investor relations, communications and research. At the beginning of 2017, we reassembled these into five research units, eight functional units and seven corporate units. We realigned the organizational structures in selected functional units. These include Procurement, Human Resources and Supply Chain Operations & Information Services, along with Environmental Protection, Health & Safety and European Site & Verbund Management. With this organization, we are aligning ourselves more closely to customer and market needs and reducing internal interfaces.

BASF structure
Percentage of total sales in 2016

1	Chemicals	– Petrochemicals – Monomers – Intermediates	23%
2	Performance Products	– Dispersions & Pigments – Care Chemicals – Nutrition & Health – Performance Chemicals	26%
3	Functional Materials & Solutions	– Catalysts – Construction Chemicals – Coatings – Performance Materials	33%
4	Agricultural Solutions	– Crop Protection	10%
5	Oil & Gas	– Oil & Gas	5%
6	Other		3%



BASF sites



Markets and sites

- BASF companies in more than 80 countries
- Six Verbund sites and 352 additional production sites worldwide

BASF has companies in more than 80 countries and supplies products to numerous customers in nearly every part of the world. In 2016, we generated 43% of our sales (excluding Oil & Gas) with customers in Europe. In addition, 26% of sales were generated in North America; 22% in Asia Pacific; and 9% in South America, Africa, Middle East. Viewed over the entire BASF Group, 45% of our sales were to customers in Europe, 25% in North America, 21% in Asia Pacific and 9% in South America, Africa, Middle East.

We operate six Verbund sites and 352 additional production sites worldwide. Our Verbund site in Ludwigshafen is the world's largest integrated chemical complex. This was where the Verbund principle was originally developed and steadily honed before being implemented at additional sites.

Verbund

- Intelligent plant networking in the Production Verbund
- Technology and Know-How Verbund

The Verbund system is one of BASF's great strengths. Here, we add value as one company by using our resources efficiently. The Production Verbund intelligently links production units and energy demand so that, for example, the waste heat of one plant provides energy to others. Furthermore, one facility's by-products can serve as feedstock elsewhere. This not only saves us raw materials and energy, it also avoids emissions, lowers logistics costs and makes use of synergies.

We also make use of the Verbund principle for more than production, applying it for technologies, knowledge, employees, customers, and partners, as well. Expert knowledge is pooled into our global research platforms.

For more on the Verbund concept, see basf.com/en/verbund

Competitive environment

BASF holds one of the top three market positions in around 70% of the business areas in which it is active. Our most important global competitors include AkzoNobel, Clariant, Covestro, Dow Chemical, DSM, DuPont, Evonik, Formosa Plastics, Reliance, SABIC, Sinopec, Solvay and many hundreds of local and regional competitors. We expect competitors from emerging markets to gain increasing significance in the years ahead.

Corporate legal structure

As the publicly traded parent company, BASF SE takes a central position: Directly or indirectly, it holds the shares in the companies belonging to the BASF Group, and is also the largest operating company. The majority of Group companies cover a broad spectrum of our business. In some, we concentrate on specific business areas: The Wintershall Group, for example, focuses on oil and gas activities. In the BASF Group Consolidated Financial Statements, 286 companies including BASF SE are fully consolidated. We consolidate eight joint operations on a proportional basis, and account for 34 companies using the equity method.

For more information, see the Notes to the Consolidated Financial Statements from page 172 onward

Compensation Report and disclosures in accordance with Section 315(4) of the German Commercial Code (HGB)

The Compensation Report can be found in the Corporate Governance chapter from page 138 onward, and the disclosures required by takeover law in accordance with Section 315(4) HGB from page 132 onward. They form part of the Management's Report audited by the external auditor.

Declaration of Corporate Governance in accordance with Section 315(5) HGB in connection with Section 289a HGB

The Declaration of Corporate Governance can be found in the Corporate Governance chapter from page 125 onward and is a component of the Management's Report. It comprises:

- Corporate Governance Report (except disclosures pursuant to Section 315(4) of HGB)
- Compliance reporting
- The Declaration of Conformity pursuant to Section 161 of the German Stock Corporation Act

Pursuant to Section 317(2)(4) HGB, information disclosed in accordance with Section 315(5) HGB is not included in the audit conducted by the report auditor.

Our strategy
Corporate strategy

Purpose	Principles	Values
We create chemistry for a sustainable future	As strategic basis for our success on the market	As guideline for our conduct and actions

With the "We create chemistry" strategy, BASF has set itself ambitious goals in order to strengthen its position as the world's leading chemical company. We want to contribute to a sustainable future and have embedded this into our corporate purpose: "We create chemistry for a sustainable future."

In 2050, nearly ten billion people will live on Earth. While the world's population and its demands will keep growing, the planet's resources are finite. On the one hand, population growth is associated with huge global challenges; and yet we also see many opportunities, especially for the chemical industry.

Our corporate purpose

- We create chemistry for a sustainable future

We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. We do so by creating chemistry for our customers and society and by making the best use of available resources.

We live our corporate purpose by:
– Sourcing and producing responsibly
– Acting as a fair and reliable partner
– Connecting creative minds to find the best solution for market needs

For us, this is what successful business is all about.

Our leading position as an integrated global chemical company gives us the chance to make important contributions in the following three areas:
– Resources, environment and climate
– Food and nutrition
– Quality of life

We therefore act in accordance with four strategic principles.

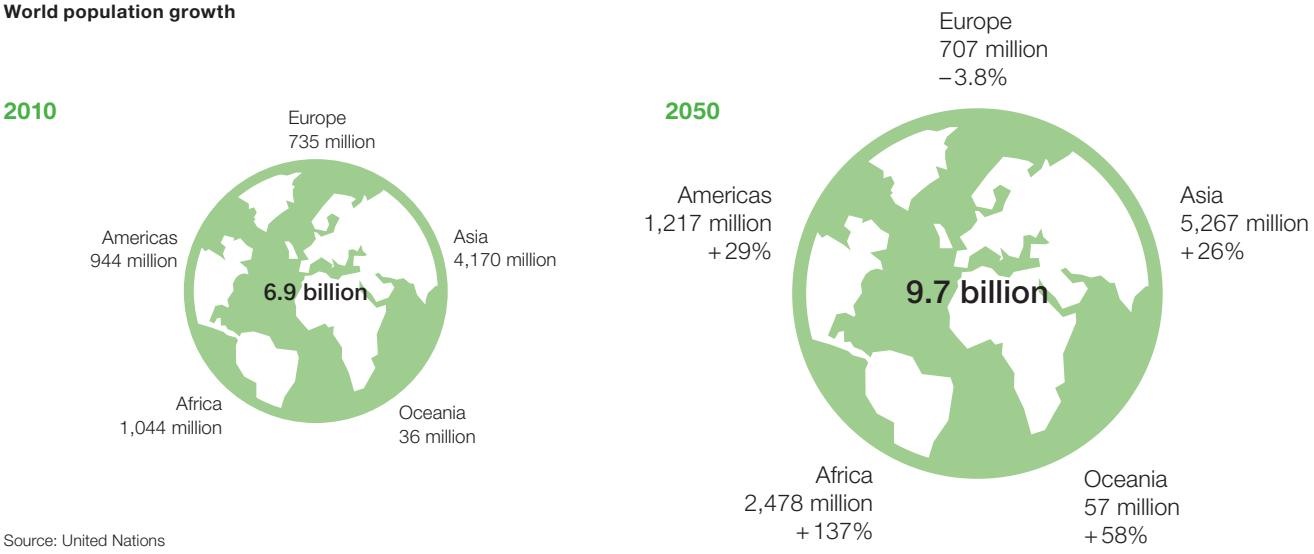
Our strategic principles

- We add value as one company
- We innovate to make our customers more successful
- We drive sustainable solutions
- We form the best team

We add value as one company. Our Verbund concept is unique in the industry. Encompassing the Production Verbund, Technology Verbund and Know-How Verbund as well as all relevant customer industries worldwide, this sophisticated and profitable system will continue to be expanded. This is how we combine our strengths and add value as one company.

We innovate to make our customers more successful. We want to align our business optimally with our customers' needs and contribute to their success with innovative and sustainable solutions. Through close partnerships with customers and research institutes, we link expertise in chemistry,

World population growth



Source: United Nations

biology, physics, materials science and engineering to jointly develop customized products, functional materials, and system solutions as well as processes and technologies.

We drive sustainable solutions. In the future, sustainability will more than ever serve as a starting point for new business opportunities. That is why sustainability and innovation are becoming significant drivers for our profitable growth.

We form the best team. Committed and qualified employees around the world are the key to making our contribution to a sustainable future. Because we want to form the best team, we offer excellent working conditions and inclusive leadership based on mutual trust, respect and dedication to top performance.

For more on innovation, see page 32 onward
For more on business opportunities with sustainability, see page 29 onward
For more on the Best Team Strategy, see page 40 onward

Our values

- Creative
- Open
- Responsible
- Entrepreneurial

Our conduct is critical for the successful implementation of our strategy: This is what our values represent. They guide how we interact with society, our partners and with each other.

Creative: In order to find innovative and sustainable solutions, we have the courage to pursue bold ideas. We link our areas of expertise from many different fields and build partnerships to develop creative, value-adding solutions. We constantly improve our products, services and solutions.

Open: We value diversity – in people, opinions and experiences. That is why we foster dialog based on honesty, respect and mutual trust. We develop our talents and capabilities.

Responsible: We act responsibly as an integral part of society. In doing so, we strictly adhere to our compliance standards. And in everything we do, we never compromise on safety.

Entrepreneurial: All employees contribute to BASF's success – as individuals and as a team. We turn market needs into customer solutions. We succeed in this because we take ownership and embrace accountability for our work.

Our focus areas

- We set ourselves goals along the value chain for our focus areas

We used a materiality analysis to identify and rank relevant sustainability issues. These topics include, for example, energy and climate, water, resources and ecosystems, responsible production, and employment and employability.

Our long-term economic success is dependent on societal acceptance of our business activities. That is why we have formulated clear expectations for our conduct along the value chain:

– We source responsibly.
– We produce safely for people and the environment.
– We produce efficiently.
– We respect people and treat them fairly.
– We drive sustainable solutions.

For more on our materiality analysis, see basf.com/materiality
For more on our goals, see page 26 onward

The BASF brand

- **Above-average awareness of, and trust in, BASF brand in chemical industry**

We rely on a strong brand in order to further expand our position as the world's leading chemical company. Our brand is derived from our strategy and our corporate purpose – "We create chemistry for a sustainable future" – as well as our strategic principles and values.

"Connected" describes the essence of the BASF brand. Connectivity is one of BASF's great strengths. Our Verbund concept – realized in production, technologies, knowledge, employees, customers and partners – enables innovative solutions for a sustainable future. The claim that "We create chemistry," as stated in the BASF logo, helps us embed this solution-oriented strategy in the public consciousness. Our brand creates value by helping communicate its benefits for our stakeholders as well as our values.

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

We are constantly developing our brand image. We regularly measure awareness of and trust in our brand, and therefore in our company. A global market research study conducted every two years showed in 2016 that, in terms of awareness and trust, BASF is above the industry average in numerous countries. The study collected data on respondents' aided awareness of BASF and our most important competitors. Our goal is to continue increasing awareness of BASF in all of our relevant markets.

Global standards

- **We act according to clearly defined values and standards of conduct that comply with or go beyond laws and regulations**
- **We review our performance with regular audits**

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

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

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

Our business partners are expected to comply with prevailing laws and regulations and to align their actions with internationally recognized principles. We have established monitoring systems to ensure this.

For more on labor and social standards, see page 45
For more on the Responsible Care Management System, see page 96
For more on Corporate Governance, see page 125 onward
For more on Compliance, see page 134 onward

Innovations for a sustainable future

Innovations in chemistry are needed to meet the needs of the growing world population on a long-term basis. The development of innovative products and solutions is, therefore, of vital significance for BASF. In the long term, we aim to continue significantly increasing sales and earnings with new and improved products. Effective and efficient research is therefore indispensable.

We drive intensive research and development activities in our established business areas. One focus of our research is on the enhancement and innovative application of specific key technologies. They pool the diverse competencies of our international Research and Development Verbund to strengthen our competitive ability in the long-term. We also work on specific growth fields in order to develop future business fields for BASF. With our research, we aim to make a decisive contribution to innovative solutions for global challenges and contribute to sustainable development.

Our three global technology platforms are each based in one of the regions particularly significant for us: Process Research & Chemical Engineering (Ludwigshafen, Germany), Advanced Materials & Systems Research (Shanghai, China) and Bioscience Research (Research Triangle Park, North Carolina). We want to continue expanding our research and development activities on a global level, and are also adapting this to the growth in regional markets. The stronger global presence of our research and development opens up new opportunities to actively participate in worldwide innovation processes and gain access to talent.

For more on innovation, see page 32 onward

Business expansion in emerging markets

In the years ahead, we want to grow even more vigorously in the emerging markets and further expand our position there. Today's emerging markets are expected to account for around 60% of global chemical production in 2020. We aim to benefit from the above-average growth in these regions and therefore plan to invest more than a quarter of our capital expenditures[1] there between 2017 and 2021.

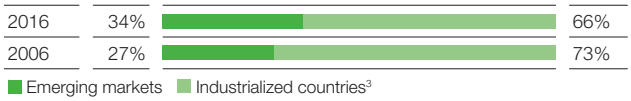
Growth in the emerging markets remained overall stable in 2016 as compared with the previous year. In China, government support measures kept growth from slowing down as much as we had expected. The other emerging markets of Asia were able to largely retain their growth dynamic. Gross domestic product continued to drop in South America. Brazil found itself in a severe recession, while gross domestic product decreased slightly in Argentina, as well. Economic performance in Russia shrank only marginally after sharp declines in the previous year; a contributing factor was the stabilization of oil prices. Overall, the emerging markets of eastern Europe were able to post slight growth once again.

Compared with 2015, sales (excluding Oil & Gas) at our companies headquartered in the emerging markets declined by 3% to €14,849 million. Increased sales volumes could only partly compensate for negative currency and price effects. Measured by customer location, sales (excluding Oil & Gas) in the emerging markets fell by 4% to €18,742 million. This brought sales to customers in emerging markets to around 34% of total sales (excluding Oil & Gas) in 2016. In the years ahead, we want to continue expanding this percentage.

For more on our goals, see page 26 onward

For more on current developments, see the Regional Results on page 91

Sales[2] in emerging markets



[2] Percentage of BASF Group sales (excluding Oil & Gas) by location of customer

[3] Comprises EU15, Norway, Switzerland, United States, Canada, Japan, South Korea, Australia, New Zealand

[1] Excluding additions to property, plant and equipment resulting from acquisitions, capitalized exploration, restoration obligations and IT investments

Goals

We carry out our corporate purpose, "We create chemistry for a sustainable future," by pursuing ambitious goals along our entire value chain. In this way, we aim to achieve profitable growth and take on social and environmental responsibility. We are focusing on issues through which we as a company can make a significant contribution.

Goal areas along the value chain

Procurement

	2020 Goal	Status at end of 2016	More on
Assessment of sustainability performance of relevant suppliers[1] according to our risk-based approach; development of action plans where improvement is necessary	70%	32%	Page 92

[1] We define relevant suppliers as those showing an elevated sustainability risk potential as identified by risk matrices and with respect to corresponding country risks. Our suppliers are evaluated based on risk due to the size and scale of our supplier portfolio.

Growth and profitability

As determined in 2015, our aim for the years ahead is, on average, to grow sales slightly faster and EBITDA considerably faster than global chemical production (excluding pharmaceuticals; 2016: 3.4%), and to earn a significant premium on our cost of capital. Moreover, we strive for a high level of free cash flow each year, either raising or at least maintaining the dividend at the prior-year level. The goals for sales and EBITDA are based on the 2015 figures, excluding contributions from the business disposed of in the asset swap with Gazprom in September 2015.

For more on our Results of Operations, see pages 50 to 54

	2016	Change since 2015
Sales	€57.6 billion	(4.6%)[2]
EBITDA	€10.5 billion	5.3%[2]
Dividends per share paid out	€2.90	€0.10
Premium on cost of capital	€1.1 billion	
Free cash flow	€3.6 billion	

[2] Baseline 2015: excluding business transferred to Gazprom

Employees

	2021 Goal	Status at end of 2016	More on
Proportion of women in leadership positions with disciplinary responsibility	22–24%	19.8%	Page 43
	Long-term goals		
International representation among senior executives[3]	Increase in proportion of non-German senior executives (baseline 2003: 30%)	36.4%	Page 43
Senior executives with international experience	Proportion of senior executives with international experience over 80%	84.6%	Page 43
Employee development	Systematic, global employee development as shared responsibility of employees and leaders based on relevant processes and tools	The project has been implemented for around 78,150 employees worldwide.	Page 42

[3] The term "senior executives" refers to leadership levels 1 to 4, whereby level 1 denotes the Board of Executive Directors. In addition, individual employees can attain senior executive status by virtue of special expertise.

Production

	2025 Goals	Status at end of 2016	More on
Reduction of worldwide lost-time injury rate per one million working hours	≤0.5	1.4	Page 98
Reduction of worldwide process safety incidents per one million working hours	≤0.5	2.0	Page 99
	Annual goal		
Health Performance Index	>0.9	0.96	Page 99

Product stewardship

	2020 Goal	Status at end of 2016	More on
Risk assessment of products that we sell in quantities of more than one metric ton per year worldwide	>99%	75.4%	Page 101

Energy and climate protection

	2020 Goals	Status at end of 2016	More on
Coverage of our primary energy demand by introducing certified energy management systems (ISO 50001) at all relevant sites[4]	90%	42.3%	Page 104
Reduction of greenhouse gas emissions per metric ton of sales product (excluding Oil & Gas, baseline 2002)	(40%)	(37.2%)	Page 104

[4] The selection of relevant sites is determined by the amount of primary energy used and local energy prices.

Water

	2025 Goal	Status at end of 2016	More on
Introduction of sustainable water management at all production sites in water stress areas and at all Verbund sites (excluding Oil & Gas)	100%	42.6%	Page 107

Products and solutions

	2020 Goal	Status at end of 2016	More on
Increase the proportion of sales generated by products that make a particular contribution to sustainable development ("Accelerators")	28%	27.2%	Page 30

Value-based management

"We add value as one company" is one of the four principles of our "We create chemistry" strategy. To create value in the long term, a company's earnings must exceed the cost of stockholders' equity and borrowing costs. This is why we strive to earn a significant premium on our cost of capital. To ensure BASF's long-term success, we encourage and support all employees in thinking and acting entrepreneurially in line with our value-based management concept. Our goal: to create awareness as to how each and every employee can find value-oriented solutions in the company's day-to-day operations and implement these in an effective and efficient manner.

EBIT after cost of capital

■ Performance and management indicator

Income from operations (EBIT) after cost of capital is a key performance and management indicator for the BASF Group, its operating divisions and business units. This figure combines the company's economic situation as summarized in EBIT with the costs for the capital made available to us by shareholders and creditors. When EBIT exceeds cost of capital, we earn a premium on our cost of capital and exceed the return expected by our shareholders.

Calculating EBIT after cost of capital

■ Cost of capital determined using cost of capital percentage and cost of capital basis

To calculate EBIT after cost of capital, we take the BASF Group's EBIT and deduct the EBIT of activities recognized under Other – not allocated to the segments – and subtract the cost of capital of the BASF Group from the resulting figure. **Cost of capital** is determined by applying cost of capital before taxes to the value of the cost of capital basis at each month end. Monthly cost of capital is then added up over the course of the year.

The **cost of capital percentage** (weighted average cost of capital, WACC) is determined using the weighted cost of capital from equity and borrowing costs. The cost of equity is ascertained using the Capital Asset Pricing Model. Borrowing costs are determined based on the financing costs of the BASF Group. EBIT after cost of capital, which we use as a steering parameter, is a pretax figure. Therefore, we use the current average tax rate to derive the pretax cost of capital percentage from the WACC. The projected net expense of Other is already provided for by an adjustment in the cost of capital percentage.

The **cost of capital basis** consists of a segment's operating assets plus the customer and supplier financing not included there. Operating assets comprise the current and noncurrent asset items[1] used by the operating divisions.

Value-based management throughout the company

■ Exercising a value-oriented mindset in day-to-day business by every employee

For us, value-based management means the daily focus placed on value by all of our employees. To this end, we have identified value drivers that show how each and every unit in the company can create value. We develop performance indicators for the individual value drivers that help us to plan and pursue changes.

An important factor in ensuring the successful implementation of value-based management is linking the goals of BASF to the individual target agreements of employees. In the operating units, the most important performance indicator is **EBIT after cost of capital**. By contrast, the functional units' contribution to value is assessed on the basis of effectiveness and efficiency.

All this forms a consistent system of value drivers and key indicators for the individual levels and functions at BASF. In addition to EBIT after cost of capital, **EBIT** and **EBIT before special items** are the most significant performance indicators for measuring economic success as well as for steering the BASF Group and its operating units.

We primarily comment on EBIT before special items on a segment and division level in our financial reporting. **Special items** arise from the integration of acquired businesses, restructuring measures, impairments, gains or losses resulting from divestitures and sales of shareholdings, and other expenses and income that arise outside of ordinary business activities. Adjusting for special items makes EBIT before special items an especially suitable figure for illustrating development over time. In addition to EBIT before special items, we also report on **sales** as a further main driver for EBIT after cost of capital. BASF's nonfinancial targets are focused more on the long term, and are not used for short-term steering.

According to our value-based management concept, all employees can make a contribution in their business area to help ensure that we earn the targeted premium on our cost of capital. We pass this value-based management concept on to our team around the world through seminars and training events, thereby promoting entrepreneurial thinking at all levels within BASF.

For more on the development of the figures outlined in Results of Operations, see page 50 onward

[1] These include fixed assets, intangible assets, investments accounted for using the equity method, inventories, trade accounts receivable, other receivables generated by core business activities, and other assets as well as any assets of disposal groups.

Sustainability management

Sustainability is an integral part of our corporate strategy. Using the various tools of our sustainability management, we carry out our company purpose: "We create chemistry for a sustainable future." Sustainability is integrated into our core business, in line with our strategic principle "We drive sustainable solutions." This is how we seize business opportunities and minimize risks along the value chain.

Strategy

- Recognizing significant topics and trends
- Taking advantage of business opportunities
- Minimizing risks

As the world's leading chemical company, we aim to add value in the long term for our company, the environment, and society. Sustainability is a driver for growth as well as an element of our risk management. That is why we incorporate aspects of sustainability into our decision-making processes and have defined clear responsibilities in our organization.

We have created structures to promote sustainable, entrepreneurial actions all the way from strategy to implementation. The Corporate Sustainability Board is BASF's central steering committee for sustainable development. It is comprised of the heads of our business, corporate and functional units as well as of the regions. A member of the Board of Executive Directors serves as chair. We have also established an external, independent Stakeholder Advisory Council. Here, international experts from science and society contribute important external perspectives to discussions with BASF's Board of Executive Directors, thereby helping us expand our strengths and identify our potential for improvement.

Through our materiality analysis, constant dialog with stakeholders, and our many years of experience, we are continuously developing a better understanding of significant topics and trends as well as potential opportunities and risks along our value chain.

We were already using a materiality analysis back in 2013 to identify such topics as energy and climate, water, resources and ecosystems, responsible production, and employment and employability. A strategic evaluation process built upon this in 2015 and 2016 to define new focus topics along the value chain.

They provide strategic orientation for BASF's commitments in meeting the growing challenges along the value chain:
– We source responsibly.
– We produce safely for people and the environment.
– We produce efficiently.
– We respect people and treat them fairly.
– We drive sustainable solutions.

Relevant topics resulting from these commitments form the focal points of our reporting, which we integrate into our long-term steering processes.

We take advantage of business opportunities by offering our customers innovative products and solutions that contribute to sustainable development. We ensure that sustainability criteria are integrated into our business units' development and implementation of strategies, research projects, and innovation processes. For example, we analyze sustainability-related market trends in customer industries, such as the packaging industry, in order to zero in on taking advantage of new business opportunities.

Our risk management supports our long-term business success. We aim to reduce potential risks in the areas of environment, safety and security, health protection, product stewardship, compliance, and labor and social standards by setting ourselves globally uniform requirements that frequently go beyond legal requirements. Internal monitoring systems and complaint mechanisms enable us to check compliance with these standards: they include, for example, questionnaires, audits and compliance hotlines. All employees, managers, and Board members are required to abide by our global Code of Conduct, which defines a mandatory framework for our business activities.

Our investment decisions for property, plant and equipment and financial assets also involve sustainability criteria. Our decision-making is supported by expert appraisals that assess economic implications as well as potential effects on the environment, human rights or local communities.

For more on the organization of our sustainability management, see basf.com/sustainabilitymanagement

For more on our materiality analysis, see basf.com/materiality

For more on our financial and sustainability goals, see page 26 onward

For more on our production standards, see page 98 onward

For more on standards in our supply chain, see page 92 onward

For more on Compliance and our Code of Conduct, see page 134 onward

Engaging stakeholders

■ **Constant dialog with our stakeholders**

Our stakeholders include customers, employees, suppliers and shareholders, as well as representatives from science, industry, politics, society and media. Parts of our business activities, such as the use of new technologies, are frequently viewed by our stakeholders with a critical eye. In order to increase societal acceptance for our business activities, we take on critical questions, assess our business activities in terms of their sustainability, and communicate transparently. Such dialogs help us to even better understand society's expectations of us and which measures we need to pursue in order to establish trust and build partnerships.

To involve our stakeholders even more closely, members of the Board of Executive Directors once again met with the Stakeholder Advisory Council in 2016 to discuss important aspects of sustainability. Topics include further integrating sustainability into our company, as well as our new "Value to Society" approach. This involves evaluating the societal benefits and costs generated by BASF's business activities.

We have a particular responsibility toward our production sites' neighbors. With the established community advisory panels, we aim to promote open exchange between citizens and our site management, and strengthen trust in our activities. In 2016, we developed new, globally applicable requirements for community advisory panels at our sites. These minimum requirements are oriented toward the grievance mechanisms outlined in the U.N. Guiding Principles for Business and Human Rights. We keep track of their implementation through the existing global databank of the Responsible Care Management System.

BASF is involved in worldwide initiatives with various stakeholder groups, such as the U.N. Global Compact. BASF's Chairman of the Board of Executive Directors is a member of the United Nations Global Compact Board. As a member of the U.N. Global Compact LEAD initiative, we support the implementation of the "Agenda 2030" and its Sustainable Development Goals. BASF is also active in local Global Compact networks.

We are part of the Global Business Initiative on Human Rights (GBI). This group of globally operating companies from various branches aims to ensure implementation of the U.N. Guiding Principles on Business and Human Rights. With international experts at the GBI conference in South Africa, we discussed how we can support a mining company and BASF supplier in fulfilling its responsibilities with respect to human rights.

Our lobbying and political communications are conducted in accordance with transparent guidelines and in keeping with our publicly stated positions. BASF does not financially support political parties. In the United States, employees at BASF Corporation have made use of their right to establish a Political Action Committee (PAC). The BASF Corporation Employee PAC is a voluntary, federally registered employee association founded in 1998. It collects donations for political purposes and independently decides how these are used, in accordance with U.S. law.

For more on stakeholder dialog, see basf.com/en/dialog
For more on the Stakeholder Advisory Council, see basf.com/en/stakeholder-advisory-council
For more on our guidelines for responsible lobbying, see basf.com/guidelines_political_communication
For more on our human rights position, see basf.com/humanrights and pages 45 and 134
For more on sustainability in procurement, see page 92 onward

Creating value

■ **Value to Society: method for assessing economic, environmental and social impact of business activities along the value chain**
■ **Evaluating sustainability performance to steer product portfolio**

We want to measure the value proposition of our actions along the entire value chain, aware that our business activities are connected to both positive and negative impacts on the environment and society. We strive to increase our positive contribution to society and minimize the negative effects of our business activities.

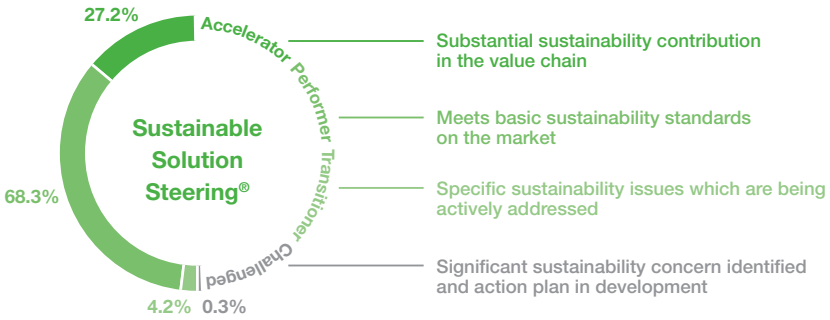
In order to achieve this, we need to understand better than ever how our actions impact society and the environment. We already have many years of experience evaluating our products and processes using such methods as eco-efficiency analyses, the Sustainable Solution Steering® portfolio analysis, or BASF's corporate carbon footprint.

Building on this, BASF has been developing a new method with external experts since 2014 to perform the first monetary assessment of the economic, ecological, and social impacts of its business activities along the value chain: the "Value to Society" approach. It enables a direct comparison between financial and nonfinancial effects on society, along with how these interact.

This transparency supports the integrated character of our actions, contributing to BASF's long-term success. The results of these assessments are helpful in our discussions with stakeholders, in internal progress measurements, and in decision-making processes.

We contribute our approach and expertise to current debates on the monetary value of the economic, environmental and social impact of business decisions. We share our experience in networks and are involved in the corresponding standardization processes within the International Organization for Standardization (ISO).

Sustainable Solution Steering®: How BASF's products contribute to sustainability



A significant lever for the targeted steering of our product portfolio, based on the sustainability performance of our products, is the Sustainable Solution Steering® method. By the end of the 2016 business year, BASF had conducted sustainability assessments and ratings for 95.9% of its entire relevant portfolio of more than 60,000 specific product applications – which account for €53.2 billion in sales. We consider the products' application in various markets and industries. Because of increasing sustainability requirements on the market, we regularly conduct reassessments of existing product categories as well as of the relevant portfolio.

"Accelerator" products make a particular contribution to sustainability in the value chain. That is why we want to increase the proportion of sales from Accelerator products to 28% by 2020. In 2016, this figure was at 27.2%.

2020 Goal

Increase proportion of sales generated by Accelerator products to 28%

One of our Accelerator products for the agricultural sector is Limus®, an additive for urea-based fertilizers. Using purely urea-based fertilizers means the loss of a large portion of nitrogen – one of the most important crop nutrients – through the activity of the urease enzyme. Adding Limus® inhibits this enzyme and ensures a constant supply of nitrogen. At the same time, less ammonia is released into the atmosphere. Ammonia contributes to smog, as well as to overfertilization and alternation of the ecosystem. Limus® thus leads to more consistent harvest yields while protecting the environment.

"Transitioners" are products with specific sustainability challenges that are being actively tackled. Due to the adjustment of the portfolio under evaluation, the number of these products rose in 2016. A fuel additive from our Keropur® line is one example of how we enhance the sustainability performance of our products. Such innovative fuel additives increase the efficiency of combustion engines. The result is reduced fuel consumption, and therefore fewer pollutant emissions. Keropur® 3638 is categorized as a Transitioner because it contains a liquid hydrocarbon mixture. This hydrocarbon mixture contains naphthalene, which categorizes it as a CMR (carcinogenic, mutagenic or toxic for reproduction) substance. In order to address some of our customers' occupational safety concerns, a research project was begun and a solution developed. Customers can now obtain the alternative Keropur® 3708, free of CMR substances.

For all products classified as "Challenged," we aim to develop prompt plans of action, even in the case of portfolio revisions and product reassessments. These action plans can include research projects, reformulations or even replacing one product with an alternative product. At the end of 2016, action plans had been created for 100% of Challenged products.

We furthermore promoted sustainability topics in 2016 through various joint projects with partners along the value chain. One such project involved supporting the agricultural trading company AGRAVIS Raiffeisen AG, based in Münster/Hannover, in conducting calculations for the manufacture of sustainable feed mixes. BASF developed an online calculation program that compares various feed mixes for pigs using sustainability criteria along the entire value chain. The underlying eco-efficiency analysis measures various parameters like emissions to water, land use, CO_2 emissions and costs. Customers can use this information to figure out how to reduce their products' environmental impact while keeping an eye on costs. For example, a comparison between conventional and optimized feed mixes showed how impact on the environment can be significantly reduced while production costs remain nearly unchanged. Major factors here included minimizing water and land use. With new combinable feed mixes containing grain by-products and other ingredients, reductions can be attained in the use of arable land for producing feed for hogs.

For more on Value to Society (methodology and results), see basf.com/en/value-to-society

For more on Sustainable Solution Steering®, see basf.com/en/sustainable-solution-steering

For more on our sustainability instruments, see basf.com/en/measurement-methods and page 94

Innovation

Around 10,000	€1,863 million	Around 3,000
Employees in research and development worldwide	Spent on research and development	Projects in research pipeline

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

For BASF, innovation is the key to successfully standing out from the crowd in a challenging market environment. Our innovative strength is based on our global team of highly qualified employees with various specializations. We had around 10,000 employees involved in research and development in 2016. Our three global technology platforms are each run from one of the regions particularly significant for us – Europe, Asia Pacific and North America: Process Research & Chemical Engineering (Ludwigshafen, Germany), Advanced Materials & Systems Research (Shanghai, China) and Bioscience Research (Research Triangle Park, North Carolina). Together with the development units in our operating divisions, they form the core of our global Know-How Verbund. BASF New Business GmbH and BASF Venture Capital GmbH supplement this network with the task of using new technologies to tap into attractive markets and new business models for BASF.

In 2016, we generated sales of over €10 billion with products launched on the market since 2011 that stemmed from research and development activities. In the long term, we aim to continue significantly increasing sales and earnings with new and improved products.

Global network

- **Network with around 600 universities, research institutes and companies**

Our global network of about 600 universities, research institutes and companies forms an important part of our Know-How Verbund. We collaborate with them in many different disciplines. The direct access to external scientific expertise, new technologies and talented minds from various disciplines strengthens our portfolio with creative new projects.

In our excellence program "UNIQUE – The BASF Academic Partnership Program," we are working intensively with fifteen leading universities around the world. BASF also runs four postdoc centers that pool collaborations with several research groups on a regional level. The North American Center for Research on Advanced Materials (NORA) and the California Research Alliance (CARA) are located in North America. The Joint Research Network on Advanced Materials and Systems (JONAS) is active in Europe, while the Network for Advanced Materials Open Research (NAO) covers the Asia Pacific region.

In order to continuously promote exchange with external customers and partners, we have integrated the Creator Space® approach from our 2015 anniversary year into our regular research activities. We use this program to develop innovative ideas.

Strategic focus

- **Enhanced innovation approach with strong focus on customers and markets**
- **Increased use of digital technologies**
- **Globalizing research and strengthening regional competencies**

Our **research pipeline** comprised approximately 3,000 projects in 2016. **Expenses** for research and development amounted to around €1,863 million, slightly below the prior year's level (€1,953 million). This was particularly attributable to the rearrangement of research activities in plant biotechnology and the corresponding adjustment of site structure in North America and Europe. Operating divisions were responsible for 79% of total research and development expenses in 2016. The remaining 21% was allocated to cross-divisional corporate research focusing on long-term topics of strategic importance to the BASF Group. We strive to maintain the recent years' high level of spending on research and development.

Innovations based on chemistry require market-oriented research and development focused on the needs of our customers. That is why our cross-divisional corporate research is closely aligned with the requirements of our operating

divisions. In order to bring promising ideas to market as quickly as possible, we regularly assess our research projects using a multistep process and focus our topics accordingly. Creativity, efficiency and collaboration with external partners are among the most important success factors.

We enhanced our **innovation approach** in 2016 with the aim of increasing our company's power of innovation and securing long-term competitive ability. We aim to achieve this by honing our research focus on topics that are strategically relevant for our business, strengthening our existing scientific processes and methods and introducing new ones, and optimizing organizational structures.

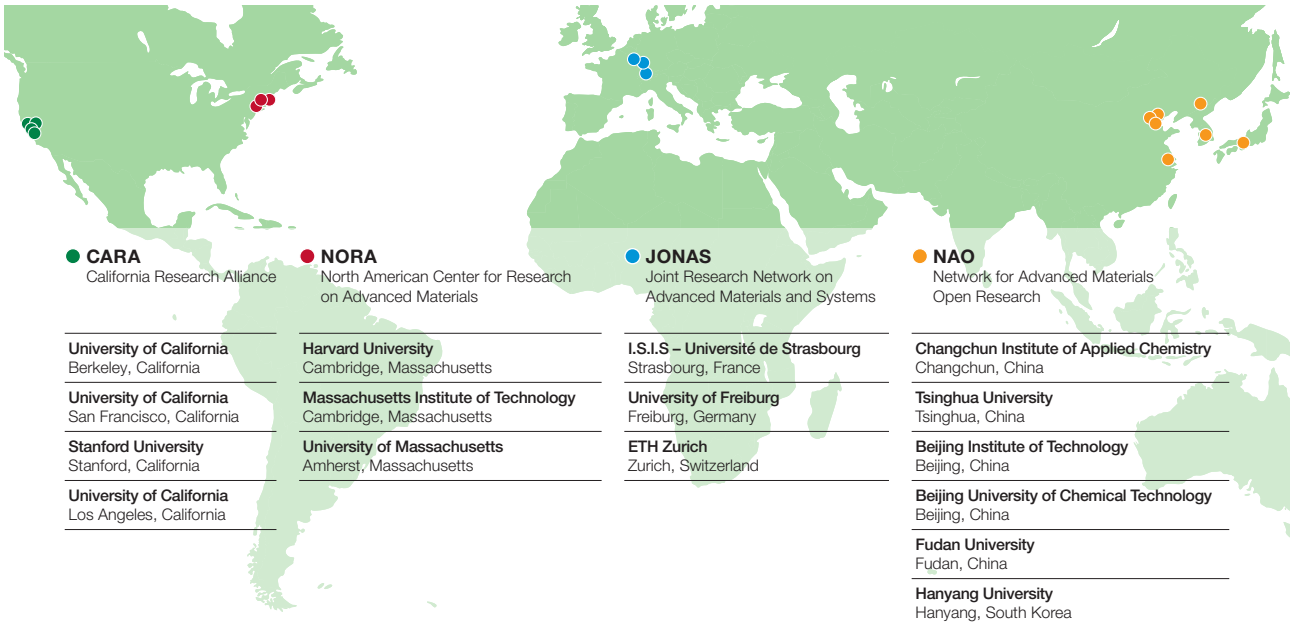
In so doing, we restructured cross-divisional corporate research in 2016 to create more space for the quick review of creative research approaches. At the same time, we tailored our previous technology fields even more toward the needs of the BASF Group. They have been rearranged into multiple, strategic key technologies that are constantly being further developed. We also place our focus on the innovative application of specific key technologies that are of central significance for our operating divisions. Examples include polymer technologies, catalyst processes and strategies for the development of biodegradable and bio-based materials.

In order to develop future business fields with high sales potential for BASF, we develop specific growth fields. These are regularly reviewed in terms of their attractiveness for BASF. When they mature, we transfer them to the operating divisions and promote the development of new approaches with high market potential. In addition, we have set a course for systematically using digital technologies in research and development. In the years ahead, existing expertise in fields like modeling and simulation will be consistently expanded and new digital work areas will be developed.

After rearranging our research activities in plant biotechnology, we undertook further organizational adjustments to our global R+D structures at the end of 2016. Research activities in Singapore were discontinued toward the end of the year due to market developments. We are pursuing the research topics located there at other sites. Research and development activities at the European research sites in Basel and Düsseldorf were restructured in order to be able to support the operating divisions there more effectively.

Our **global research and development presence** is vital to our success. In 2015, we had completed the expansion of the Innovation Campus Asia Pacific in Shanghai, China. A second Innovation Campus Asia Pacific is now being set up in Mumbai, India, in order to continue strengthening our regional research capacities. There, the focus areas in research will be on crop protection and method development.

Global network: postdoc centers



CARA
California Research Alliance

University of California Berkeley, California
University of California San Francisco, California
Stanford University Stanford, California
University of California Los Angeles, California

NORA
North American Center for Research on Advanced Materials

Harvard University Cambridge, Massachusetts
Massachusetts Institute of Technology Cambridge, Massachusetts
University of Massachusetts Amherst, Massachusetts

JONAS
Joint Research Network on Advanced Materials and Systems

I.S.I.S – Université de Strasbourg Strasbourg, France
University of Freiburg Freiburg, Germany
ETH Zurich Zurich, Switzerland

NAO
Network for Advanced Materials Open Research

Changchun Institute of Applied Chemistry Changchun, China
Tsinghua University Tsinghua, China
Beijing Institute of Technology Beijing, China
Beijing University of Chemical Technology Beijing, China
Fudan University Fudan, China
Hanyang University Hanyang, South Korea
Kyoto University Kyoto, Japan

We want to continue advancing our research and development activities in Asia especially, as well as in North America, and are adapting this to the growth in regional markets. This increased presence outside Europe creates new opportunities for fortifying and expanding customer relations and scientific collaborations and for gaining access to talented employees. The result will be to strengthen our Research and Development Verbund and make BASF an even more attractive partner and employer, both on a global level and in the regions.

Ludwigshafen remains the largest site in our Research Verbund. In the nearby BASF agricultural center of Limburgerhof – headquarters of the Crop Protection division – a new research and development center for biological crop protection and seed solutions was opened in April 2016.

The number and quality of our patents also attest to our power of innovation and long-term competitiveness. We filed around 850 new patents worldwide in 2016. For the eighth time in succession, we headed the rankings in the Patent Asset Index in 2016 – a method which compares patent portfolios industry-wide.

For a multiyear overview of research and development expenditures, see the Ten-Year Summary on page 233

Research focus areas – examples

Innovations based in chemistry to answer important questions of the future

Our focus areas in research are derived from the three major areas in which chemistry-based innovations will play a key role in the future: resources, environment and climate; food and nutrition; and quality of life.

The field of efficient energy systems reveals high innovation and market potential. In this context, BASF is working on such topics as the development of **high-temperature superconductors** based on yttrium barium copper oxide, which transmits electricity at low temperatures with negligible loss and enables savings potential in generating and transporting power. Its current-carrying capacity is twenty times greater than that of copper, the most commonly used material in electrical lines. Two milestones have been achieved on the path toward a market launch: BASF and the global energy company American Superconductor Corp. (AMSC) announced a licensing agreement and research cooperation together in March 2016. Furthermore, Deutsche Nanoschicht GmbH, a 100% subsidiary of BASF New Business GmbH, started up a pilot plant for manufacturing high-temperature superconductors in May 2016.

As the market leader in chemicals, BASF holds a special responsibility toward people and the environment. Accordingly, new products undergo comprehensive environmental and toxicological testing before being brought to market. These tasks are appointed to the Bioscience Research technology platform and include the search for new methods to reduce, improve or replace the animal testing required by law. We are the global forerunner in the chemical industry in developing such alternative methods. In May 2016, **LuSens**, an alternative method developed by BASF, was validated by the European Union. LuSens is one component of a three-part testing strategy that enables reliable screening for allergic skin reactions on contact with chemicals.

3-D printing involves the development of innovative materials. Compared with injection molding, 3-D printing offers advantages such as lower costs in small-series production, more time efficiency, and the realization of complex structural elements in a single manufacturing process. In the chemical industry, BASF has a broad material portfolio for 3-D printing at its disposal. BASF New Business GmbH is constructing a development center in Heidelberg, Germany, to develop improved materials and optimize the interplay between materials and 3-D printers, together with partners like printer manufacturer Farsoon Technologies. Furthermore, our Advanced Materials & Systems Research technology platform is active in this field at the sites in Ludwigshafen, Germany; Basel, Switzerland; Wyandotte, Michigan; and Shanghai, China. One attest to BASF's competencies in material development is Ultrasint PA6 X028, launched in April 2016. This powder, based on polyamide 6, is geared toward use in the laser sintering technique widely used in 3-D printing. Compared with conventional polyamides, it provides superior mechanical stability and higher heat resistance. Furthermore, BASF announced its intention in November 2016 to expand its cooperation with American printer manufacturer HP in order to move forward with the development of new 3-D print materials.

In the E.U.-supported **PRODIAS**[1] project, researchers and developers of our Process Research & Chemical Engineering technology platform are working together with partners from industry and academia on methods and processes that allow products based on renewable raw materials to be produced efficiently and with fewer resources, while simultaneously increasing the competitiveness of these products. The biotechnological processes used, like fermentation, mostly take place in diluted aqueous systems that demand energy-intensive steps for separation and purification. Through the use of freeze concentration – a technique typical in the food industry – we managed to concentrate biotechnologically produced products in an especially gentle manner with negligible losses for the first time in 2016.

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

[1] PRODIAS stands for **Pro**cessing **Di**luted **A**queous **S**ystems.

Innovations in the segments – examples

Research and development expenses by segment

1	Chemicals	10%
2	Performance Products	20%
3	Functional Materials & Solutions	21%
4	Agricultural Solutions	26%
5	Oil & Gas	2%
6	Corporate research, Other	21%

Chemicals: In 2016, we established the Amsterdam-based Synvina C.V. joint venture with Avantium to produce and market **furandicarboxylic acid (FDCA) from renewable resources** on an industrial scale. The most significant use of FDCS is the production of polyethylenefuranoate (PEF), a new polymer used for applications such as food and beverage packaging. Compared with conventional plastics, PEF demonstrates higher barrier properties for gases like carbon dioxide and oxygen, leading to a longer shelf life for packaged products. In addition, its higher mechanical strength allows for thinner – and therefore lighter – packaging.

Our new **HydroBlue®90** demonstrates that innovation and enhancement are even possible for products that were patented over 100 years ago. The product originally went to market as an auxiliary agent in dyeing textiles with indigo. Today, HydroBlue®90 ensures consistent high quality in the dyeing process. This stability is important for textile producers, as signs of faulty coloring in denim do not usually appear until after the garment is already finished. New HydroBlue®90 is especially highly concentrated, shelf-stable, odorless and dust-free.

With **Ultramid® C37LC,** BASF launched a new, high-quality copolyamide on the market in 2016. It ensures a stabler and more efficient production process for shrink films used in food packaging. Films produced with Ultramid® C37LC are considerably softer and more transparent than those made from conventional materials. Manufacturers of fishing nets and lines can also further increase the quality of their products using the new plastic.

Performance Products: Flexible food packaging must fulfill the highest functional requirements; at the same time, interest is growing in environmentally friendly solutions. That is why we are constantly enhancing the ink bonding agents of our **Joncryl® FLX** product line and the laminating adhesives of the **Epotal®** range. These water-based products provide a more environmentally friendly alternative to solvent-based systems for flexible packaging. With Epotal®, packaging manufacturers can also shorten the processing time between order placement and delivery.

Lavergy® Pro 104 L is a newly developed protease – or protein-splitting enzyme. Liquid detergents formulated with this enzyme are already powerfully effective at low washing temperatures, removing certain tough stains considerably better than the established market standards. Lavergy® Pro 104 L is even more powerful when combined with our high-performance detergent polymer Sokalan® HP 20. Expertise in both biology and chemistry allows us to offer customers even more opportunities to precisely customize liquid detergent formulations.

Farmers require high-quality feed for their animals. Yet preserved feed, typically in the form of silage, and water are both susceptible to pathogenic microorganisms. Adding our **Lupro-Mix® NA** organic acid mixture inhibits the growth of harmful bacteria and mold, allowing livestock to receive silage and water of the highest quality. Farmers also benefit from the fact that Lupro-Mix® NA is easier and safer to use than comparable products, while remaining nevertheless economical.

Plastic components offer possibilities to make vehicles lighter, more comfortable, and more aesthetically pleasing. Additives like light stabilizers are used to maintain the original properties and appearance of materials and surfaces for as long as possible. **Tinuvin® 880** is a novel light stabilizer that significantly increases the durability of plastic parts exposed to UV radiation and heat, making it suitable for automotive applications that require plastics to stand up to high levels of stress. Tinuvin® 880 can also be used in the construction, agricultural and packaging industries.

Functional Materials & Solutions: To meet ever-tightening exhaust regulations for diesel vehicles, manufacturers employ special catalysts for nitrogen oxides (NO_x) such as lean NO_x trap (LNT) technology, that is, NO_x adsorbers. With **EMPRO® LNT**, BASF has launched a new generation of these catalysts that are especially robust and powerful, even under widely various driving conditions, like city traffic, country roads, or interstate highways.

MasterSuna SBS is a new concrete additive that allows previously unsuitable types of sand to be processed into high-grade concrete. Clay minerals in sand usually prevent concrete superplasticizers from doing their job. With MasterSuna SBS, even sand containing high levels of clay can be used in the production of consistently high-quality concrete. Concrete producers save considerable costs, as they no longer need to pay for the transport of more suitable sands from distant sand pits. Fewer sand pits need to be opened, as well, which helps protect the environment and landscape.

Our **Cool Coatings** automotive coating technology combines innovative functional properties with a sophisticated design that allows for a broad color palette. The coating formulation reflects infrared light, reducing the vehicle's surface temperature by up to 20°C. This passive temperature management reduces the inside temperature by up to 4°C. Cool Coatings thus enables our customers to save on air conditioning, which decreases fuel consumption or, in the case of electric vehicles, increases range.

Ultramid® Advanced N, our new portfolio of heat-resistant polyamides, gives customers in different industries greater freedom for innovation, such as when it comes to developing technically sophisticated end-user products. It allows for the construction of lighter, smaller and more high-performance plastic components for demanding operating conditions, such as in automotive construction, household appliances or entertainment electronics. With **Ecovio® EA**, BASF has developed a high-performance foam that is bio-based and compostable. Its excellent properties make it especially suitable for the transport packaging of valuable, heavy or fragile goods that require high shock resistance and durability.

Agricultural Solutions: We are working with farmers around the globe to improve the quality and yield of their agricultural production while taking into account societal expectations and requirements. To achieve this, we constantly invest in our development pipeline in order to expand our portfolio both in and beyond conventional crop protection – such as in biological solutions. In 2016, we invested €489 million in research and development in the Crop Protection division, representing around 9% of sales for the segment.

Our well-stocked **innovation pipeline** comprises products with a launch date between 2016 and 2026. With a peak sales potential[1] of €3 billion, the pipeline comprises innovations from all business areas. The herbicide **Engenia®** is being introduced to the North American market for the 2017 growing season. It serves as a key component of dicamba and glyphosate-tolerant cropping systems for soy and cotton. We are also planning the launch of the new insecticides **Inscalis®** and **broflanilide**. Inscalis® combats piercing-sucking pests like aphids and whiteflies. An application for approval was submitted in 2016. Broflanilide is effective against chewing insects, like potato beetles and caterpillars, in specialty and field crops; use is also planned in professional pest control. With its novel mode of action, it is highly effective in low doses and will play an important role in resistance management.

We submitted the first approval applications for our new fungicide, **Revysol®**, in 2016. The active ingredient Revysol® is highly effective in combating a number of hard-to-control fungal infections, like Septoria tritici, an agent that causes leaf blotch in wheat. It will be offered in regionally and customer-specific product formulations and used in all important field and specialty crops worldwide. The first market launches are scheduled for the 2019 growing season upon registration with the relevant authorities.

For more on Inscalis®, see page 81

Oil & Gas: The Wintershall Group concentrates its innovation-related activities on improving the success rate of exploration, developing technologies for reservoirs with challenging development and production conditions, and increasing the recovery factor of reservoirs.

In the Düste crude oilfield in Germany, we tested an innovative and environmentally friendly method for increasing the reservoir's recovery factor and have achieved positive initial results. Wintershall developed a concept within the BASF Verbund for **microbial enhanced oil recovery (MEOR)**: We aim to use tiny life forms found in the reservoir, like microbes and microorganisms, to produce more crude oil. Fed nutrients, these multiply and produce various natural substances as metabolic products that can increase the oil recovery factor. Unlike other enhanced oil recovery (EOR) technologies, the use of microbes in MEOR can have several production-increasing effects at the same time. We also successfully managed, for the first time, to model these effects outside of the reservoir, allowing for more efficient use. A larger field test is scheduled to begin in 2017.

[1] Peak sales describes the highest sales value to be expected in one year. For more, see the Glossary on page 239.

Investments, acquisitions and divestitures

€4,314 million
In investments made in 2016

€2,944 million
Used for acquisitions in 2016

Optimization
Of our portfolio through acquisitions and divestitures

In addition to innovations, investments and acquisitions make a decisive contribution toward achieving our ambitious growth goals. We are intensifying our investment in emerging markets and in North America. We use targeted acquisitions to supplement our organic growth.

By investing in our plants, we create the conditions for our desired growth while constantly improving the efficiency of our production processes. For the period from 2017 to 2021, we have planned capital expenditures[1] totaling €19.0 billion. We want to invest more than a quarter of this amount in emerging markets and expand our local presence in order to benefit from the growth in these regions. In North America, investments in new production facilities form the basis of future growth. We also continue to develop our portfolio through acquisitions that promise above-average profitable growth, are driven by innovation, offer added value for our customers, and reduce the cyclicality of our earnings. Investments and acquisitions alike are prepared by interdisciplinary teams and assessed using diverse criteria. In this way, we ensure that economic, environmental and social concerns are included in strategic decision-making.

For more on our investments as of 2017, see pages 123 and 124

Investments and acquisitions 2016 (million €)

	Investments	Acquisitions	Total
Intangible assets	92	2,789	2,881
Thereof goodwill	–	1,552	1,552
Property, plant and equipment[2]	4,222	155	4,377
Total	**4,314**	**2,944**	**7,258**

[2] Including capitalized exploration, restoration obligations and IT investments

Investments

We invested €4,222 million in property, plant and equipment in 2016. Total investments were therefore €1,429 million lower than in the previous year and €531 million above the level of depreciation[3] in 2016. Our investments in 2016 focused on the Chemicals, Performance Products and Oil & Gas segments.

In Ludwigshafen, Germany, we started up further sections of our integrated TDI complex in 2016. TDI production began in August 2016. In November 2016, the TDI plant was temporarily shut down due to a technical defect in one part. Repairwork was ongoing at the time of this report's release. We continued work on revamping the new superabsorbent technology at the site in Antwerp, Belgium, and plan to complete this in 2017.

With our partner, PETRONAS Chemicals Group Berhad, headquartered in Kuala Lumpur, Malaysia, we completed construction on the new aroma ingredients complex at the integrated chemical site in Kuantan, Malaysia. Production facilities for citral and L-menthol will be gradually started up. In June 2016, we began construction of a new automotive coatings plant in Shanghai, China, together with our partner Shanghai Huayi Fine Chemical Co. Ltd., based in Shanghai, China. With these investments, we are expanding our presence in the emerging markets of Asia.

We are constructing an ammonia production plant in Freeport, Texas, together with Yara International ASA, headquartered in Oslo, Norway. At our site in Geismar, Louisiana, we completed the expansion of our butanediol capacities in 2016. The capacity expansion of our dicamba production in Beaumont, Texas, is expected to start up in 2017.

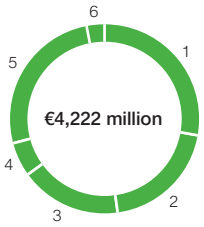
In the Oil & Gas segment, we invested primarily in field development projects in Argentina, Norway and Russia in 2016.

For more on investments within the segments, see page 61 onward

[1] Excluding additions to property, plant and equipment from acquisitions, capitalized exploration, restoration obligations and IT investments
[3] Including impairments and write-ups

Additions to property, plant and equipment[1] by segment in 2016

1	Chemicals	28%
2	Performance Products	20%
3	Functional Materials & Solutions	17%
4	Agricultural Solutions	6%
5	Oil & Gas	26%
6	Other (infrastructure, R&D)	3%



Additions to property, plant and equipment[1] by region in 2016

1	Europe	49%
2	North America	26%
3	Asia Pacific	19%
4	South America, Africa, Middle East	6%

[1] Including capitalized exploration, restoration obligations and IT investments

Acquisitions

We gained €155 million worth of property, plant and equipment through acquisitions in 2016. Additions to intangible assets including goodwill amounted to €2,789 million.

On September 26, 2016, we completed the acquisition of Guangdong Yinfan Chemistry ("Yinfan") in Jiangmen, China, and integrated the business into the Coatings division. This enabled us to add the Yinfan product line to our portfolio of automotive refinish coatings in Asia Pacific and gain access to a state-of-the-art production facility for automotive refinish coatings in China.

The purchase of global surface technology provider Chemetall from Albemarle Corp. in Charlotte, North Carolina, was completed on December 14, 2016. With the acquisition of this business, our Coatings division supplements its portfolio of tailor-made technology and system solutions for surface treatment. The purchase price amounted to $3.1 billion.

Effective January 1, 2017, we acquired the Henkel Group's western European building material business for professional users, broadening the portfolio of our Construction Chemicals division.

For more information on acquisitions, see the Notes to the Consolidated Financial Statements from page 174 onward

Divestitures

We completed the sale of the global polyolefin catalysts business to W.R. Grace & Co., based in Columbia, Maryland, on June 30, 2016. The transaction involved technologies, patents, trademarks and the transfer of production plants in Pasadena, Texas, and Tarragona, Spain. These activities had been assigned to the Catalysts division.

On August 26, 2016, we divested our global photoinitiator business to IGM Resins B.V., based in Wallwijk, Netherlands. The transaction comprised technology, patents, trademarks, customer relationships, contracts and inventories as well as the photoinitiator production site in Mortara, Italy. These activities had been organized under the Dispersions & Pigments division. High-performance photoinitiators for electronics customers were not part of the transaction, as the electronics industry is one of BASF's strategic focus areas.

We sold the Coatings division's business with industrial coatings to the AkzoNobel Group on December 14, 2016. The transaction included technologies, patents, trademarks, customer relationships and inventories as well as the transfer of two production sites in England and in South Africa.

For more information on divestitures, see the Notes to the Consolidated Financial Statements from page 174 onward

Business models and customer relations

Cost-effective	Customized	Innovative
And reliable supplier of classic chemicals	With products and formulations for specific industries	In close partnership with our customers

BASF's customer portfolio ranges from major global customers and medium-sized businesses to local workshops. We align our business models and sales channels with the respective customer groups and market segments. In line with our strategic principle, "We add value as one company," we tightly bundle our products and services to target the specific needs of customers from various sectors and bring innovations more quickly to market.

In the **classical chemicals** business, we mostly sell the chemicals produced in our Verbund in bulk. These comprise basic products from the Chemicals segment, such as steam cracker products, sulfuric acid, plasticizers, caprolactam and isocyanates. For these basic chemicals, our priority is on supplying customers reliably and cost effectively. Marketing is carried out partly via e-commerce.

We create a broad range of **customized products**, particularly in the Performance Products segment – from vitamins, personal care ingredients and color pigments to paper chemicals and plastic additives. In joint projects, we start working closely together with customers already at an early stage in order to develop new products or formulations for a specific industry. A worldwide network of development laboratories allows us to quickly adapt our products to local needs.

We offer **functionalized materials and solutions** tailored to customers' requirements, particularly in the Functional Materials & Solutions and Agricultural Solutions segments. These include, for example, engineering plastics, concrete additives, coatings and crop protection products. We engage in close partnerships with customers and develop innovations together that help them optimize their processes and applications. Our understanding of the entire value chain as well as our global structure and market knowledge are key success factors here.

For information on customer relations in the Oil & Gas segment, see page 84 onward

Industry orientation

- Around half of business units geared toward specific industries
- Industry teams pool cross-unit expertise, knowledge and contacts
- Industry orientation undergoing systematic, structured enhancement

We serve customers from many different sectors with our broad portfolio of diverse competencies, processes, technologies and products. Around half of our business units are oriented toward industries. By combining expertise and resources, we position ourselves as a solution-oriented system provider for our customers.

Yet not all business units can be arranged purely according to industry. That is why BASF has created sector-specific groups for key customer industries – like the automotive, construction and pharmaceutical sectors – or for growth fields such as enzymes. These "industry teams" pool expertise, knowledge and contacts across different units, sharpen our understanding of the value chains in customer industries and work on sector-specific solutions that often could not be developed within one operating division alone. Our innovations are geared specifically toward these needs and offer sustainable solutions for the packaging and print branches, for example. This means combining the expertise of seven divisions into one global industry team. Whether keeping food fresh, manufacturing user-friendly packaging or optimizing costs – we know the needs of the industry. The products and systems developed by these teams comprise tailor-made solutions for paper packaging, along with adhesives and plastics for packaging or coatings. Our portfolio offers value to paper manufacturers in every phase of their production: Process chemicals optimize costs and increase machine efficiency, functional chemicals grant products special properties and finishing chemicals improve the appearance and performance of ready-to-use paper and cardboard.

The close alignment of our business with our customers' needs is an important component of our "We create chemistry" strategy. We will therefore continue the systematic and structured enhancement of our industry orientation in the future.

Working at BASF

113,830	Life-long learning	3,120
Employees around the world	On center stage	Apprentices[1] in around 60 occupations

Our employees carry out the goals of the "We create chemistry" strategy. We want to attract and retain talented people for our company and support them in their development. To do so, we cultivate a working environment that inspires and connects people. It is founded on inclusive leadership based on mutual trust, respect and dedication to top performance.

Strategy

- **Best Team Strategy focuses on excellent people, workplace and leaders**

The Best Team Strategy is derived from our corporate strategy and contributes greatly to the achievement of our goals. We want to form the best team. To achieve this, we focus on three strategic directions: excellent people, excellent place to work and excellent leaders. Emphasis here is placed on our attractiveness in worldwide labor markets, personal and professional development, life-long learning, and supporting and developing our leaders. We are strongly committed to internationally recognized labor and social standards and strive to respect these worldwide.

Number of employees

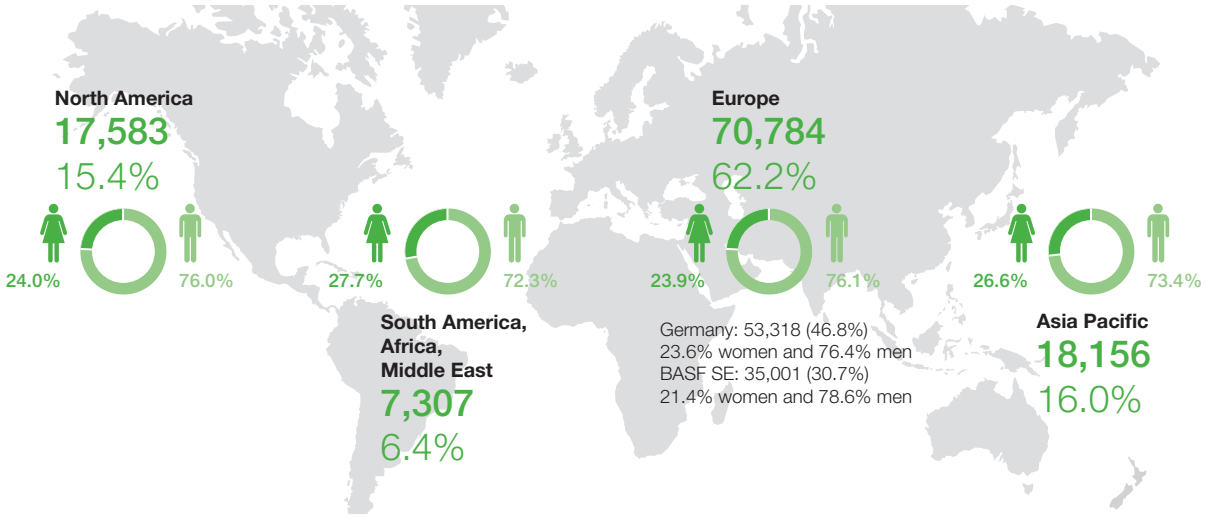
At the end of 2016, BASF had 113,830 employees (2015: 112,435); of these, 3,120 were apprentices (2015: 3,240). We hired 6,957 new employees Group-wide in 2016. Moreover, the acquisition of Chemetall especially added to our workforce. Reductions in headcount were related to events such as the sale of the industrial coatings and polyolefin catalysts businesses.

The average percentage of employees who resigned during their first three years of employment was 1.2% worldwide in 2016. This turnover rate was 0.5% in Europe, 1.5% in North America, 3.2% in Asia Pacific and 1.9% in South America, Africa, Middle East. Our turnover rates are therefore lower than those of many other companies.

BASF Group new hires in 2016

	December 31, 2016	Thereof women %
Europe	3,111	30.8
North America	1,584	31.3
Asia Pacific	1,733	32.1
South America, Africa, Middle East	529	38.9
Total	**6,957**	**31.9**

BASF Group employees by region
(Total: 113,830, thereof 24.6% women, as of December 31, 2016)



[1] At BASF, the apprenticeship program trains students for technical, scientific and business vocations as well as for trade and craft professions.

Competition for talent

- High scores in worldwide employer rankings
- Focus on social media and online marketing

In the global competition for the best employees and leaders, we want to recruit qualified talent in order to achieve our ambitious growth targets. This is why we continuously review measures to make our total offer package attractive for employees. For example, we have now expanded our career website to include a total of 61 countries in 2016. We continue to make use of social networks to reach candidates and ensure an innovative, target-group-appropriate approach through digital media, such as 360-degree videos showcasing selected workspaces. In North America, our online campaign to make BASF an attractive employer for women and minorities was highly successful. We were able to attract and hire new employees for the Innovation Campus Asia Pacific in Shanghai, China, at our "Live Day" virtual career fair in Asia Pacific. In South America, we trained employees in the use of social media as ambassadors of our employee brand.

We were once again able to achieve high scores in employer rankings in 2016. For example, in a study conducted by Universum, BASF was again selected by engineering and IT students as one of the 50 most attractive employers in the world. In North America, BASF was listed among Forbes' 100 Best Employers for the second time in a row. We are also far ahead of our key competitors in North America on the employer rating website glassdoor.com. In Brazil, BASF was once again named one of the top 150 employers in a ranking by Você SA magazine.

Vocational training

- 3,120 apprentices in around 60 occupations worldwide
- Around €104 million spent on vocational training

As of December 31, 2016, BASF was training 3,120 people in 14 countries and around 60 occupations. We spent a total of around €104 million on vocational training in 2016, as well as about €6 million on the BASF Training Verbund as part of our social commitment in the Rhine-Neckar Metropolitan Region.

In 2016, 837 apprentices started their vocational training at BASF SE and at German Group companies, filling almost all available program slots in Germany. The current shortage of skilled labor nevertheless presents a challenge that we address with various initiatives. In the Rhine-Neckar Metropolitan region, such programs include *Start in den Beruf* and *Anlauf zur Ausbildung*, in which 210 young people in the BASF Training Verbund participated in cooperation with partner companies in 2016. The goal here is to prepare participants for a subsequent apprenticeship within one year, making a contribution to the long-term supply of qualified employees in the region. Because the number of open vocational training placements meanwhile outweighs demand, some slots in these programs remained unfilled in 2016.

BASF launched its new apprenticeship campaign in May 2016, called "Show Us What You've Got!" (*Zeig's Uns!*). It underscores the fact that, for BASF, an applicant's overall impression is not made by technical know-how alone; personal interests and strengths like initiative, creativity and team spirit are also decisive factors.

At the Ludwigshafen site, we also offer a part-time training program for newcomers from other fields, so that they can qualify for a career in chemical production even while working at their current job.

The "Start Integration" program, begun with 50 placements in 2015, is geared toward refugees with a high probability of being granted the right to remain in Germany and aims to integrate them into the labor market in the Rhine-Neckar Metropolitan Region. BASF expanded the program to 300 placements and, for the 2016/2017 apprenticeship year, added three modules – include a one-year career prep course providing instruction in topics like language and intercultural training.

For more information, see basf.com/apprenticeship

BASF Group employees by contract type (total: 113,830)

	December 31, 2016	Thereof women %
Permanent staff	108,376	24.1
Apprentices	3,120	25.5
Temporary staff	2,334	45.3

What we expect from our leaders

- Leaders as role models
- Multifaceted offers for leadership development

Our leaders should be role models for applying our strategy in daily corporate life. We expect them to have a positive influence on shaping day-to-day business, relaying company values, and motivating employees. This includes how challenges are approached and how the leader's area of responsibility is continuously developed. Our leadership culture is founded on BASF's strategic principles and values as well as on the standards of behavior set out by our global Code of Conduct.

We offer our leaders learning and development measures for all phases of their career, coordinating global, regional and local opportunities. These are geared toward strengthening our leaders' competencies and offer chances to network and learn from one another. For example, we began the European Emerging Leader program in 2016, which guides leadership candidates into their roles over a period of 1.5 years. Similar programs are available in other regions, too: In Asia Pacific, for example, we run an internal training and further development course for leaders to become coaches.

Leadership responsibility in the BASF Group

	December 31, 2016	Thereof women %
Professionals[1]	36,909	29.4
(Senior) executives[2]	9,558	19.8

[1] Specialists without disciplinary leadership responsibilities
[2] Employees with disciplinary leadership responsibilities

Learning and development

- Life-long learning concept focuses on on-the-job experience
- Specific further training for employees in production and technical areas
- Development meetings form important element of employee development

Learning and development are essential success factors for a strong company culture. The skills and competencies of our employees are critical for profitable growth and lasting success. With the Best Team Strategy and regional learning strategies, we want to establish a new learning culture and enable life-long, self-guided learning. The learning and development options cover a range of learning goals: starting a career, expanding knowledge, personal development, and leadership training. For example, our Learning Campus in Singapore offers development programs for leaders and leadership candidates with a focus on strategy, leadership and innovation. It serves as a platform for new styles of learning and brings together employees from diverse areas – for our goal is to create a common-ground, inspiring learning experience that enables employees to connect with the company and with each other. In this regard, we have also been implementing the "MentForMe" mentoring program step by step since 2016. Our learning activities follow the "70-20-10" philosophy: We apply the elements "learning from experience" (70%), "learning from others" (20%) and "learning through courses and media" (10%).

We support employees in production and engineering worldwide with job-specific qualifications and further training. We have further strengthened our in-plant qualification measures with in-plant trainers who promote the continuous professional development of employees in production and engineering through individual learning assignments. Moreover, we expanded our programs on safety culture and knowledge management as well as team and organizational development.

We spent around €69 million on further training in 2016 (2015: €96 million). Each employee spent an average of 2.0 days on further training in 2016. As part of cost management, we decided in 2016 to focus training on business and safety-related courses.

In regular development meetings, held as part of our annual employee dialogs, employees and leaders outline prospects for individual professional development together and determine measures for further training and development. This model was implemented for around 78,150 employees by the end of 2016. We want to conduct development meetings for all employees by the end of 2017.

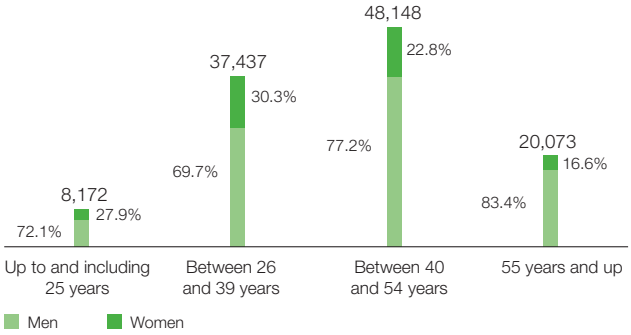
Managing demographic changes

- Leadership duties include "leadership in times of demographic change"

The demographic situation within the BASF Group varies widely by region. The aging population in areas like Germany and North America presents us with challenges. We are also occupied with future issues like new technologies, growing digitalization ("Industry 4.0"), and the ever-increasing delay of retirement. We create a framework to help maintain the employability of our personnel at all stages of life and ensure the availability of qualified employees. Employees and leaders are supported with health and exercise programs, flexible working arrangements, age-appropriate workplaces and demographic analyses. The topic "leadership in times of demographic change" also forms a part of our leadership programs. In addition, we engage in knowledge management and systematic succession planning.

For more on health protection, see page 99

BASF Group employee age structure
(Total: 113,830, thereof 24.6% women, as of December 31, 2016)



Inclusion of diversity

- Promoting diversity as part of company culture
- Global goals for increasing percentage of women in leadership positions

We want to utilize diversity for the development of our business. Promoting diversity is one of the mainstays of our corporate culture. The strong global character of our markets translates into different customer requirements. We want to reflect this diversity in our workforce, as well, in order to even better understand the needs of our customers. The aim is to increase our teams' performance and power of innovation, and boost creativity, motivation and identification with the company. We are further promoting the appreciation and inclusion of diversity. Leaders play an important role here. We support them in strengthening diversity and making the best possible use of it in day-to-day business. For example, specific goals and measures are being developed for such topics as recognizing and developing different kinds of talent.

Since 2015, BASF has set itself global quantitative goals for increasing the percentage of women in leadership positions. In the BASF Group, the global proportion of female leaders with disciplinary responsibility was 19.8% at the end of 2016 (2015: 19.5%). We aim to increase this figure to 22–24% worldwide by 2021, so that the proportion of women in leadership reflects that of women in the global company workforce.

2021 Goal

Proportion of women in leadership positions with disciplinary responsibility 22–24%

Considering the relatively low rate of turnover in the BASF Group's leadership team, this is an ambitious goal. Furthermore, BASF wants to continue increasing the global percentage of senior executives[1] that come from countries other than Germany. This figure was at 36.4% by the end of 2016 (2015: 35.6%).

Moreover, we intend to maintain the proportion of senior executives with international experience at over 80%. We exceeded this figure by the end of 2016, reaching 84.6%. With these goals, we continue to drive our globally integrated approach to promoting diversity and leadership development.

For more information, see basf.com/diversity

For more on diversity in the Board of Executive Directors and the Supervisory Board, see page 130

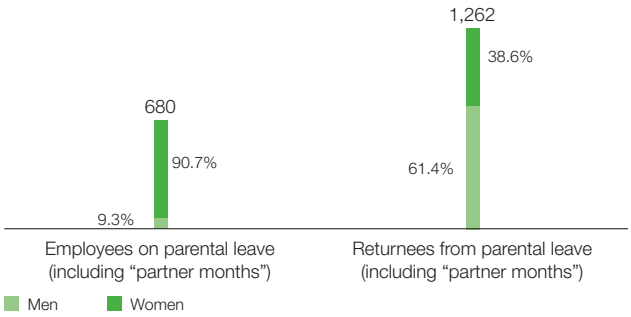
[1] The term "senior executives" refers to leadership levels 1 to 4, whereby level 1 denotes the Board of Executive Directors. In addition, individual employees can attain senior executive status by virtue of special expertise.

Balancing personal and professional life

- **Worldwide offers and opportunities**

Our identity as an employer includes our belief in supporting our employees worldwide in balancing their personal and professional lives. Through various offers and opportunities, we create working conditions that give fair consideration to our employees' individual needs. We want to strengthen their identification with the company and bolster our position as an attractive employer in the competition for qualified personnel. Our offer includes flexible working hours, part-time employment and mobile working. In 2016, a total of 12.0% of BASF SE employees held part-time positions, of which 69.9% were women. Numerous employees also made use of parental leave.

Balancing personal and professional life
(Total BASF SE employees: 35,001, thereof 21.4% women, as of December 31, 2016)



Our regional initiatives specifically address the needs of our employees at a local level. Our Work-Life Management employee center in Ludwigshafen ("LuMit"), provides opportunities for fitness and health, employee assistance, and balancing career and personal life – like the company childcare center, "LuKids," which offers daycare for 250 children. Around 600 employees take advantage of LuMit every day. We also provide social counseling at other sites in Germany, such as those in Münster and Schwarzheide, as well as in Asia, South Africa and North America, to help employees overcome difficult life situations and maintain their employability.

Global Employee Survey

The Global Employee Survey and its follow-up process have been established for the entire BASF Group ever since the first survey in 2008. It was last conducted in 2015. Employees and leaders discussed the results together in all regions, and are now implementing improvement measures. This pertains to topics such as supporting employees in their career development, intensifying feedback, or supporting leaders and their teams in driving change and innovation. We conduct the Global Employee Survey at regular intervals; the next one is scheduled for 2018.

Compensation and benefits

- **Compensation based on employee's position and individual performance as well as company's success**
- **Pay generally comprises fixed and variable components plus benefits**

In addition to market-oriented compensation, BASF's total offer also comprises benefits, individual opportunities for development and a good working environment. Our employees' pay is based on global compensation principles. These take into account an employee's position and individual performance as well as the company's success. Representative analyses of the Ludwigshafen site have shown that there are no systematic differences in pay between men and women, provided the positions and qualifications are comparable. As a rule, compensation is comprised of fixed and variable components as well as benefits that often exceed legal requirements. In many countries, these include company pension benefits, supplementary health insurance, and share programs.

In 2016, the BASF Group spent €10,165 million on wages and salaries, social security contributions and expenses for pensions and assistance (2015: €9,982 million). This represents growth of 1.8% in personnel expenses, primarily as a result of expenses for the long-term incentive program as well as wage and salary increases. Partly countering this rise was the lower average number of employees, in addition to currency effects.

For more information, see the Notes to the Consolidated Financial Statements on page 188

BASF Group personnel expenses (million €)

	2016	2015	Change in %
Wages and salaries	8,170	7,943	2.9
Social security contributions and expenses for pensions and assistance	1,995	2,039	(2.2)
Thereof for pension benefits	627	658	(4.7)
Total personnel expenses	**10,165**	**9,982**	**1.8**

Employees participate in the company's success

- Return on assets determines variable compensation
- "*plus*" share program fosters employees' long-term participation in company

With variable compensation components, we involve employees in the company's success and reward individual performance. The same principles basically apply for all employees. The amount of the variable component is determined by the company's economic success (measured by the return on assets[1] of the BASF Group) as well as the employee's individual performance. Individual performance is assessed as part of a globally consistent performance management process.

In numerous Group companies, employees are offered the chance to purchase shares. The BASF share program "*plus*" sponsors employees' long-term participation in the company through incentive shares: By investing a portion of their compensation in BASF shares, they take part in the long-term development of BASF.

BASF offers its executives the opportunity to participate in a share-price-based compensation program. This long-term incentive (LTI) program ties a portion of their compensation to the long-term performance of BASF shares. In 2016, 92% of the approximately 1,200 eligible executives worldwide participated in the LTI program, investing up to 30% of their variable compensation in BASF shares.

For more information, see the Notes to the Consolidated Financial Statements from page 216 onward

Dialog with employee representatives

Open dialog with employee representatives is an important component of our corporate culture. If restructuring leads to staff downsizing, for example, we work with employee representatives to develop socially responsible implementation measures. This is done in accordance with the respective legal regulations and the agreements reached. The BASF Europa Betriebsrat (European Works Council) addresses cross-border matters in Europe.

Together with employee representatives, we continued to elaborate on the future topics described by the company and works council in the BASF SE 2020 site agreement in 2016. For example, new principles for promoting apprentices were described in BASF SE's "Apprenticeship of the Future." We are engaged in close exchange with employee representatives on the topic of changes through increasing digitalization in order to identify and jointly address challenges.

For more information, see basf.com/employeerepresentation

Global labor and social standards

- Alignment with U.N. Guiding Principles on Business and Human Rights
- Adjusted management process for monitoring adherence to labor and social standards

Our voluntary commitment to respecting international labor and social standards is embedded in our global Code of Conduct. This encompasses internationally recognized labor norms as stipulated in the United Nations' Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy of the International Labour Organization (ILO). BASF strives to uphold these standards worldwide. We mainly approach our adherence to international labor and social standards using three elements: the Compliance Program (including external compliance hotlines), close dialog with our stakeholders (such as with employee representatives or international organizations), and the global management process for the respect of international labor norms.

In 2016, we continued the restructuring of our management process begun in 2015. In the previous year, a global team of experts had already drafted a Group-wide BASF guideline on complying with international labor and social standards[2]. This provided the basis for developing a process that determines potential gaps in complying with these standards. The management process will now be implemented successively around the world. A monitoring system launched in 2016 keeps track of the situation in countries in which BASF is active, and regularly reviews the implementation of set goals and measures. We performed a risk-based analysis of 43 countries by the end of 2016. The remaining countries are scheduled to be reviewed in 2017.

For more on labor and social standards, see basf.com/labor_social_standards

For more on global standards, see page 24

For more on our sustainability-related risk management, see page 29

For more on Compliance, see page 134 onward

[1] To calculate variable compensation, total return on assets is adjusted for special items.

[2] The guideline provides concrete interpretations for the topics outlined in the global Code of Conduct under "Human Rights and International Labor Standards."

Social commitment

New strategy
BASF hones societal activities to have even greater impact

€47.0 million
Spent on donations, sponsorship and BASF Group's own projects

Two pillars
Nonprofit activities and business-oriented projects

We take on social responsibility: We are involved in diverse projects worldwide, especially in the communities where our sites are located. Our main focus is on life-long learning and access to education. In this way, we promote innovative capacity and future viability.

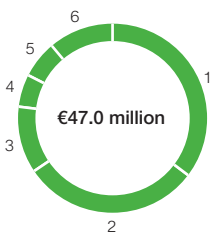
Strategy

In 2016, we revamped our activities in terms of social commitment and designed them to have an even greater impact. The Social Engagement Strategy serves as our launchpad – we use this to strengthen our global approach to the topic. The strategy revolves around support projects having a lasting impact on society and offering learning opportunities for participating cooperation partners and BASF. The common thread throughout all worldwide social commitment activities is provided by the Sustainable Development Goals of the United Nations. Regional emphasis topics help us tailor our engagement toward local needs.

The BASF Group spent a total of €47.0 million supporting projects in 2016; we donated 49.6% of this amount (2015: €56.2 million, 46% of which were donations). The decline in comparison with 2015 is attributable to the previous year's individual special projects in honor of BASF's anniversary. We support initiatives that reach out to as many people as possible and have long-term impact. We foster education, science, social projects, arts and culture, and sports in the communities around our sites. On a regional level, we work together with universities, schools and nonprofit organizations. We support BASF Stiftung, a charitable foundation, in its international projects with various U.N. and nongovernmental organizations.

BASF Group donations, sponsorship and own projects in 2016
(million €)

1	Education	16.7	35.5%
2	Social projects	14.2	30.2%
3	Culture	5.3	11.3%
4	Science	2.7	5.7%
5	Sports	2.9	6.2%
6	Other	5.2	11.1%



Two pillars of social commitment

In its Social Engagement Strategy, BASF combines two pillars under one roof: donations and the company's own nonprofit activities (Corporate Citizenship) along with business-oriented projects (Starting Ventures).

Corporate Citizenship activities aim to help create a livable surrounding region for our sites' neighbors, employees and families. This means supporting numerous projects like the "Connected to Care" program begun in 2015. Employees around the world form teams to carry out volunteer projects together with nonprofit organizations.

With our Starting Venture program, we develop entrepreneurial solutions to support low-income demographic groups in emerging markets in their efforts to improve their quality of life. We achieve this through projects in various customer industries and regions that aim to increase employment opportunities and improve access to products. For example, BASF supports young people from low-infrastructure urban areas in Chile with occupational training in the field of automotive coatings. 75 young people have achieved certification so far and are now in a position to take up employment at our customers. The Starting Venture program thus also contributes to our long-term business success.

BASF Stiftung

The BASF Stiftung, a nonprofit organization, supported a school nutrition project of the United Nations World Food Programme in Colombia in 2016 as part of its humanitarian development work. There, healthy school meals are an important motivation for students – especially from low-income families – to attend school. The project also collaborates with small-holder farmers who supply the participating schools with groceries. The small-holder farmers are given specific training in advance.

In the 2016 year-end donation campaign, the company and its employees gave around €337,000 to BASF Stiftung, which is using the sum to support a World Food Programme initiative to improve living conditions for people in Ethiopia.

For more information, see basf.com/international_donations

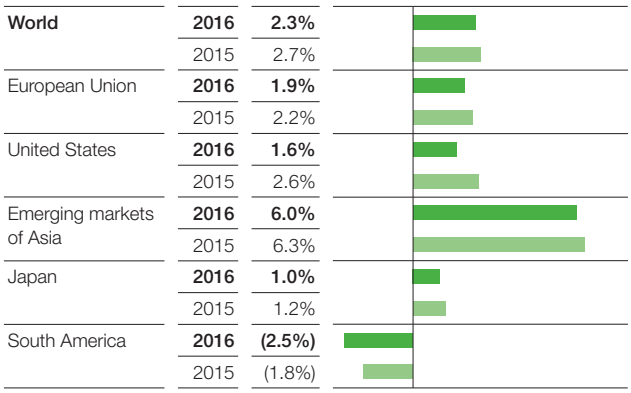
The BASF Group business year
Economic environment

2.3%	1.9%	3.4%
Growth in global gross domestic product	Growth in global industrial production	Growth in global chemical industry

The global economy grew only moderately in 2016 but was subject to regional fluctuations. While growth in the emerging markets remained almost unchanged in comparison with 2015, it decelerated in the industrialized countries due to the U.S. economy's initially weak dynamic. In the European Union, growth in gross domestic product was just marginally below the previous year's level despite the heightened uncertainty before and after the British referendum on leaving the E.U. Gross domestic product in China grew only slightly more slowly thanks to governmental economic measures. Overall, global gross domestic product grew by 2.3%, as we had anticipated, remaining behind the level of 2015 (+2.7%). The average price for a barrel of Brent blend crude oil fell to $44 per barrel (2015: $52 per barrel).

For the outlook for the economic environment in 2017, see page 119 onward

Gross domestic product
(Real change compared with previous year[1])



[1] Figures that refer to previous years may deviate from last year's report due to statistical revisions.

Trends in the global economy in 2016

The global economic environment was marked in 2016 by expansive monetary policy, low raw materials prices that nevertheless stabilized over the course of the year, and a modest growth dynamic. The especially low price of oil during the first half of the year dampened growth in the oil-producing countries and reduced the propensity to invest there, including the United States. Small levels of inflation, historically low interest rates and a weak euro supported growth in Europe.

The currencies of many emerging economies that export raw materials were weaker than in the previous year, but appreciated considerably over the course of 2016. This was due in part to a gradual rise in oil and precious metal prices in addition to the U.S. Federal Reserve's cautious interest rate policy. Economic uncertainty increased considerably as the year progressed, largely as an effect of the British vote to exit the E.U., but also because of continuing geopolitical conflicts and unpredictability before and after the U.S. presidential elections.

Economic trends by region

- **Economic growth somewhat slower in the E.U.**
- **Weaker growth in the U.S.**
- **Slowdown in China lighter than expected; stable growth in emerging markets of Asia**
- **Further decline of GDP in South America**

In 2016, growth in the **European Union**'s gross domestic product slowed slightly, from 2.2% in 2015 to 1.9%. Development in the region continued to be marked by widely divergent trends in 2016: In northwestern Europe, growth rates remained at a solid level overall. In the United Kingdom, the increase in gross domestic product slackened only marginally after the referendum on a British exit from the E.U. Germany's economic growth was at a comparatively robust 1.8% while that of France was more moderate, at 1.1%. In southwestern Europe, Spain continued its dynamic pace (+3.2%). By contrast, Italy (+1.0%) and Portugal (+1.4%) were not able to boost their economies to such a considerable extent. The central and eastern E.U. countries also boasted above-average growth (+2.8%), helped along by low inflation rates, ongoing low unemployment levels and the stable development of exports. In Russia, the economy shrank only slightly (–0.2%) after the previous year's sharp decline (–2.8%), partly thanks to the stabilization in oil prices over the course of the year.

Growth in the **United States** during the first two quarters was considerably below the average for the year. Reasons included weak investment activity in the oil industry and cyclical inventory effects. Private consumption bolstered the economy. In the second half of the year, growth picked up thanks to increased investment and positive development in agricultural exports. Overall, the U.S. economy grew by only 1.6% in 2016 (2015: +2.6%), remaining behind its medium-term pace of around 2%.

Economic output in the **emerging markets of Asia** saw a somewhat slower increase as compared with the previous year (2016: +6.0%, 2015: +6.3%). This was largely attributable to the only slightly slower growth in China (2016: +6.7%; 2015: +6.9%). The construction and automotive industries benefited from government investments as well as impetus provided by monetary and fiscal policy. In this environment, the neighboring Asian countries grew at a relatively stable rate; India once again saw rapid expansion, at 6.8% (2015: +7.9%).

At 1.0%, growth remained modest in **Japan**. The appreciation of the yen against the U.S. dollar (around 10% compared with the previous year) and lower demand from China reduced both the year's average exports and private companies' propensity to invest. Lower imports, weakly growing private consumption, expanding housing investment and public expenditures compensated for these negative effects, so that the Japanese economy's overall growth was about as strong as in the previous year.

Gross domestic product shrank once again in **South America**, by 2.5% (2015: –1.8%). Economic performance in Brazil remained 3.4% behind the previous year (2015: –3.8%). Gross domestic product declined in Argentina, as well, shrinking by 2.3% against the backdrop of high inflation and fiscal consolidation measures (2015: +2.6%). Venezuela and Ecuador suffered from the low price of crude oil; gross domestic product declined in both countries. The other countries in the region grew moderately on average.

Trends in key customer industries

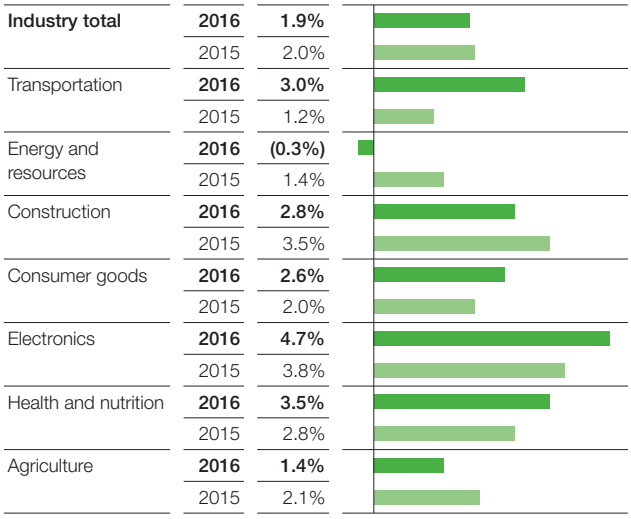
- Global industrial production increases at rate similar to 2015
- Development in key customer industries improves on average

Global industrial production grew by around 1.9% in 2016, about the same as in the previous year (+2.0%). Growth in the advanced economies slowed slightly (2016: +0.8%, 2015: +1.0%) but remained constant in the emerging markets (2016: +3.0%, 2015: +3.0%).

Industrial growth in the European Union increased marginally to 1.4% from 1.3%. In the United States, industrial production nearly stagnated (2016: +0.3%; 2015: +1.3%). At 5.5%, industrial growth in the emerging markets of Asia roughly matched the prior year's level. Industry in China cooled down only slightly, thanks to governmental stimulus. The recession continued in South America: Industrial production shrank in Brazil by 6.0% (2015: –8.2%).

The chemical industry's key customer sectors developed better on average than industrial production. Global **automotive production** grew by 4.5%, outpacing the previous year. In western Europe and North America, the sector continued its economic upswing. Tax incentives in China boosted demand; however, production fell drastically in South America and Russia. The global rate of growth in the **construction industry** was 2.8%, down from the previous year's +3.5%. In western Europe, construction saw slightly higher growth than in 2015; in the eastern countries of the European Union, the expiration of E.U. funding programs led to decreased activity. Growth in the United States slowed considerably. In China, construction volumes rose at around the same rate as 2015 as a result of governmental support measures. Globally, **agriculture** grew by 1.4%, behind the level in previous years; production weakened in South America especially.

Growth in key customer industries
(Real change compared with previous year[1])



[1] Figures that refer to previous years may deviate from last year's report due to statistical revisions.

BASF sales by industry[2]
(Direct customers)

>20%	Chemicals and plastics
10–20%	Consumer goods | Transportation
5–10%	Agriculture | Construction | Energy and resources
<5%	Health and nutrition | Electronics

[2] Changes in percentages from the previous year are mainly a result of the asset swap with Gazprom.

Trends in the chemical industry

- Global growth corresponds to our expectations

The chemical industry (excluding pharmaceuticals) grew at the rate we had anticipated, by 3.4%. The fastest growth was seen in chemical production in the emerging markets of Asia (2016: +6.3%, 2015: +6.6%). Chemical production increased only marginally in the European Union (2016: +0.4%, 2015: +0.9%). There were substantial regional differences. Production fell considerably in Belgium and the United Kingdom, while the Netherlands saw a sharp increase. Chemical production declined slightly in Germany. Growth in the United States was weaker than in the previous year (2016: +0.6%, 2015: +1.9%[1]). Thanks to significant production expansion in Mexico, overall growth for North America shrank at a slower rate (2016: +0.9%, 2015: +1.8%). South America saw a marginal decline in chemical production (2016: –0.8%, 2015: –3.8%). Production volumes grew slightly in Japan, at 1.5% (2015: +1.6%).

Chemical production (excluding pharmaceuticals)
(Real change compared with previous year[2])

World	**2016**	**3.4%**
	2015	3.6%
European Union	**2016**	**0.4%**
	2015	0.9%
United States	**2016**	**0.6%**
	2015	1.9%
Emerging markets of Asia	**2016**	**6.3%**
	2015	6.6%
Japan	**2016**	**1.5%**
	2015	1.6%
South America	**2016**	**(0.8%)**
	2015	(3.8%)

[2] Figures that refer to previous years may deviate from last year's report due to statistical revisions.

Important raw material price developments

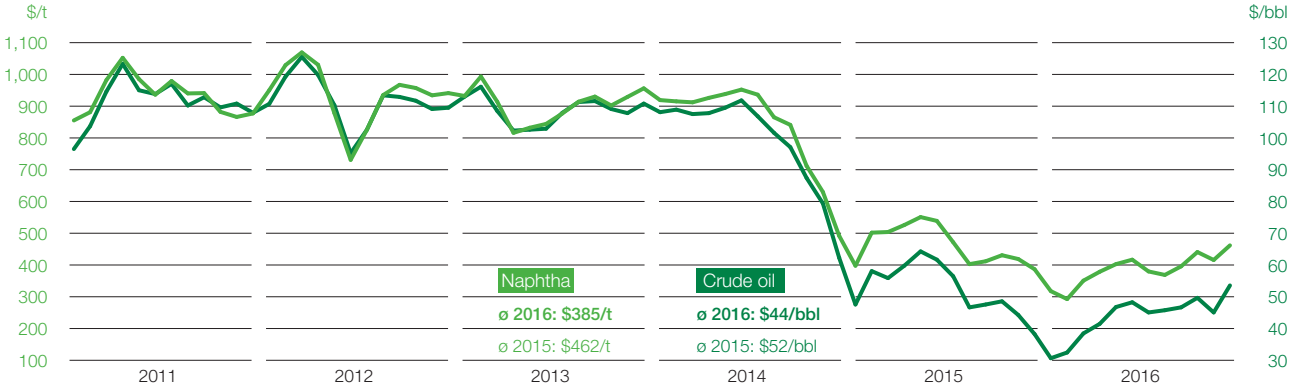
- Prices continue to fall for crude oil and naphtha
- Gas prices below previous year's level, but with wide regional variance

Averaging around $44 per barrel in 2016, the price of Brent blend **crude oil** dropped by about 15% compared with the previous year ($52 per barrel). The oil price fluctuated over the course of the year between $31 per barrel in January and $54 per barrel in December.

The average monthly price for the chemical raw material **naphtha** ranged over the course of 2016 between $293 per metric ton in February and $462 per metric ton in December. At $385 per metric ton, the annualized average price of naphtha in 2016 was below the level of 2015 ($462 per metric ton).

The average **price of gas** in the United States was $2.49 per mmBtu, under the previous year's level ($2.61 per mmBtu). In Europe, the average price of gas on spot markets remained substantially higher, at $4.58 per mmBtu (2015: $6.49 per mmBtu). Gas prices in China averaged around $6.54 per mmBtu nationally (2015: $9.81 per mmBtu), while the average price in the coastal regions was $7.72 per mmBtu (2015: $11.20 per mmBtu).

Price trends for crude oil (Brent blend) **and naphtha** ($/barrel, $/metric ton)



[1] This figure deviates significantly from last year's report due to statistical revisions.

Results of operations

In 2016, our market environment continued to be volatile and challenging; the global economy and the chemical industry saw slower growth. Overall, BASF Group business developments unfolded in line with our expectations. We posted a considerable sales decline compared with the previous year and a slightly lower income from operations (EBIT) before special items. These developments were largely the result of the divestitures completed in 2015 as well as price declines due to further drops in raw material prices. Increased sales volumes and reduced fixed costs helped counter this effect, even allowing us to achieve considerably higher EBIT before special items in the chemicals business[1].

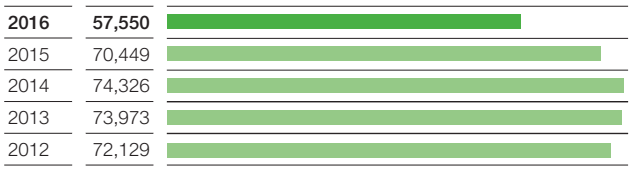
Business reviews by segment can be found from page 59 onward

Sales

- Sales down 18% to €57,550 million

Sales for 2016 decreased by €12,899 million to €57,550 million. This was mainly attributable to the divestiture of the gas trading and storage business as part of the asset swap with Gazprom at the end of September 2015. This business had contributed €10.1 billion to sales in 2015. In addition, lower oil, gas and other raw material prices led to a drop in sales prices, reducing sales in the chemicals business – especially the Chemicals segment – as well as in the Oil & Gas segment. We were able to continually raise sales volumes over the course of the year, and achieved slight volumes growth overall. Volumes grew slightly in the Chemicals, Performance Products and Oil & Gas segments. The Functional Materials & Solutions segment posted a significant increase, and Agricultural Solutions a slight decrease. Currency effects slightly dampened sales.

Sales (million €)



Factors influencing sales of the BASF Group

	Change in million €	Change in %
Volumes	1,689	2
Prices	(3,166)	(4)
Currencies	(767)	(1)
Acquisitions	63	0
Divestitures	(10,718)	(15)
Changes in scope of consolidation	–	–
Total change in sales	**(12,899)**	**(18)**

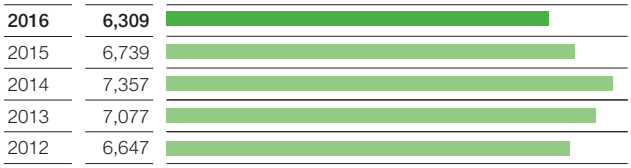
Income from operations

- EBIT before special items 6% below 2015 level, at €6,309 million
- At €6,275 million, EBIT matches prior-year level
- EBIT after cost of capital rises considerably

At €6,309 million, **income from operations (EBIT) before special items** was €430 million below the level of the previous year. This was largely a consequence of the considerable decline in the Oil & Gas segment resulting mainly from falling prices and the divestiture of the natural gas trading and storage business. The activities transferred to Gazprom had contributed around €260 million to EBIT before special items in 2015. In the Agricultural Solutions segment, EBIT before special items matched the previous year's level. We achieved a considerable increase in the chemicals business thanks to sharply improved contributions from the Performance Products and Functional Materials & Solutions segments.

For an explanation of the figure EBIT before special items, see page 28

EBIT before special items (million €)



Special items in EBIT amounted to minus €34 million in 2016, compared with minus €491 million in the previous year.

This development was mainly due to the special items recognized in other charges and income, which amounted to minus €44 million in 2016. In the previous year, other charges and income totaled minus €729 million, mostly comprising impairments on assets in the Oil & Gas segment.

Special charges from various restructuring measures came out to minus €394 million compared with minus €223 million in the previous year.

Divestitures in 2016 resulted in an earnings contribution of €431 million, after €476 million in the previous year, especially from the sale of the industrial coatings business and the polyolefin catalysts business in the Functional Materials & Solutions segment.

Integration costs for acquired businesses amounted to €27 million, compared with €15 million in 2015.

For the definition of special items, see page 28

[1] Our chemicals business comprises the Chemicals, Performance Products und Functional Materials & Solutions segments.

Sales and earnings (million €)

		2016	2015	Change in %
Sales		57,550	70,449	(18.3)
Income from operations before depreciation and amortization (EBITDA) and special items		10,327	10,508	(1.7)
EBITDA		10,526	10,649	(1.2)
EBITDA margin	%	18.3	15.1	–
Amortization and depreciation[1]		4,251	4,401	(3.4)
Income from operations (EBIT)		6,275	6,248	0.4
Special items		(34)	(491)	93.1
EBIT before special items		6,309	6,739	(6.4)
Financial result		(880)	(700)	(25.7)
Income before taxes and minority interests		5,395	5,548	(2.8)
Income before minority interests		4,255	4,301	(1.1)
Net income		4,056	3,987	1.7
Earnings per share	€	4.42	4.34	1.8
Adjusted earnings per share	€	4.83	5.00	(3.4)

Sales and earnings by quarter in 2016[2] (million €)

		1st quarter	2nd quarter	3rd quarter	4th quarter	Full year
Sales		14,208	14,483	14,013	14,846	57,550
Income from operations before depreciation and amortization (EBITDA) and special items		2,843	2,674	2,490	2,320	10,327
EBITDA		2,812	2,790	2,437	2,487	10,526
Amortization and depreciation[1]		946	1,072	973	1,260	4,251
Income from operations (EBIT)		1,866	1,718	1,464	1,227	6,275
Special items		(40)	11	(52)	47	(34)
EBIT before special items		1,906	1,707	1,516	1,180	6,309
Financial result		(188)	(177)	(283)	(232)	(880)
Income before taxes and minority interests		1,678	1,541	1,181	995	5,395
Net income		1,387	1,092	888	689	4,056
Earnings per share	€	1.51	1.19	0.97	0.75	4.42
Adjusted earnings per share	€	1.64	1.30	1.10	0.79	4.83

Sales and earnings by quarter in 2015[2] (million €)

		1st quarter	2nd quarter	3rd quarter	4th quarter	Full year
Sales		20,067	19,078	17,424	13,880	70,449
Income from operations before depreciation and amortization (EBITDA) and special items		2,949	2,952	2,502	2,105	10,508
EBITDA		2,890	2,994	2,872	1,893	10,649
Amortization and depreciation[1]		895	955	983	1,568	4,401
Income from operations (EBIT)		1,995	2,039	1,889	325	6,248
Special items		(75)	(4)	286	(698)	(491)
EBIT before special items		2,070	2,043	1,603	1,023	6,739
Financial result		(164)	(152)	(175)	(209)	(700)
Income before taxes and minority interests		1,831	1,887	1,714	116	5,548
Net income		1,174	1,265	1,209	339	3,987
Earnings per share	€	1.28	1.38	1.31	0.37	4.34
Adjusted earnings per share	€	1.43	1.49	1.07	1.01	5.00

[1] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)

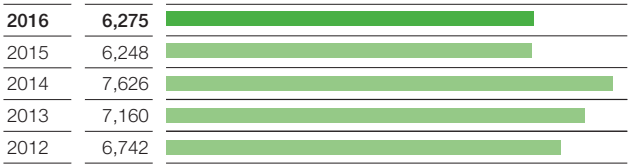
[2] Quarterly results not audited

Special items (million €)

	2016	2015
Restructuring measures	(394)	(223)
Integration costs	(27)	(15)
Divestitures	431	476
Other charges and income	(44)	(729)
Total special items in EBIT	**(34)**	**(491)**
Special items reported in financial result	–	23
Total special items in income before taxes and minority interests	**(34)**	**(468)**

At €6,275 million, **EBIT** for the BASF Group in 2016 matched the level of the previous year (2015: €6,248 million). Included in this figure is income from companies accounted for using the equity method, which rose from €251 million to €307 million.

EBIT (million €)



We once again earned a premium on our cost of capital in 2016. **EBIT after cost of capital** amounted to €1,136 million compared with €194 million in the previous year. The cost of capital fell by €809 million year-on-year. In addition to the reduction of the cost of capital percentage by one percentage point, this was primarily the result of the lower level of tied-up capital in inventories and operating receivables.

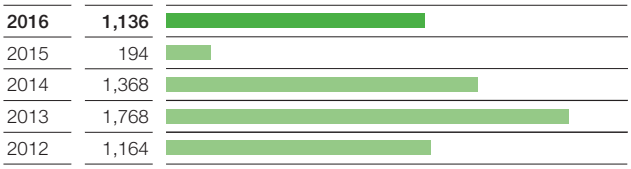
For an explanation of the figure EBIT after cost of capital, see page 28
The calculation of EBIT as part of our income statement is shown in the Consolidated Financial Statements on page 155

EBIT after cost of capital (million €)

	2016	2015
EBIT of BASF Group	6,275	6,248
– EBIT of Other	(1,091)	(985)
– Cost of capital[1]	6,230	7,039
EBIT after cost of capital	**1,136**	**194**

[1] In 2015, the cost of capital percentage was 11%, compared with 10% in 2016.

EBIT after cost of capital (million €)



Financial result and net income

- Financial result considerably below, and net income slightly above, prior year
- Earnings per share rise from €4.34 to €4.42

The **financial result** fell to minus €880 million in 2016, compared with minus €700 million in the previous year.

Income from shareholdings decreased from €9 million in 2015 to minus €17 million, predominantly due to lower income from the disposal of shareholdings.

The interest result declined from minus €425 million in 2015 to minus €482 million. This was predominantly from lower interest income, especially from investments in liquid funds, and higher interest expenses in connection with new bank loans outside of the eurozone.

Other financial result fell from minus €284 million in the previous year to minus €381 million in 2016, due mostly to the decline in interest payments capitalized as construction period interest and higher currency hedging costs.

Income before taxes and minority interests dipped from €5,548 million in 2015 to €5,395 million in 2016.

Income taxes were reduced from €1,247 million in 2015 to €1,140 million in 2016. At 21.1%, the tax rate was below the prior year's level (22.5%) primarily as a result of currency-related deferred tax income in Norway, whereas the previous year had included currency-related deferred tax expenses.

Income before minority interests decreased from €4,301 million to €4,255 million. Minority interests amounted to €199 million, compared with €314 million in 2015.

At €4,056 million, **net income** exceeded the previous year's level of €3,987 million. Earnings per share increased from €4.34 to €4.42.

For information on the items in the statement of income, see the Notes to the Consolidated Financial Statements from page 181 onward
For information on the tax rate, see the Notes to the Consolidated Financial Statements from page 185 onward

Additional figures for results of operations

- EBITDA before special items and EBITDA slightly down
- Adjusted earnings per share dip from €5.00 to €4.83

Aside from EBIT, EBIT before special items, and EBIT after cost of capital – figures drawn upon to steer the BASF Group – we also provide additional performance indicators in this report that are not defined by IFRS. They should not be viewed in isolation, but treated as supplementary information.

EBITDA before special items (million €)

	2016	2015
EBIT	6,275	6,248
– Special items	(34)	(491)
EBIT before special items	**6,309**	**6,739**
+ Amortization, depreciation and valuation allowances on intangible assets and property, plant and equipment before special items	4,018	3,769
EBITDA before special items	**10,327**	**10,508**

EBITDA (million €)

	2016	2015
EBIT	6,275	6,248
+ Amortization, depreciation and valuation allowances on intangible assets and property, plant and equipment	4,251	4,401
EBITDA	**10,526**	**10,649**

Income from operations before depreciation, amortization and special items (EBITDA before special items) and income from operations before depreciation and amortization (EBITDA) are figures that describe operational performance independent of age-related amortization and depreciation of assets and extraordinary valuation allowances (impairments or write-ups). Both figures are therefore particularly useful in cross-company comparisons. EBITDA before special items is also highly useful in making comparisons over time.

At €10,327 million, **EBITDA before special items** in 2016 was down by €181 million compared with the previous year; **EBITDA** amounted to €10,526 million, or €123 million below the level of 2015.

Return on assets (million €)

		2016	2015
Income before taxes and minority interests		5,395	5,548
+ Interest expenses		661	638
Income before taxes and minority interests and interest expenses		**6,056**	**6,186**
Total assets as of January 1		70,836	71,359
Total assets as of December 31		76,496	70,836
Average assets used		**73,666**	**71,098**
Return on assets	%	**8.2**	**8.7**

We calculate return on assets as income before taxes and minority interests, plus interest expenses, as a percentage of average assets used. This figure reflects the return independently of capital structure.

Return on assets was 8.2%, compared with 8.7% in the previous year. The decline was partly attributable to the acquisition of Chemetall in December 2016.

Adjusted earnings per share (million €)

		2016	2015
Income before taxes and minority interests		5,395	5,548
– Special items		(34)	(468)
+ Amortization and valuation allowances on intangible assets		560	801
– Amortization and valuation allowances on intangible assets contained in special items		52	200
Adjusted income before taxes and minority interests		**5,937**	**6,617**
– Adjusted income taxes		1,300	1,716
Adjusted income before minority interests		**4,637**	**4,901**
– Adjusted minority interests		197	312
Adjusted net income		**4,440**	**4,589**
Weighted average number of outstanding shares	in thousands	918,479	918,479
Adjusted earnings per share	€	**4.83**	**5.00**

Compared with earnings per share, this figure has been adjusted for special items as well as amortization of, and valuation allowances (impairments and write-ups) on, intangible assets. Amortization of intangible assets primarily results from the purchase price allocation following acquisitions. The amortization of intangible assets is therefore of a temporary nature. The effects of these adjustments on income taxes and on minority interests are also eliminated. This makes adjusted earnings per share a suitable measure for making comparisons over time and predicting future profitability.

In 2016, **adjusted earnings per share** amounted to €4.83 compared with €5.00 in the previous year.

For more information on the earnings per share according to IFRS, see the Notes to the Consolidated Financial Statements on page 181

Forecast/actual comparison[1]

	Sales		Income from operations (EBIT) before special items	
	2016 forecast	2016 actual	2016 forecast	2016 actual
Chemicals	slight decline	considerable decline	considerable decline	slight decline
Performance Products	at prior-year level	slight decline	slight increase	considerable increase
Functional Materials & Solutions	at prior-year level	slight increase	slight increase	considerable increase
Agricultural Solutions	slight increase	slight decline	slight increase	at prior-year level
Oil & Gas	considerable decline	considerable decline	considerable decline	considerable decline
Other	considerable decline	considerable decline	considerable increase	considerable decline
BASF Group	**considerable decline**	**considerable decline**	**slight decline**	**slight decline**

[1] For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%).

Actual development compared with outlook for 2016

In 2016, BASF Group sales and EBIT before special items developed in line with our forecast: Sales declined considerably and EBIT before special items was slightly below the level of 2015. We just barely missed the volumes growth expected in all segments excluding the effects of acquisitions and divestitures: In the Agricultural Solutions segment, volumes were slightly down, while they rose as anticipated in the chemicals business[2] and the Oil & Gas segment. EBIT did not decline slightly as forecast, but rather matched the prior-year level. This was largely the result of special income from the divestitures completed in 2016 in the Functional Materials & Solutions segment. The earnings contribution from the chemicals business increased considerably in 2016, counter to our assumption that it would slightly decline. Mainly because of this, BASF Group EBIT after cost of capital rose considerably rather than decreasing considerably as we had expected.

Sales in the **Chemicals** segment fell considerably in 2016, whereas we had expected the decline to be slight. Increased volumes were able to partly offset for the sharp drop in prices, but less so than we had foreseen. For EBIT before special items, we observed only a slight, rather than considerable, year-on-year decline, essentially through the higher margins for isocyanates in the Monomers division.

Contrary to our expectations, sales in the **Performance Products** segment were slightly below the previous year's level instead of matching it. Volumes growth was less able than we had anticipated to offset price declines and negative portfolio and currency effects. EBIT before special items rose not only slightly, but rather considerably, in the Performance Products segment. In addition to significantly reduced fixed costs thanks to restructuring measures and strict cost management, improved margins also contributed to this development.

In the **Functional Materials & Solutions** segment, we were able to raise sales volumes in all divisions in 2016, more than compensating for price and currency effects. As a result, sales were not at the same level of the previous year, as forecast, but rose slightly instead. EBIT before special items likewise exceeded our expectations, with a considerable rather than slight increase.

For the **Agricultural Solutions** segment, we had anticipated slight growth in both sales and EBIT before special items. Due especially to dampened demand for insecticides in South America and fungicides in Europe, however, we posted a slight decrease in sales volumes instead of the expected increase. Negative currency effects also dampened sales. Through strict cost management, EBIT before special items reached the prior year's level despite the slight decline in sales.

In the **Oil & Gas** segment, sales and EBIT before special items fell considerably as expected. We expanded our production volumes in 2016 in line with our forecast.

Sales in **Other** declined considerably, corresponding to our expectations. EBIT before special items, however, was considerably below rather than considerably above the level of the previous year. This was largely attributable to valuation effects for our long-term incentive program.

In 2016, we invested a total of €3.9 billion in capital expenditures[3], less than the anticipated level of around €4.2 billion. **Investments** in the Oil & Gas and Performance Products segments in particular were below the values considered in our planning.

For information on our expectations for 2017, see page 122 onward

[2] Our chemicals business comprises the Chemicals, Performance Products und Functional Materials & Solutions segments.

[3] Excluding additions to property, plant and equipment resulting from acquisitions, capitalized exploration, restoration obligations and IT investments

Net assets

Assets

	December 31, 2016		December 31, 2015	
	Million €	%	Million €	%
Intangible assets	15,162	19.8	12,537	17.7
Property, plant and equipment	26,413	34.5	25,260	35.7
Investments accounted for using the equity method	4,647	6.1	4,436	6.3
Other financial assets	605	0.8	526	0.7
Deferred taxes	2,513	3.3	1,791	2.5
Other receivables and miscellaneous assets	1,210	1.6	1,720	2.4
Noncurrent assets	**50,550**	**66.1**	**46,270**	**65.3**
Inventories	10,005	13.1	9,693	13.7
Accounts receivable, trade	10,952	14.3	9,516	13.4
Other receivables and miscellaneous assets	3,078	4.0	3,095	4.4
Marketable securities	536	0.7	21	.
Cash and cash equivalents	1,375	1.8	2,241	3.2
Current assets	**25,946**	**33.9**	**24,566**	**34.7**
Total assets	**76,496**	**100.0**	**70,836**	**100.0**

Assets

- Rise in both current and noncurrent assets
- Noncurrent assets especially boosted by Chemetall acquisition

Amounting to €76,496 million, the level of total assets was €5,660 million above that of the previous year.

Noncurrent assets rose by €4,280 million to €50,550 million. The €2,625 million increase in intangible assets was mainly due to the Chemetall acquisition. Additions amounted to €2,881 million, €1,552 million of which was goodwill. Currency effects increased intangible assets by €409 million. Amortization[1] reduced them by €560 million and disposals by €91 million.

The value of property, plant and equipment rose by €1,153 million to €26,413 million. Additions amounted to €4,377 million, €4,222 million of which was to investments, putting them above the level of depreciation[1], which amounted to €3,691 million. Additions from acquisitions amounted to €155 million and arose especially from the Chemetall acquisition. Currency effects increased property, plant and equipment by €570 million. Disposals reduced this item by €242 million, €97 million of which was attributable to divestitures.

Investments accounted for using the equity method rose by €211 million to €4,647 million, primarily as a result of additions and currency effects.

Other financial assets increased by €79 million to €605 million and deferred tax assets rose by €722 million to €2,513 million, especially from the increase in provisions for pensions and similar obligations.

Other receivables and miscellaneous assets were down by €510 million to €1,210 million year-on-year. This was largely the result of a decline in the positive fair value of derivatives and lower receivables from loans as well as a lower level of defined benefit assets.

The value of current assets rose by €1,380 million to €25,946 million. The €1,436 million increase in trade accounts receivable resulted mainly from higher year-on-year sales in the fourth quarter as well as from currency effects. Inventories grew by €312 million; other receivables and miscellaneous assets fell by €17 million. With the acquisition of Chemetall on December 14, 2016, these three items increased by €276 million. Marketable securities rose by €515 million due to the optimization of short-term financial investments.

At €1,375 million, cash and cash equivalents were €866 million below the level of December 31, 2015.

For more on the composition and development of individual asset items, see the Notes to the Consolidated Financial Statements from page 189 onward

[1] Including impairments and write-ups

Financial position

Equity and liabilities

	December 31, 2016		December 31, 2015	
	Million €	%	Million €	%
Paid-in capital	4,306	5.6	4,317	6.1
Retained earnings	31,515	41.2	30,120	42.5
Other comprehensive income	(4,014)	(5.2)	(3,521)	(5.0)
Minority interests	761	1.0	629	0.9
Equity	**32,568**	**42.6**	**31,545**	**44.5**
Provisions for pensions and similar obligations	8,209	10.7	6,313	8.9
Other provisions	3,667	4.8	3,369	4.8
Deferred taxes	3,317	4.3	3,381	4.8
Financial indebtedness	12,545	16.4	11,123	15.7
Other liabilities	873	1.2	869	1.2
Noncurrent liabilities	**28,611**	**37.4**	**25,055**	**35.4**
Accounts payable, trade	4,610	6.0	4,020	5.7
Provisions	2,802	3.7	2,540	3.6
Tax liabilities	1,288	1.7	1,082	1.5
Financial indebtedness	3,767	4.9	4,074	5.7
Other liabilities	2,850	3.7	2,520	3.6
Current liabilities	**15,317**	**20.0**	**14,236**	**20.1**
Total equity and liabilities	**76,496**	**100.0**	**70,836**	**100.0**

Equity and liabilities

- **Equity ratio at 42.6%, compared with 44.5% in previous year**
- **Net debt rises from €12,935 million to €14,401 million**

Equity rose by €1,023 million to €32,568 million compared with the previous year. Retained earnings increased by €1,395 million to €31,515 million. Other comprehensive income was reduced by €493 million to minus €4,014 million, primarily because of the remeasurement of defined benefit plans. The equity ratio was 42.6% (2015: 44.5%).

Compared with the end of 2015, noncurrent liabilities grew by €3,556 million to €28,611 million. Provisions for pensions and similar obligations increased by €1,896 million, mainly as a result of the reduced discount rate in all relevant currency zones. Noncurrent financial indebtedness rose by €1,422 million. A bond issued in 2013 with a maturity until 2021 was tapped, increasing its volume by €300 million to €1 billion; in addition, new bonds in EUR, GBP and HKD were issued with an equivalent value totaling €2.6 billion at the end of the year and maturities between 4 and 15 years, in part to finance the acquisition of Chemetall. Four bonds in EUR and GBP due in 2017 with an equivalent value totaling around €1.4 billion were reclassified to current financial indebtedness. Other provisions rose by €298 million while other liabilities matched the prior-year level. Deferred taxes decreased by €64 million.

Current liabilities grew by €1,081 million to €15,317 million. All items contributed to this development, with the exception of financial indebtedness. Trade accounts payable increased by €590 million, current provisions by €262 million, tax liabilities by €206 million and current other liabilities by €330 million. Current financial indebtedness fell by €307 million. This was largely on account of the €681 million year-on-year decrease in outstanding U.S. dollar commercial paper as of December 31, 2016, as well as the scheduled repayment of EUR bonds totaling €900 million. The previously mentioned reclassification of bonds had a counterbalancing effect.

In total, financial indebtedness grew by €1,115 million to €16,312 million. The average maturity of our financial indebtedness was 5.6 years (2015: 5.2 years). Net debt grew by €1,466 million to €14,401 million. This is calculated by subtracting marketable securities and cash and cash equivalents from current and noncurrent financial indebtedness. This balance-related indicator provides information on effective indebtedness.

For more on the composition and development of individual liability items, see the Notes to the Consolidated Financial Statements from page 196 onward

For more on the development of the balance sheet, see the Ten-Year Summary on page 234

Net debt (million €)

	Dec. 31, 2016	Dec. 31, 2015
Noncurrent financial indebtedness	12,545	11,123
+ Current financial indebtedness	3,767	4,074
Financial indebtedness	**16,312**	**15,197**
– Marketable securities	536	21
– Cash and cash equivalents	1,375	2,241
Net debt	**14,401**	**12,935**

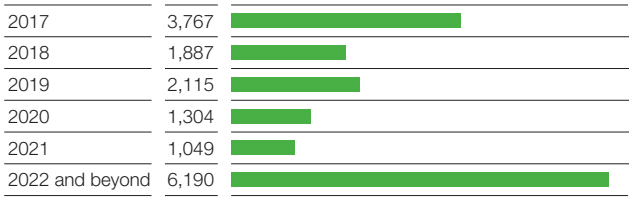
Financing policy and credit ratings

- Financing principles remain unchanged
- "A" ratings confirmed

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

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

Maturities of financial indebtedness (million €)



BASF has good credit ratings, especially in comparison with competitors in the chemical industry. Rating agency Moody's last confirmed their rating of "A1/P-1/outlook stable" on November 28, 2016. Standard & Poor's adjusted their BASF rating from "A+/A-1/outlook negative" to "A/A-1/outlook stable" on March 14, 2016, and confirmed it most recently on August 10, 2016. This adjustment was largely based on the weaker market environment, especially for basic and agricultural chemicals, limited overall volumes growth, and the considerable drop in the price of crude oil. Uncertainty with regard to economic development in China was taken into consideration, as well. Rating agency Scope has also been evaluating our creditworthiness since September 2016. They rated BASF at "A/S-1/outlook stable."

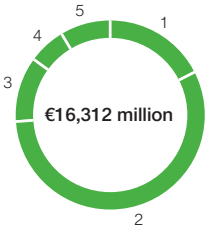
We have solid financing. Corporate bonds form the basis of our medium to long-term debt financing. These are issued in euros and other currencies with different maturities as part of our €20 billion debt issuance program. The goal is to create a balanced maturity profile and diverse range of investors,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

For short-term financing, we use BASF SE's U.S. dollar commercial paper program, which has an issuing volume of up to $12.5 billion. On December 31, 2016, $1,089 million worth of commercial paper was outstanding under this program. Firmly committed, syndicated credit lines of €6 billion serve to cover the repayment of outstanding commercial paper, and can also be used for general company purposes.

These credit lines were not used at any point in 2016. Our external financing is therefore largely independent of short-term fluctuations in the credit markets.

Financing instruments (million €)

1	Bank loans	2,855
2	EUR bonds	9,243
3	USD bonds	1,790
4	USD commercial paper	1,033
5	Other	1,391



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

For more on the financing tools used, see the Notes to the Consolidated Financial Statements from page 208 onward

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

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

Statement of Cash Flows

■ **Cash provided by operating activities significantly, and free cash flow slightly, down year-on-year**

At €7,717 million, **cash provided by operating activities** in 2016 was €1,729 million below the level of the previous year. Contributing to this was the lower year-on-year level of cash inflow from changes in net working capital, which contains changes in inventories and receivables as well as in operating liabilities and other provisions. This resulted primarily from the targeted reduction of inventories in 2015. Miscellaneous items especially included the transfer of disposal gains into cash used in investing activities. In 2015, this item had primarily included the reclassification of gains from the asset swap with Gazprom.

Cash used in investing activities amounted to €6,490 million in 2016 compared with €5,235 million in 2015. Payments made for property, plant and equipment and intangible assets were at €4,145 million, below both the prior year's level (€5,812 million) and the level of amortization and depreciation of intangible assets and property, plant and equipment and financial assets (€4,291 million).

Acquisitions and divestitures in 2016 resulted in net payments made of €2,164 million compared with €436 million in net payments received in 2015. The acquisition of Chemetall was primarily responsible.

Cash outflow of €181 million from financial assets and other items in 2016 was mainly attributable to the acquisition of marketable securities. In 2015, the decline in loan receivables in particular had led to €141 million in payments received.

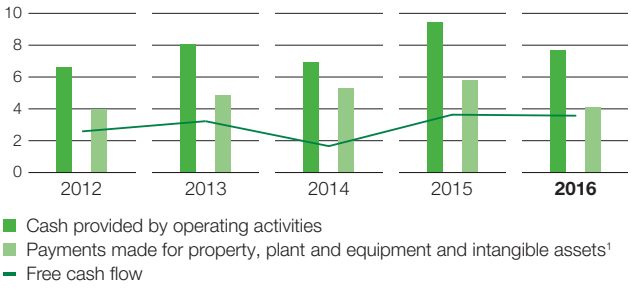
For more on investments and acquisitions, see page 37 onward

Cash used in financing activities amounted to €2,160 million in 2016, compared with €3,673 million in the previous year. Contributions from minority interests to capital increases in Group companies led to a cash inflow of €28 million in 2016. Changes in financial liabilities resulted in cash inflow of €579 million. This was largely the result of issuing new bonds as well as of tapping an existing bond; the scheduled repayment of three bonds and scaling back BASF SE's U.S. dollar commercial paper program both had a counterbalancing effect. In 2016, dividends of €2,664 million were paid to shareholders of BASF SE and €103 million to minority interests.

Cash and cash equivalents fell by €933 million, amounting to €1,375 million as of December 31, 2016.

Free cash flow, which is what remains after subtracting payments made for property, plant and equipment and intangible assets from cash provided by operating activities, fell to €3,572 million compared with €3,634 million in 2015. The decline in cash provided by operating activities was nearly offset by lower payments made for property, plant and equipment and intangible assets.

Cash flow (billion €)



[1] Including investments to the extent that they already had an effect on cash

Statement of cash flows (million €)

	2016	2015
Net income	4,056	3,987
Depreciation and amortization of intangible assets, property, plant and equipment, and financial assets	4,291	4,448
Changes in net working capital	104	1,347
Miscellaneous items	(734)	(336)
Cash provided by operating activities	**7,717**	**9,446**
Payments made for property, plant and equipment and intangible assets	(4,145)	(5,812)
Acquisitions/divestitures	(2,164)	436
Financial assets and other items	(181)	141
Cash used in investing activities	**(6,490)**	**(5,235)**
Capital increases/repayments and other equity transactions	28	66
Changes in financial liabilities	579	(933)
Dividends	(2,767)	(2,806)
Cash used in financing activities	**(2,160)**	**(3,673)**
Net changes in cash and cash equivalents	(933)	538
Cash and cash equivalents at the beginning of the year and other changes	2,308	1,703
Cash and cash equivalents at the end of the year	**1,375**	**2,241**

Business review by segment

Segment overview (million €)

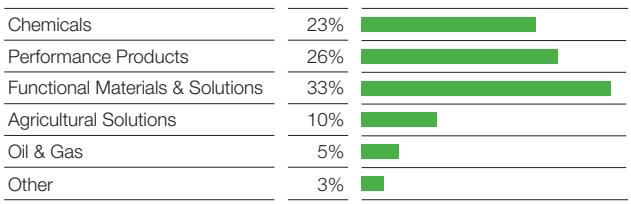
	Sales		Income from operations before depreciation and amortization (EBITDA)		Income from operations (EBIT) before special items	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Chemicals	13,461	14,670	3,169	3,090	2,064	2,156
Performance Products	15,002	15,648	2,522	2,289	1,745	1,366
Functional Materials & Solutions	18,732	18,523	2,906	2,228	1,946	1,649
Agricultural Solutions	5,569	5,820	1,305	1,321	1,087	1,090
Oil & Gas	2,768	12,998	1,596	2,587	517	1,366
Other	2,018	2,790	(972)	(866)	(1,050)	(888)
	57,550	**70,449**	**10,526**	**10,649**	**6,309**	**6,739**

Segment overview (million €)

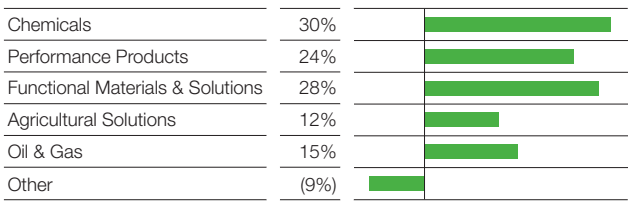
	Income from operations (EBIT)		Assets		Investments[1]	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Chemicals	1,983	2,131	13,486	12,823	1,213	1,859
Performance Products	1,648	1,340	14,549	14,232	864	964
Functional Materials & Solutions	2,199	1,607	17,359	13,341	3,679	854
Agricultural Solutions	1,037	1,083	8,899	8,435	266	402
Oil & Gas	499	1,072	12,829	12,373	1,115	1,823
Other	(1,091)	(985)	9,374	9,632	121	111
	6,275	**6,248**	**76,496**	**70,836**	**7,258**	**6,013**

[1] Additons to property, plant and equipment (thereof from acquisitions: €155 million in 2016 and €91 million in 2015) and intangible assets (thereof from acquisitions: €2,789 million in 2016 and €136 million in 2015)

Contributions to total sales by segment



Contributions to EBITDA by segment



Sales[1] (million €)

	1st quarter		2nd quarter		3rd quarter		4th quarter	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**
Chemicals	3,149	3,866	3,373	3,975	3,377	3,640	3,562	3,189
Performance Products	3,783	4,038	3,846	4,084	3,771	3,899	3,602	3,627
Functional Materials & Solutions	4,408	4,584	4,703	4,916	4,660	4,517	4,961	4,506
Agricultural Solutions	1,780	1,898	1,459	1,678	1,049	1,077	1,281	1,167
Oil & Gas	611	4,993	617	3,668	618	3,606	922	731
Other	477	688	485	757	538	685	518	660
	14,208	**20,067**	**14,483**	**19,078**	**14,013**	**17,424**	**14,846**	**13,880**

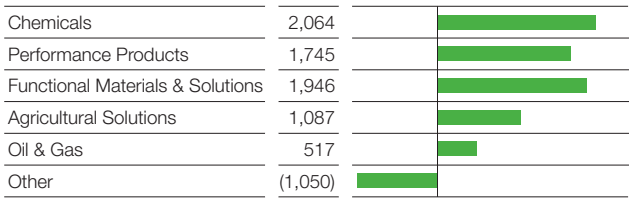
Income from operations (EBIT) before special items[1] (million €)

	1st quarter		2nd quarter		3rd quarter		4th quarter	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**
Chemicals	465	726	467	548	497	633	635	249
Performance Products	547	515	503	304	464	319	231	228
Functional Materials & Solutions	456	431	535	458	497	371	458	389
Agricultural Solutions	591	574	320	365	97	7	79	144
Oil & Gas	66	437	94	431	194	371	163	127
Other	(219)	(613)	(212)	(63)	(233)	(98)	(386)	(114)
	1,906	**2,070**	**1,707**	**2,043**	**1,516**	**1,603**	**1,180**	**1,023**

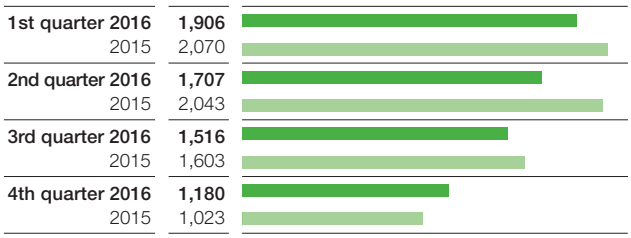
Income from operations (EBIT)[1] (million €)

	1st quarter		2nd quarter		3rd quarter		4th quarter	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**
Chemicals	468	726	467	548	499	631	549	226
Performance Products	535	491	486	368	458	315	169	166
Functional Materials & Solutions	452	464	531	411	492	366	724	366
Agricultural Solutions	590	573	288	365	93	6	66	139
Oil & Gas	66	436	93	430	178	643	162	(437)
Other	(245)	(695)	(147)	(83)	(256)	(72)	(443)	(135)
	1,866	**1,995**	**1,718**	**2,039**	**1,464**	**1,889**	**1,227**	**325**

EBIT before special items by segment
(million €)



EBIT before special items BASF Group by quarter[1]
(million €)



[1] Quarterly results not audited

Chemicals

The Chemicals segment consists of the Petrochemicals, Monomers and Intermediates divisions. In our integrated production facilities – our Verbund – we produce a broad range of basic chemicals and intermediates in Europe, Asia, North America and South America for our customers.

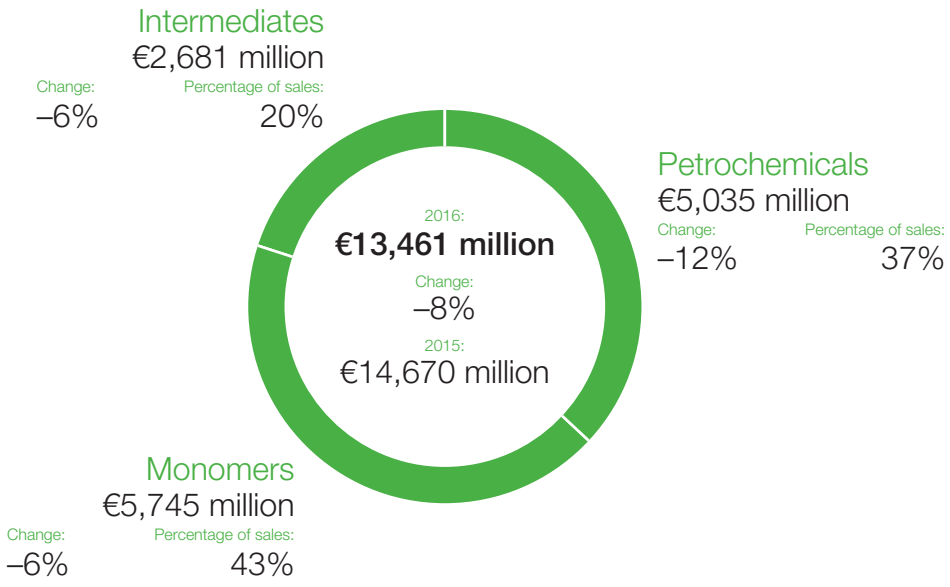
Divisions

Petrochemicals
Broad range of basic products and specialties for sectors such as the chemical and plastics industries

Monomers
Isocyanates and polyamides as well as inorganic basic products and specialties for various branches, such as the plastics, automotive, construction and electronics industries

Intermediates
Most comprehensive intermediates portfolio in the world, including precursors for coatings, plastics, textile fibers and crop protection products

Sales



Factors influencing sales

Volumes	3%
Prices	(11%)
Portfolio	0%
Currencies	0%
Sales	**(8%)**

Income from operations before special items
(million €)

2016	**2,064**
2015	2,156

Change:
minus €92 million

How we create value – an example

Biomass Balance Approach

A groundbreaking way of using renewable resources in the Verbund

Value for BASF

Externally certified products since introduction **>40**

Since 2013, we have been in a position to flexibly replace fossil resources in our current Verbund system with sustainably generated bio-based raw materials by feeding raw materials like biogas or bionaphtha right into the beginning of the value chain. The method is independently certified[1] and can be used in existing production facilities. Based on their formulations, we can already allocate and certify the proportion of biomass in more than 40 sales products. Extensions to this portfolio can be accomplished within a short amount of time and enable us to quickly react to growing interest in the use of renewable resources.

For more on the biomass balance approach, see page 94

Value for our customers and the environment

Increased use of renewable in place of fossil raw materials per product up to **100%**

The approach can be applied to many of our products and adjusted to customer specifications. Up to 100% of a product's fossil raw materials can be replaced by sustainably produced biomass while retaining identical product quality. Some of the products already certified include dispersions, superabsorbents and plastics. The certification makes it easier for our customers to place products on the market that have been produced with the help of renewable resources.

Strategy

- **Integrated production facilities form core of Verbund**
- **Technology and cost leadership provide most important competitive edge**

With its production facilities, the Chemicals segment is at the heart of the Verbund structure and supplies BASF's segments with basic chemicals for the production of downstream products. We add value with innovations in processes and production, and invest in future markets to ensure the growth of the entire BASF Verbund. As a reliable supplier, we market our products to customers in downstream industries. We continually improve our value chains and are expanding our market position – particularly outside Europe – with new processes and technologies, as well as through investments and collaborations in future markets.

We invest in research and development in order to develop new technologies and to make our existing technologies even more efficient. Cost leadership and a clear orientation along individual value chains are among our most important competitive advantages. We concentrate on the critical success factors of the classical chemicals business: making use of economies of scale, the advantages of our Verbund, high capacity utilization, continuous optimization of access to raw materials, lean processes, and reliable, cost-effective logistics. Furthermore, we are constantly improving our global production structures and aligning these with regional market requirements.

In Ludwigshafen, we will strengthen the Verbund by replacing our acetylene plant, which occupies a central role for many products and value chains, with a modern, highly efficient plant by 2019.

[1] Certification standard "Renewable raw materials" of the independent inspection authority TÜV SÜD, Munich, Germany

Products, customers and applications

Division	Products	Customer industries and applications
Petrochemicals	Basic products: ethylene, propylene, butadiene, benzene, alcohols, solvents, plasticizers, alkylene oxides, glycols and acrylic monomers Specialties: special plasticizers such as Hexamoll®, Dinch®, special acrylates	Use in BASF-Verbund Chemical and plastics industry, detergent, automotive, packing and textile industries; production of paints, coatings, and cosmetics as well as oilfield, construction and paper chemicals
Monomers	Basic products: isocyanates (MDI, TDI), ammonia, caprolactam, adipic acid, chlorine, urea, glues and impregnating resins, caustic soda, polyamides 6 and 6.6, standard alcoholates, sulfuric and nitric acid Specialties: electronic chemicals[1], metal systems[1]	Use in BASF-Verbund Industries such as plastics, electronics, lumber, furniture, packaging, textile, construction and automotive
Intermediates	Basic products: butanediol and derivatives, alkylamines and alkanolamines, neopentyl glycol, formic and propionic acid Specialties: specialty amines such as *tert*-Butylamine, gas scrubbing chemicals, vinyl monomers, acid chlorides, chloroformates, chiral intermediates	Use in BASF-Verbund Plastics, coatings and pharmaceutical industries, production of detergents and cleaners as well as crop protection products and textile fibers

[1] Transferred to the Dispersions & Pigments division on January 1, 2017

Production capacities of significant products[2]

	Sites				
Product	Europe	North America	Asia Pacific	South America, Africa, Middle East	Annual capacity (metric tons)
Acrylic acid	■	■	■	■	1,510,000
Alkylamines	■	■	■		250,000
Formic acid	■	■	■		305,000
Ammonia	■				1,525,000
Benzene	■	■	■		910,000
Butadiene	■	■	■		680,000
Butanediol equivalents	■	■	■		670,000
Chlorine	■				385,000
Ethanolamines and derivatives	■		■		430,000
Ethylene	■	■	■		3,480,000
Ethylene oxide	■	■	■		1,445,000
Urea	■				545,000
Isocyanates	■	■	■		2,610,000
Caustic soda	■				360,000
Neopentyl glycol	■	■	■		205,000
Oxo-C4 alcohols (calculated as butyraldehyde)	■	■	■		1,495,000
Polyamide 6 and 6.6	■	■	■		820,000
Polyamide precursors	■	■			1,010,000
PolyTHF®	■	■	■		350,000
Propionic acid	■		■		150,000
Propylene	■	■	■		2,610,000
Propylene oxide	■				675,000
Sulfuric acid	■				920,000
Plasticizers	■	■			535,000

[2] All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Capital expenditures

Location	Project	Additional annual capacity through expansion (metric tons)	Total annual capacity (metric tons)	Startup
Caojing, China	Expansion: MDI plant[1]	240,000	480,000	2017
Freeport, Texas	Construction: ammonia plant[2]		750,000	2017
Geismar, Louisiana	Expansion: butanediol plant	n/a	160,000	2016
Korla, China	Construction: butanediole plant[3]		100,000	2016
	Construction: PolyTHF® plant		50,000	2016
Kuantan, Malaysia	Construction: 2-ethylhexanoic acid plant		30,000	2016
Ludwigshafen, Germany	Construction: TDI plant		300,000	2015/2016
	Replacement: acetylene plant	n/a	90,000	2019
Pasadena, Texas	Changeover of plasticizers production to dioctyl terephthalate (DOTP)	n/a	n/a	2017

[1] Operated by an associated company with Huntsman, Shanghai Huayi (Group) Company, Shanghai Chlor-Alkali Chemical Co. Ltd. and Sinopec Group Assets Management Corp.

[2] Operated by an associated company with Yara International ASA

[3] Operated by an associated company with Xinjiang Markor Chemical Industry Co. Ltd.

Segment data (million €)

		2016	2015	Change in %
Sales to third parties		13,461	14,670	(8)
Thereof	Petrochemicals	5,035	5,728	(12)
	Monomers	5,745	6,093	(6)
	Intermediates	2,681	2,849	(6)
Intersegmental transfers		4,836	5,300	(9)
Sales including intersegmental transfers		18,297	19,970	(8)
Income from operations before depreciation and amortization (EBITDA)		3,169	3,090	3
EBITDA margin	%	23.5	21.1	–
Amortization and depreciation[1]		1,186	959	24
Income from operations (EBIT)		1,983	2,131	(7)
Special items		(81)	(25)	.
EBIT before special items		2,064	2,156	(4)
EBIT after cost of capital		686	692	(1)
Assets		13,486	12,823	5
Investments[2]		1,213	1,859	(35)
Research and development expenses		182	207	(12)

[1] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)
[2] Additions to intangible assets and property, plant and equipment (including acquisitions)

Chemicals segment

- **Sales decrease by 8% to €13,461 million, due to lower prices**
- **Decline in EBIT before special items by 4% to €2,064 million mainly owing to higher fixed costs**

In the Chemicals segment, sales to third parties decreased by €1,209 million in 2016 to €13,461 million (volumes 3%, prices –11%, portfolio 0%, currencies 0%). The reason for this were lower prices as a result of slumped raw material prices, especially in the Petrochemicals division. We were able to raise our volumes overall.

Income from operations (EBIT) before special items fell by €92 million to €2,064 million, mainly because of higher fixed costs from new production plant startups. Lower margins in the Petrochemicals and Intermediates divisions also dampened EBIT before special items; higher margins for isocyanates in the Monomers division helped slow the decline. EBIT decreased by €148 million to €1,983 million. Special charges came mainly from the overhaul of caprolactam production in Europe.

For the Outlook for 2017, see page 122

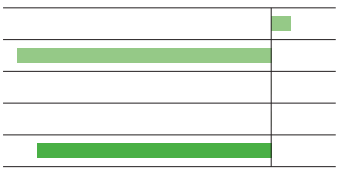
Petrochemicals

- **At €5,035 million, sales down by 12%, mainly due to price declines**
- **EBIT before special items slightly below previous year's value owing to lower margins**

In the Petrochemicals division, sales to third parties fell by €693 million to €5,035 million in 2016, largely owing to sharp declines in sales prices. These were predominantly brought about by raw material prices that were significantly below prior-year levels, especially in the first half of the year. Production was resumed at the Ellba C.V. joint operation plant in Moerdijk, Netherlands, enabling us to slightly increase overall sales volumes. In North America, volumes decreased mainly as a result of lower plant capacity utilization of the condensate splitter as well as of unscheduled shutdowns of the steam cracker in Port Arthur, Texas.

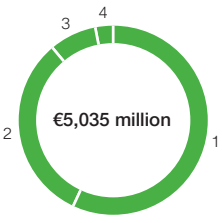
Petrochemicals – Factors influencing sales

Volumes	1%
Prices	(13%)
Portfolio	0%
Currencies	0%
Sales	**(12%)**



Petrochemicals – Sales by region
(Location of customer)

1	Europe	57%
2	North America	32%
3	Asia Pacific	8%
4	South America, Africa, Middle East	3%



EBIT before special items was slightly below the previous year's high level due to lower margins overall. Steam cracker margins fell sharply in North America, while in Europe, they once again matched the high level of 2015. Margins declined in the acrylic monomers and oxo alcohol businesses due to high product availability on the market. Margins developed

positively, however, for steam cracker products in Asia and for ethylene oxide and glycols in Europe, largely driven by product scarcity on the market in the first half of the year.

Monomers

- **Sales decrease by 6% to €5,745 million, mainly on account of lower prices**
- **EBIT before special items considerably higher as a result of increased isocyanate margins**

In the Monomers division, sales to third parties declined by €348 million to €5,745 million in 2016. This was basically the result of lower sales prices brought about by a drop in raw material costs, which particularly weighed down sales in the polyamide value chain. By contrast, prices increased for isocyanates.

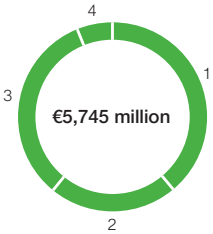
Volumes growth for isocyanates was able to more than compensate for the decline in the caprolactam business; sales volumes grew slightly as a result.

Monomers – Factors influencing sales

Volumes	4%
Prices	(8%)
Portfolio	(1%)
Currencies	(1%)
Sales	**(6%)**

Monomers – Sales by region
(Location of customer)

1	Europe	39%
2	North America	22%
3	Asia Pacific	33%
4	South America, Africa, Middle East	6%



Increased margins for isocyanates, particularly in the fourth quarter of 2016, led to a considerable increase in EBIT before special items. They were able to more than offset lower margins in the polyamide value chain as well as the higher fixed costs arising from the startup of new production plants. Special charges came mainly from the overhaul of caprolactam production in Europe.

In August 2016, we began production at the TDI complex in Ludwigshafen, Germany, and started supplying customers for the first time. The plant's gradual startup had begun in November 2015. Owing to a technical defect in November 2016, the TDI plant was still undergoing repair at the time of this report's publication.

Intermediates

- **Sales decrease by 6% to €2,681 million on account of lower prices**
- **Lower margins primarily responsible for considerable year-on-year decline in EBIT before special items**

Compared with 2015, sales to third parties decreased by €168 million to €2,681 million in the Intermediates division. Sales prices fell once again, due to a sharp drop in raw material prices. In the butanediol and derivatives market, intense competitive pressure from the startup of new capacities in Asia additionally weighed down prices.

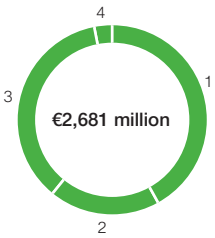
We were able to raise our volumes overall, predominantly driven by higher sales volumes of amines in North America and of polyalcohols, especially neopentylglycol, in Asia.

Intermediates – Factors influencing sales

Volumes	6%
Prices	(12%)
Portfolio	0%
Currencies	0%
Sales	**(6%)**

Intermediates – Sales by region
(Location of customer)

1	Europe	42%
2	North America	19%
3	Asia Pacific	36%
4	South America, Africa, Middle East	3%



EBIT before special items in 2016 was considerably below the previous year's level. This was mainly the result of substantially shrunken margins in the butanediol and derivatives business. Slowing the decline were improved margins in the polyalcohols business. Fixed costs rose year-on-year, mainly as a result of several production plants beginning operation in the second half of 2015. Special charges resulted predominantly from impairments on assets.

We expanded our butanediol capacities in Geismar, Louisiana, in 2016. With our partner PETRONAS, we started up a plant for 2-ethylhexanoic acid in Kuantan, Malaysia; in Korla, China, we have been producing polytetrahydrofuran (PolyTHF®) since July 2016 with our partner Markor.

Performance Products

The Performance Products segment consists of the Dispersions & Pigments, Care Chemicals, Nutrition & Health and Performance Chemicals divisions. Our solutions enhance the performance of industrial and consumer products worldwide. With our tailor-made products, our customers can make their production processes more efficient and give their products improved application properties.

Divisions

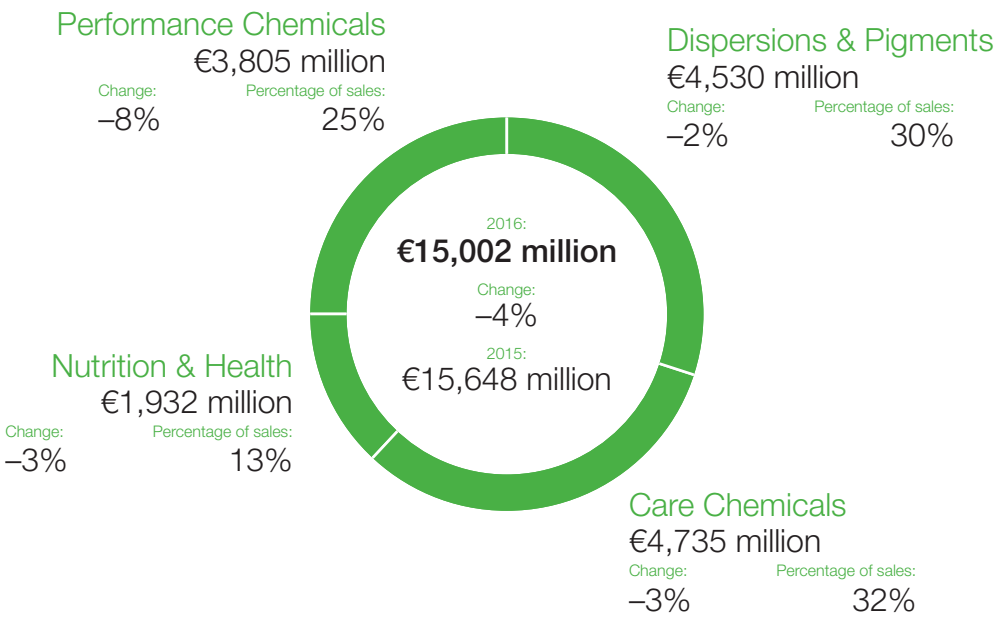
Dispersions & Pigments
Raw materials for the formulation of varnishes, coatings, printing and packaging inks, adhesives and construction materials

Care Chemicals
Ingredients for hygiene, personal care, home care and industrial & institutional cleaning businesses as well as for applications in the chemical industry

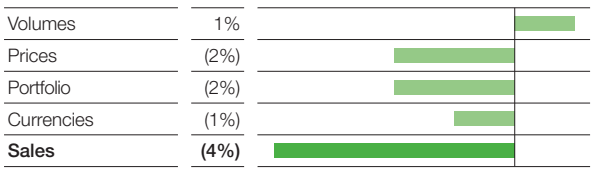
Nutrition & Health
Products for the food and feed industries, the flavor and fragrance industry and the pharmaceutical industry

Performance Chemicals
Customized products for many sectors, from mining and the fuel industry to plastics processing

Sales



Factors influencing sales



Income from operations before special items
(million €)

Change:
€379 million

How we create value – an example

Ingredients from RSPO-certified palm kernel oil

Attracting customers as a reliable supplier and supporting more sustainable cultivation

Value for BASF

In 2016, purchase of certified palm kernel oil increased to 158,000 metric tons

The sustainable cultivation of renewable raw materials is gaining in importance. Our customers in the cosmetic and detergents and cleaners industries are therefore increasingly making use of ingredients containing palm kernel oil that has been certified according to the criteria of the Round Table on Sustainable Palm Oil (RSPO). The availability of certified palm kernel oil is limited. And yet we were able to expand our purchasing volumes by around 32,000 to 158,000 metric tons in 2016, nearly doubling sales of certified products based on palm kernel oil. This allows us to meet increasing demand and participate in actively shaping the evolving market.

Value for our customers and the environment

Number of RSPO-certified production sites worldwide 19

With a total of 19 RSPO-certified production sites on four continents, we offer our customers a secure supply worldwide, helping them fulfill the obligations they took on for sustainable palm-based products. Our annual use of palm kernel oil and its derivatives requires an average of 785,000 hectares of cultivated acreage. As one of the largest global processors of palm kernel oil, we will continue our commitment to continuously improving sustainability along the entire value chain.

Strategy

- **Tailor-made products and solutions improve our customers' applications and processes**
- **Global presence ensures reliable supply to customers in all regions**
- **Pigments activities transferred to independent legal entities; new Electronic Materials business unit**

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

Industry-specific specialties make up a major part of our product range. These products create additional value for our customers, which allows them to stand out from the competition. We develop new solutions together with our customers and strive for long-term partnerships which create profitable growth opportunities for both sides.

We pursue a different business model for standard products, such as vitamins or dispersions for paper coatings. Here, efficient production setups, backward integration in our Production Verbund's value chains, capacity management, and technology and cost leadership are all essential.

We support our customers by serving as a reliable supplier with consistently high product quality, good value for money and lean processes.

In July 2016, we transferred the global pigments activities to independent legal entities. The largest is BASF Colors & Effects GmbH, headquartered in Ludwigshafen, Germany. This reorganization allows for better adaptation to the challenges facing the pigment industry.

As of January 1, 2017, all resources of the BASF Group for the electronics industry, including the activities of the Monomers division for the semiconductor and display sectors, were combined into a new global business unit, Electronic Materials, allocated to the Dispersions & Pigments division. This will strengthen our position as a strategic partner to the major electronics manufacturers.

We began planning construction of a new vitamin A complex in Ludwigshafen, scheduled to start up in 2020.

Products, customers and applications

Division	Products	Customer industries and applications
Dispersions & Pigments	Polymer dispersions, pigments, resins, high-performance additives, formulation additives, electronic chemicals[1]	Raw materials for paints and coatings, adhesives industry, plastics processing industry, products for construction chemicals, printing and packaging industry, paper industry, specialties for the electronics and other industries
Care Chemicals	Ingredients for skin and hair cleansing and care products, such as emollients, cosmetic active ingredients, polymers and UV filters Ingredients for detergents and cleaners in household, institution or industry, such as surfactants, enzymes, chelating agents, polymers, biocides and products for optical effects Solvents for crop protection product formulations and products for metal surface treatments Superabsorbents for baby diapers, adult incontinence products and feminine hygiene articles	Cosmetics industry, hygiene industry, detergent and cleaner industry, agricultural industry and technical applications
Nutrition & Health	Additives for the food and feed industries, such as vitamins, carotenoids, sterols, enzymes, emulsifiers and omega-3 fatty acids Flavors and fragrances, such as geraniol, citronellol, L-menthol and linalool Excipients for the pharmaceutical industry and selected, high-volume active ingredients, such as ibuprofen and omega-3 fatty acids	Food and feed industries, flavor and fragrance industry and pharmaceutical industry
Performance Chemicals	Antioxidants, light stabilizers, pigments and flame retardants for plastic applications Fuel and refinery additives, polyisobutene, brake fluids and engine coolants, lubricant additives and basestocks, components for metalworking fluids and compounded lubricants Process chemicals for the extraction of oil, gas, metals and minerals, chemicals for enhanced oil recovery Auxiliaries for the production and treatment of leather and textiles Functional chemicals and process chemicals for the production of paper and cardboard, water treatment chemicals, membrane technologies, kaolin minerals	Plastics processing industry, automotive industry, fuel and lubricant industry, oil and gas industry, mining industry, municipal and industrial water treatment, leather industry as well as paper industry and packaging made of paper

[1] Since January 2017

Production capacities of significant products[2]

	Sites				
Product	Europe	North America	Asia Pacific	South America, Africa, Middle East	Annual capacity (metric tons)
Anionic surfactants	■	■	■	■	600,000
Citral	■				40,000
Chelating agents	■	■		■	170,000
Methane sulfonic acid	■				30,000
Nonionic surfactants	■	■	■		630,000
Organic pigments	■	■	■	■	n/a
Polyisobutene	■		■		215,000
Superabsorbents	■	■	■	■	590,000

[2] All capacities are included at 100%, including plants belonging to joint operations and joint ventures.

Capital expenditures

Location	Project	Startup
Antwerp, Belgium	Modification for new superabsorbent technology	2017
Besigheim, Germany	Expansion: production plant for bismuth vanadate pigments	2017
Bradford, England	Construction: production plant for bio-acrylamide	2016
Kuantan, Malaysia	Construction: aroma ingredients complex	2017
	Construction: polyisobutene plant	2017
Ludwigshafen, Germany	Expansion: lubricants plant	2016
	Expansion: production plant for resins (Laromer®)	2016
	Expansion: production plant for pigments (Paliocrom®)	2016
	Expansion: vinyl formamide plant	2016
	Expansion: polyvinylpyrrolidone plant	2017
	Expansion: production plant for resins (Basonat®)	2017
	Construction: production plant for vitamin A	2020
Nanjing, China	Expansion: polyacrylamide plant	2018
Shanghai, China	Modification: polyvinylpyrrolidone plant	2016

Segment data (million €)

		2016	2015	Change in %
Sales to third parties		15,002	15,648	(4)
Thereof	Dispersions & Pigments	4,530	4,629	(2)
	Care Chemicals	4,735	4,900	(3)
	Nutrition & Health	1,932	1,998	(3)
	Performance Chemicals	3,805	4,121	(8)
Intersegmental transfers		465	463	0
Sales including intersegmental transfers		15,467	16,111	(4)
Income from operations before depreciation and amortization (EBITDA)		2,522	2,289	10
EBITDA margin	%	16.8	14.6	–
Amortization and depreciation[1]		874	949	(8)
Income before operations (EBIT)		1,648	1,340	23
Special items		(97)	(26)	.
EBIT before special items		1,745	1,366	28
EBIT after cost of capital		209	(305)	.
Assets		14,549	14,232	2
Investments[2]		864	964	(10)
Research and development expenses		362	383	(5)

[1] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)

[2] Additions to intangible assets and property, plant and equipment (including acquisitions)

Performance Products segment

- **At €15,002 million, sales driven down 4% mainly by prices and divestitures**
- **EBIT before special items improves by 28% to €1,745 million, primarily due to lower fixed costs and higher margins**

At €15,002 million, sales to third parties in 2016 in the Performance Products segment were €646 million below the level of the previous year. This was primarily attributable to falling sales prices and the divestitures completed in 2015 (volumes 1%, prices –2%, portfolio –2%, currencies –1%). The drop in sales prices was largely the result of oil-price-related reductions in raw material costs, in addition to ongoing pressure on prices in the hygiene business. Sharp increases in vitamin prices in the Nutrition & Health division helped counter this development.

In addition, the portfolio measures taken in 2015 — in particular, the divestiture of parts of our pharmaceutical ingredients and services business and the paper hydrous kaolin activities, as well as the sale of the textile chemicals business — led to diminished sales in 2016. Currency effects slightly dampened sales in all divisions. We achieved volumes growth overall in the remaining business.

We raised income from operations (EBIT) before special items by €379 million to €1,745 million. This was mostly due to significantly reduced fixed costs thanks to restructuring measures and strict fixed cost management, in addition to improved margins. At €1,648 million, EBIT exceeded the previous year's level by €308 million. Special charges were predominantly attributable to restructuring measures. Special income arose particularly from the sale of the photoinitiator business.

For the Outlook for 2017, see page 122

Dispersions & Pigments

- **Sales at €4,530 million, 2% below 2015 level mostly owing to lower prices**
- **Considerable increase in EBIT before special items, primarily through higher margins**

At €4,530 million, sales to third parties were €99 million below the level of the previous year in the Dispersions & Pigments division. Lower sales prices weighed down by an oil-price-related drop in raw material costs were the main reason behind this slight decline. We were able to slightly raise overall sales volumes.

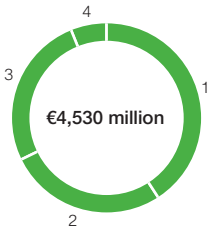
Demand in the dispersions business developed positively, especially in Asia and Europe, but sales as a whole fell on account of price declines. Sales of resins decreased mainly as a result of lower prices. The closure of the production plant in Kankakee, Illinois, also weighed down sales; growth impetus, on the other hand, came from Europe and Asia. In the additives business, rising volumes drove an increase in sales. In July 2016, we transferred our global pigments activities to independent legal entities. Sales in this sector increased slightly thanks largely to the positive business development in Asia; by contrast, sales fell in Europe.

Dispersions & Pigments – Factors influencing sales

Volumes	3%
Prices	(4%)
Portfolio	0%
Currencies	(1%)
Sales	**(2%)**

Dispersions & Pigments – Sales by region
(Location of customer)

1	Europe	41%
2	North America	27%
3	Asia Pacific	26%
4	South America, Africa, Middle East	6%



We considerably improved EBIT before special items in 2016, predominantly thanks to higher margins. We held fix costs at the previous year's level through strict cost discipline. Special charges were below the level of the previous year, and were mostly related to restructuring measures. They were partly offset by gains from the disposal of the photoinitiator business.

Care Chemicals

- **Sales decrease by 3% to €4,735 million, mainly on account of lower prices**
- **EBIT before special items improves considerably thanks to reduced fixed costs**

In the Care Chemicals division, sales to third parties fell by €165 million to €4,735 million in 2016. This was predominantly the result of reduced prices due to lower raw material prices and ongoing intense competition in the hygiene business. Negative currency effects, especially from the Argentinian peso and Brazilian real, additionally dampened sales.

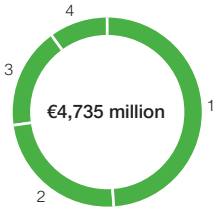
Sales volumes matched the prior-year level in a market environment that remained difficult. We increased sales volumes, especially in our business with ingredients for the detergents and cleaners industry, as well as in the Asia Pacific region. This compensated for lower demand, especially in the hygiene business and in South America.

Care Chemicals – Factors influencing sales

Volumes	0%
Prices	(2%)
Portfolio	0%
Currencies	(1%)
Sales	**(3%)**

Care Chemicals – Sales by region
(Location of customer)

1	Europe	49%
2	North America	24%
3	Asia Pacific	17%
4	South America, Africa, Middle East	10%



We were able to reduce fixed costs through strict cost discipline, thereby more than offsetting the continued pressure on margins that came largely from the hygiene business. As a consequence, EBIT before special items rose slightly compared with the previous year. Special charges were predominantly attributable to restructuring measures.

In the fourth quarter of 2016, we started up the expanded production facility for chelating agents, including Trilon® M, at the site in Ludwigshafen, Germany. We increased production volumes of surfactants in Dahej, India, in 2016. We continued modification work for the new superabsorbent technology at the site in Antwerp, Belgium, and plan to complete this in 2017.

Nutrition & Health

- Sales down by 3% to €1,932 million after divestitures in pharmaceuticals business
- Considerable improvement in EBIT before special items, especially through lower fixed costs and higher margins and volumes

Sales to third parties in 2016 declined by €66 million to €1,932 million in the Nutrition & Health division. This slight reduction came from the sale of parts of our pharmaceutical ingredients and services business at the end of September 2015. We were able to raise volumes in all business areas. Demand grew, especially in the pharmaceuticals and animal nutrition businesses. Sales prices overall were also higher than in the previous year, primarily as a result of significant price increases for vitamins in the animal nutrition business. This allowed us to more than compensate for the decline in prices in the flavor and fragrance business brought about by falling raw material costs.

Nutrition & Health – Factors influencing sales

Volumes	3%
Prices	3%
Portfolio	(8%)
Currencies	(1%)
Sales	**(3%)**

Nutrition & Health – Sales by region
(Location of customer)

1	Europe	40%
2	North America	21%
3	Asia Pacific	29%
4	South America, Africa, Middle East	10%

EBIT before special items improved considerably compared with 2015 due to substantially reduced fixed costs as well as to higher margins and volumes. The reduction in fixed costs was largely thanks to restructuring measures and improved capacity utilization of our production plants. Special charges were primarily related to measures implemented to increase our competitiveness. Special income arose in part from the sale of the sterol site in Pasadena, Texas, in May 2016.

We concluded the modification of our production plant for polyvinylpyrrolidone in Shanghai, China, in 2016. With our partner, PETRONAS, we completed construction of the new aroma ingredients complex at the integrated chemical site in Kuantan, Malaysia. Production facilities for citral and L-menthol will be gradually started up.

Performance Chemicals

- Sales down 8% to €3,805 million, mainly due to lower prices and divestitures
- EBIT before special items rise slightly, mostly through reduction in fixed costs

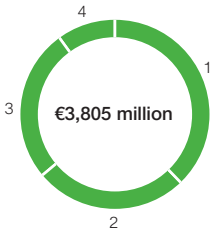
In the Performance Chemicals division, sales to third parties fell by €316 million to €3,805 million compared with 2015. This was largely the result of the lower sales prices brought about by a sharp drop in raw material prices, as well as the sale of the paper hydrous kaolin activities and the textile chemicals business. Negative currency effects additionally weighed down sales. We were able to raise our volumes overall, with growth impetus coming particularly from the plastic additives business and from the region Europe. Demand for oilfield and mining chemicals declined, however, in an environment fraught with lower oil and raw material prices.

Performance Chemicals – Factors influencing sales

Volumes	1%
Prices	(4%)
Portfolio	(4%)
Currencies	(1%)
Sales	**(8%)**

Performance Chemicals – Sales by region
(Location of customer)

1	Europe	38%
2	North America	26%
3	Asia Pacific	26%
4	South America, Africa, Middle East	10%



We achieved a slight rise in EBIT before special items compared with the previous year. This was mainly due to lower fixed costs resulting from restructuring measures and strict cost discipline. Special charges arose partly on account of these restructuring measures.

At the Bradford, England, site, in 2016 we started up a world-scale bio-acrylamide production plant employing a new enzymatic catalysis process. This will strengthen our polymer production network and increase our competitiveness.

Functional Materials & Solutions

The Functional Materials & Solutions segment comprises the Catalysts, Construction Chemicals, Coatings and Performance Materials divisions. They develop and market system solutions, services and innovative products for specific sectors and customers, particularly for the automotive, electronics, chemical and construction industries as well as for household applications, sports and leisure.

Divisions

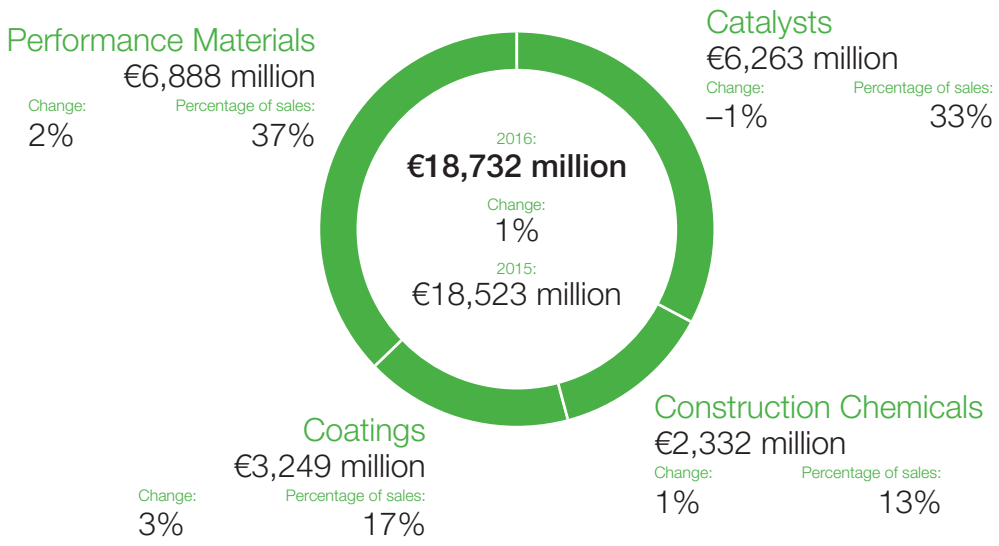
Catalysts
Automotive and process catalysts, battery materials, precious metal trading

Construction Chemicals
Solutions for building structure and envelopes, interior construction and infrastructure

Coatings
Coatings solutions, surface treatments, decorative paints

Performance Materials
Polyurethanes, thermoplastics and foams

Sales



Factors influencing sales

Volumes	7%
Prices	(5%)
Portfolio	0%
Currencies	(1%)
Sales	**1%**

Income from operations before special items
(million €)

2016	**1,946**
2015	1,649

Change:
€297 million

How we create value – an example

Ultraviolet (UV) primer filler

New automotive refinish product for shorter processing time in the workshop

Value for BASF

Expected average sales growth per year through 2021 >19%

Repairing paint damage requires a series of time-consuming steps: For example, primer and filler need to be applied separately, and each needs time for drying and cooling. Our product eliminates one step for steel surfaces, as it serves as both primer and filler. It can also be cured with UVA light, which, unlike conventional methods, generates no heat and thus requires no cooling time. After the successful launch in 2016, we expect annual sales of this UV primer filler to grow by more than 19% on average from 2017 to 2021.

Value for our customers

Time saved in painting up to 65%

The new UV primer filler allows our customers to save up to 65% of their time in repairing paint damage, depending on the surface material and paint shop equipment. Especially smaller and medium-sized repairs can be conducted more economically. The use of UVA light is also considerably more energy-efficient than other curing methods and prevents plastic parts, like bumpers, from warping. We market the UV primer filler under our brand names Glasurit® and R-M®.

Strategy

- **Development of innovative products and technologies in close collaboration with our customers**
- **Focus on specialties and system solutions that allow our customers to stand out from the competition**

We use BASF's expertise as the world's leading chemical company to develop innovative products and technologies in close cooperation with our customers. Our aim is to find the best solution in terms of cost and functionality, helping our customers contribute to sustainable development. Our specialties and system solutions enable customers to stand out from the competition.

One focus of our strategy is the ongoing optimization of our product portfolio and structures according to different regional market requirements as well as trends in our customer industries. We are positioning ourselves to grow profitably and faster than the market.

We aim to secure our leading market position in Europe, to profitably expand our position in the North American market and to selectively extend our activities in the growth regions of Asia, South America, Eastern Europe and the Middle East.

At the end of 2016, we acquired surface technology provider Chemetall from Abermarle Corp., Charlotte, North Carolina, thereby enhancing our coatings portfolio and supporting our aim to grow profitably in innovative and solution-focused businesses closer to end users.

Products, customers and applications

Operating division	Products	Customer industries and applications
Catalysts	Automotive and process catalysts Battery materials Precious and base metal services	Automotive and chemical industries, refineries, battery manufacturers Solutions for the protection of air quality as well as the production of fuels, chemicals, plastics and battery materials
Construction Chemicals	Concrete admixtures, cement additives, underground construction solutions, flooring systems, sealants, solutions for the protection and repair of concrete, high-performance mortars and grouts, tile-laying systems, exterior insulation and finishing systems, expansion joints, wood protection	Cement and concrete producers, construction companies, craftspeople, builders' merchants Solutions for new building construction, maintenance, repair and renovation of commercial and residential buildings as well as infrastructure
Coatings	Coatings solutions for automotive and industrial applications, technology and system solutions for surface treatments, decorative paints	Automotive industry, body shops, steel industry, aviation, aluminum applications in the architecture and construction industries, household appliances, painting businesses and private consumers, wind power industry
Performance Materials	Engineering plastics, biodegradable plastics, standard foams, foam specialties, polyurethanes, epoxy systems for fiber-reinforced composites	Automotive manufacture, electrical engineering, packaging, games, sports and leisure, household, mechanical engineering, construction, medical technology, sanitation and water industry, solar thermal energy and photovoltaics, wind power industry

Capital expenditures

Location	Project	Startup
Caojing, China	Construction: chemical catalysts plant	2017
	Construction: automotive coatings plant	2017
Carmona, Philippines	Construction: concrete admixtures plant	2016
Chennai, India	Construction: plant for mobile emissions catalysts	2016
Colombo, Sri Lanka	Construction: concrete admixtures plant	2016
Gimcheon, South Korea	Construction: plant for Ultraform®	2018
Hanoi, Vietnam	Construction: concrete admixtures plant	2016
Klang, Malaysia	Capacity expansion: plant for flooring solutions	2016
Kolkata, India	Construction: concrete admixtures plant	2016
Rayong, Thailand	Construction: plant for mobile emissions catalysts	2018
Shanghai, China	Capacity expansion: plant for Cellasto®	2016
	Construction: technical competence center for automotive coatings	2018
Schwarzheide, Germany	Capacity expansion: compounding plant for Ultramid® and Ultradur®	2017
Totsuka, Japan	Optimization: coating production	2016
Yeosu, South Korea	Capacity expansion: plant for Ultrason®	2017

Segment data (million €)

		2016	2015	Change in %
Sales to third parties		18,732	18,523	1
Thereof	Catalysts	6,263	6,306	(1)
	Construction Chemicals	2,332	2,304	1
	Coatings	3,249	3,166	3
	Performance Materials	6,888	6,747	2
Intersegmental transfers		736	873	(16)
Sales including intersegmental transfers		19,468	19,396	0
Income from operations before depreciation and amortization (EBITDA)		2,906	2,228	30
EBITDA margin	%	15.5	12.0	–
Depreciation and amortization[1]		707	621	14
Income from operations (EBIT)		2,199	1,607	37
Special items		253	(42)	.
EBIT before special items		1,946	1,649	18
EBIT after cost of capital		813	96	.
Assets		17,359	13,341	30
Investments[2]		3,679	854	331
Research and development expenses		393	392	0

[1] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)

[2] Additions to intangible assets and property, plant and equipment (including acquisitions)

Functional Materials & Solutions segment

- **Sales grow by 1% to €18,732 million**
- **EBIT before special items increases by 18% to €1,946 million as a result of higher contributions from all divisions**

In the Functional Materials & Solutions segment, sales to third parties increased by €209 million to €18,732 million. By increasing volumes in all divisions, we were able to more than compensate for lower prices and mildly negative currency effects (volumes 7%, prices –5%, portfolio 0%, currencies –1%). The volumes growth was mainly attributable to higher demand for our products for the automotive industry. Business with the construction industry saw sales volumes at a high level overall.

Income from operations (EBIT) before special items grew by €297 million to €1,946 million compared with 2015. All divisions contributed to this considerable earnings increase, with particular support from higher margins in the Performance Materials division. Special income in 2016 especially pertained to the sale of the industrial coatings business as well as the divestiture of the business with polyolefin catalysts. EBIT rose by €592 million to €2,199 million.

For the Outlook for 2017, see page 122

Catalysts

- **Sales decline by 1% to €6,263 million, mainly due to lower prices**
- **EBIT before special items improves considerably, mostly through contribution from mobile emissions catalysts**

In the Catalysts division, sales to third parties declined in 2016 by €43 million to €6,263 million. This was predominantly the result of price decreases due to lower precious metal prices. Currency effects and the sale of our business with polyolefin catalysts had a negative impact on sales.

We achieved significant volumes growth, especially through increased volumes of mobile emissions catalysts. Greater demand for refinery catalysts and battery materials also contributed to this development. Lower volumes of chemical catalysts slowed this growth. In precious metal trading, sales declined by €52 million to €2,336 million due to lower prices.

Catalysts – Factors influencing sales

Volumes	9%
Prices	(8%)
Portfolio	(1%)
Currencies	(1%)
Sales	**(1%)**

Catalysts – Sales by region
(Location of customer)

1	Europe	42%
2	North America	29%
3	Asia Pacific	22%
4	South America, Africa, Middle East	7%

We considerably raised EBIT before special items year-on-year, mainly thanks to the higher contributions from the mobile emissions catalysts business. In addition, we were able to reduce fixed costs through strict cost discipline. Special charges resulted primarily from asset impairments and special income from the sale of the polyolefin catalysts business in June 2016.

Construction Chemicals

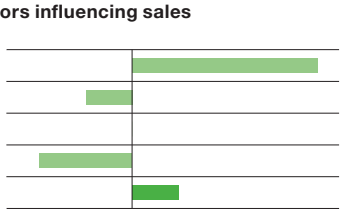
- **Sales rise by 1% to €2,332 million as a result of increased sales volumes**
- **Slight growth in EBIT before special items, thanks primarily to higher sales volumes**

In the Construction Chemicals division, sales to third parties reached €2,332 million, an increase of €28 million over 2015. Negative currency effects in all regions and lower prices overall were more than offset by higher sales volumes.

In Europe and North America, sales grew as a result of this volumes increase; prices remained stable. In the region South America, Africa, Middle East, lower volumes and negative currency effects were the main factors behind a drop in sales. Demand declined in Saudi Arabia especially, as the number of public construction projects fell due to low oil prices. Falling prices were largely responsible for reduced sales in Asia. We were able to increase volumes in the region.

Construction Chemicals – Factors influencing sales

Volumes	4%
Prices	(1%)
Portfolio	0%
Currencies	(2%)
Sales	**1%**



Construction Chemicals – Sales by region
(Location of customer)

1	Europe	35%
2	North America	32%
3	Asia Pacific	18%
4	South America, Africa, Middle East	15%

Income from operations before special items was slightly higher than the level of 2015, primarily as a result of volumes growth.

Coatings

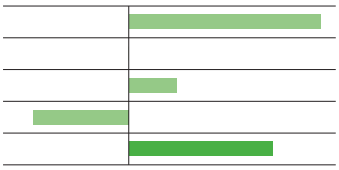
- **Sales increase by 3% to €3,249 million**
- **EBIT before special items considerably up, especially in automotive OEM coatings**

In the Coatings division, sales to third parties in 2016 grew by €83 million to €3,249 million. Higher sales volumes in North America and Asia were able to more than compensate for a volumes decline in South America. Prices remained stable overall; negative currency effects in all businesses had a dampening effect on sales.

Sales of automotive OEM coatings grew slightly thanks to higher volumes in North America and Asia. In the automotive refinish coatings business, we observed a slight sales decline as higher prices could only partly offset negative currency effects and slightly lower volumes. The slight sales growth in the industrial coatings business was attributable to higher volumes. Sales fell slightly in the decorative paints business in Brazil, despite significantly increased sales prices. This was mostly the result of overall weak demand as well as negative currency effects.

Coatings – Factors influencing sales

Volumes	4%
Prices	0%
Portfolio	1%
Currencies	(2%)
Sales	**3%**



Coatings – Sales by region
(Location of customer)

1	Europe	39%
2	North America	20%
3	Asia Pacific	24%
4	South America, Africa, Middle East	17%

We were able to raise EBIT before special items considerably in 2016, especially through the contribution from automotive OEM coatings. Special income came from the sale of the industrial coatings business in December 2016.

Since December 14, 2016, the Coatings division has included the Chemetall business, which was acquired from Albemarle. This has had no significant influence on the result for the reporting year 2016.

Performance Materials

- **Sales grow by 2% to €6,888 million through higher volumes**
- **EBIT before special items rises considerably due to stronger margins and specialties business**

The Performance Materials division raised its sales to third parties by €141 million to €6,888 million in 2016. This was largely thanks to sharp volumes growth, primarily in Asia and Europe. Prices fell as a result of lower raw material prices. Negative currency effects and portfolio measures additionally dampened sales.

Our businesses with the automotive industry developed positively thanks to significantly higher demand in Asia. We were especially able to achieve substantial volumes growth for polyurethane systems, engineering plastics and the special elastomer Cellasto®.

In the consumer goods industry, sales were slightly down, primarily on account of lower prices while volumes remained stable. We particularly achieved higher volumes of engineering plastics, thermoplastic polyurethanes and biopolymers, while demand ebbed slightly for polyurethane systems.

Sales to the construction sector also declined as a result of falling prices and the divestiture of our white expandable polystyrene (EPS) business in North and South America in March 2015. Volumes development was positive for polyurethane systems and functional foams.

Performance Materials – Factors influencing sales

Volumes	8%
Prices	(4%)
Portfolio	(1%)
Currencies	(1%)
Sales	**2%**

Performance Materials – Sales by region
(Location of customer)

1	Europe	47%
2	North America	23%
3	Asia Pacific	27%
4	South America, Africa, Middle East	3%

EBIT before special items considerably exceeded that of the previous year. Contributing significantly to this were higher margins due to lower raw material prices and the positive development of our high-margin specialties business. Despite higher production costs from new plant startups, including the capacity expansion for Cellasto® in Shanghai, China, we were able to reduce fixed costs compared with 2015.

Agricultural Solutions

The Agricultural Solutions segment consists of the Crop Protection division. We develop and produce innovative solutions for the improvement of crop health and yields, and market them worldwide.

Indications and sectors

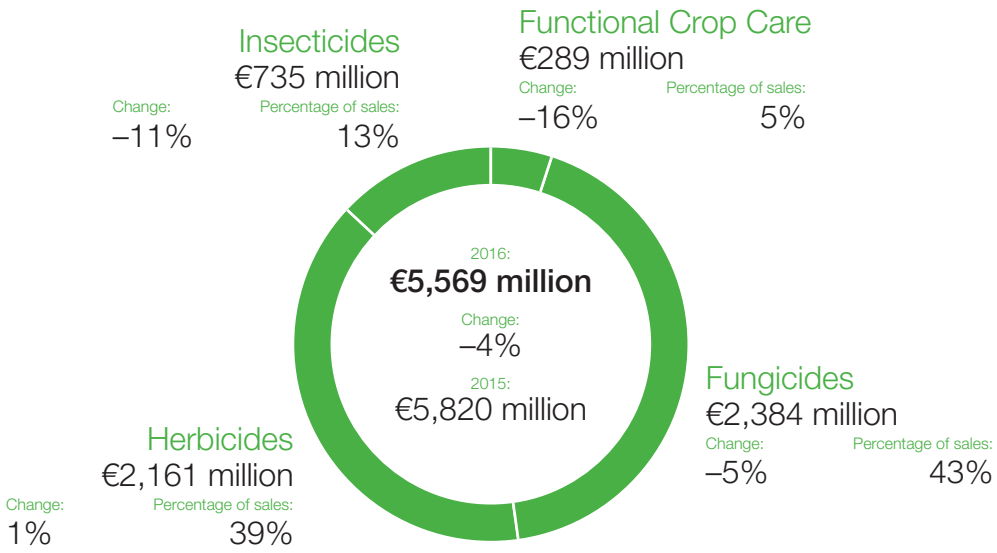
Fungicides
Protecting crops against harmful fungi

Herbicides
Reducing competition from weeds for water and nutrients

Insecticides
Combating insect pests in agriculture and beyond

Functional Crop Care
Biological crop protection, seed treatment, polymers and colorants

Sales



Factors influencing sales

Volumes	(2%)
Prices	0%
Portfolio	0%
Currencies	(2%)
Sales	**(4%)**

Income from operations before special items
(million €)

2016	**1,087**
2015	1,090

Change:
minus €3 million

How we create value – an example

Inscalis®

Innovative insecticide solution for use with numerous plants

Value for BASF

Peak sales potential

>€100 million

Inscalis® is an innovative solution of a new chemical class for combating piercing and sucking pests. Inscalis® will play an important role in BASF's insecticide portfolio, and be used for various plants in numerous countries starting at the end of the decade. We expect peak sales potential of more than €100 million.

Value for our customers and the environment

Advantages compared with conventional insecticides

3-fold

Inscalis® offers a three-fold advantage compared with conventional insecticides. Effective in low doses, it is also characterized by low toxicity for beneficial insects such as bees and an alternative mode of action for combating the most important pests. For farmers, this means greater flexibility in application and higher yields with better quality.

Strategy

- Helping to feed a growing world population
- Long-term innovation strategy ensures future growth
- Development of solutions that go beyond conventional crop protection

Our strategy is based on long-term market trends. A key challenge of the future will be to ensure sufficient food for a growing world population. This means that farmers around the world need to increase their yields – and yet the natural resources for doing so, such as water and arable land, are limited. We see it as our duty to provide farmers with professional support in producing more – and more nutritious – food as efficiently as possible.

We are committed to the responsible treatment of our products and the environment. We offer our customers a broad portfolio of integrated solutions and constantly invest in our development pipeline to create chemical and biological innovations in crop protection.

Our research and development activities range from solutions for guarding plants against fungi, insects and weeds, to seeds and soil management, to plant health. For example, the Functional Crop Care business unit not only provides products for improving seeds and innovations for better soil management, but also biological and chemical technologies that make plants better able to withstand stress factors like heat, cold and nutrient deficiency.

We are intensifying our investment in growth markets and continuing to expand our good position in our core markets. In collaboration with seed companies, we benefit from the technological competence of our crop protection research. In addition, we work together with external partners to be able to offer the best solutions for our customers. With our own projects, jointly with partners like John Deere and in collaboration with farmers, we drive the development of integrated IT applications for modern, sustainable agriculture. One example is the Maglis® digital platform developed by BASF. Since its launch at the beginning of 2016, the BASF team has used Maglis® to support farmers in collecting, interpreting and monitoring a range of agricultural data. This enables them to optimize management and make better decisions in cultivating and marketing crops.

Products, customers and applications

Indications and sectors	Applications	Example products
Fungicides	Protecting crops from harmful fungal infections; improving plant health	Boscalid, metiram, dimethomorph, Initium®, metrafenone, F 500®, Xemium®, AgCelence® (umbrella brand)
Herbicides	Reducing competition from weeds for water and nutrients	Kixor®, dicamba, pendimethalin, imazamox, topramezone, Clearfield® herbicide tolerance system, dimethenamid-P
Insecticides	Combating insect pests in agriculture and beyond, such as in the fields of public health, professional pest control and landscape maintenance	Fipronil, alpha-cypermethrin, chlorfenapyr, teflubenzuron, Nealta®, Termidor® to guard against termite infestation, Interceptor® mosquito nets to protect against malaria
Functional Crop Care	Products for plant health and increased yield potential that go beyond traditional crop protection, such as biological crop protection, seed treatments, polymers and colorants	Vizura®, Limus®, Systiva®, Vault® HP, Nodulator® PRO, Flo Rite®, Integral®, Serifel®

Investments

In 2016, we invested €205 million in property, plant and equipment. Most of this investment amount is attributable to the expansion of dicamba production capacity in Beaumont, Texas. We also increased capacities for the fungicide Xemium® and enlarged a formulation plant for fungicides in Tarragona, Spain. Furthermore, we are continuing to invest in innovative solutions that go beyond classic crop protection. One example from the area of Functional Crop Care is our new research and development center for biological crop protection and seed solutions in Limburgerhof, Germany, which combines expertise in chemical and biological solutions. In order to continue meeting the ongoing high demand for our innovative products in the future, we will invest around €840 million in developing and expanding our infrastructure and in our production and formulation capacities for active ingredients between 2017 and 2021.

Plant biotechnology at BASF

BASF's activities in the field of plant biotechnology are part of the Bioscience Research technology platform. Research and development expenses, sales, earnings and all other data are not included in the Agricultural Solutions segment; they are reported in Other.

With our network of research sites, we help farmers meet the growing demand for increased agricultural productivity as well as better nutrition. As part of the regular review of our portfolio, we focused our research activities in 2016 on projects with the highest business and technological potential. These projects included the development of crops characterized by higher yields and stress resistance, herbicide tolerance, or resistance against certain diseases. Part of this realignment involved adapting our site structure in North America and Europe; around 350 of approximately 750 positions were cut. Our product marketing takes place in part together with leading seed providers.

Segment data (million €)

		2016	2015	Change in %
Sales to third parties		5,569	5,820	(4)
Intersegmental transfers		33	28	18
Sales including intersegmental transfers		5,602	5,848	(4)
Income from operations before depreciation and amortization (EBITDA)		1,305	1,321	(1)
EBITDA margin	%	23.4	22.7	–
Depreciation and amortization[1]		268	238	13
Income from operations (EBIT)		1,037	1,083	(4)
Special items		(50)	(7)	.
EBIT before special items		1,087	1,090	0
EBIT after cost of capital		172	154	12
Assets		8,899	8,435	6
Investments[2]		266	402	(34)
Research and development expenses		489	514	(5)

[1] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)
[2] Additions to intangible assets and property, plant and equipment (including acquisitions)

Agricultural Solutions segment

- **Lower volumes and currency effects lead to 4% decline in sales to €5,569 million**
- **At €1,087 million, EBIT before special items matches prior-year level**

In the Agricultural Solutions segment, sales to third parties in 2016 fell by €251 million to €5,569 million as a result of lower sales volumes and negative currency effects. The challenging market environment for crop protection products particularly dampened demand for insecticides in South America and for fungicides in Europe. Prices matched the level of 2015 (volumes –2%, prices 0%, currencies –2%).

In **Europe**, sales declined by €149 million to €1,958 million. This was mainly attributable to weaker demand for fungicides in the first half of the year. Especially in Germany and Poland, volumes fell as a result of unfavorable weather conditions and our customers' high inventory levels. Price increases, primarily in central and eastern Europe, including Russia, were unable to offset the lower volumes and negative currency effects.

Sales in **North America** decreased by €69 million to €1,801 million, predominantly because of lower prices, especially for fungicides in the United States. Higher demand for fungicides and insecticides in the United States and for herbicides in Canada helped support volumes development.

At €549 million, sales in **Asia** exceeded the previous year's level by €24 million. We were able to raise sales volumes in all indications, largely driven by substantially higher demand for herbicides in India and the overall positive volumes development in Indonesia and Australia. Currency effects slightly dampened sales.

In **South America**, sales fell by €57 million to €1,261 million, basically due to lower insecticide volumes in Brazil. This was primarily attributable to our customers' high inventory levels and critical economic situation, as well as the shrinking market for insecticides in the region. Price increases were unable to fully compensate for the drop in volumes.

Strict cost management enabled us to reduce fixed costs in the Agricultural Solutions segment. Thanks to this development, income from operations (EBIT) before special items matched the previous year's level at €1,087 million despite the sales decline. Due to special charges from the optimization of our production structure, EBIT decreased by €46 million to €1,037 million.

For the Outlook for 2017, see page 122

Crop Protection – Sales by region
(Location of customer)

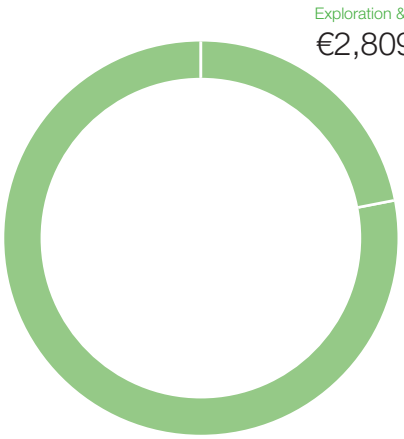
1	Europe	35%
2	North America	32%
3	Asia Pacific	10%
4	South America, Africa, Middle East	23%

Oil & Gas

BASF's oil and gas activities are bundled in the Wintershall Group. We focus on exploration and production in oil and gas-rich regions in Europe, North Africa, Russia, South America and the Middle East – focus regions in which Wintershall has a high level of regional and technological expertise. We are also active in the transport of natural gas in Europe with our Russian partner Gazprom.

Sales

2015:
€12,998 million



Change:
–79%

2016:
€2,768 million

Factors influencing sales

Volumes	3%	
Prices/currencies	(3%)	
Portfolio	(79%)	
Sales	**(79%)**	

Income from operations before special items
(million €)

2016	**517**	
2015	1,366	

Change:
minus €849 million

How we create value – an example

Optimized oil treatment and storage

Reconstruction and process optimization of tank farm in Barnstorf

Value for BASF

Reduction of investment costs around 25%

An innovative construction concept enabled us to save around 25% in investment costs while reconstructing our tank farm in Barnstorf, Germany. Typical construction methods would have meant replacing the previous twelve crude oil and water tanks with five new ones, and building individual facilities for separating the oil from associated substances and storing it. Because our new tanks allow both at the same time, four new tanks were sufficient. These can be employed more flexibly and economically and ensure lower maintenance costs.

Value for the environment

Reduction of annual energy demand around 95%

The new, optimized tanks are especially safe and do not require large concrete containment systems underneath. Instead, the oil tanks feature an accessible annular gap, while the water tanks are constructed with vacuum-monitored double walls. This increases their energy efficiency: Thanks to the thermally insulating air layer in the annular gap and the especially well insulated double floor, the amount of energy needed to heat the oil tanks has been reduced by around 95% over the course of a year.

Strategy

- **Growth through exploration, acquisitions, strategic partnerships and technological expertise**
- **Contribution to securing Europe's natural gas supply**

In the future, crude oil and natural gas will continue to contribute significantly toward covering the rising energy demand of a growing world population. That is why we invest in the exploration and production of oil and gas, primarily in our core regions Europe, North Africa, Russia and South America. We want to establish the Middle East as another core region in our portfolio.

Selected collaborations and strategic partnerships, innovative technologies and the responsible development and production of hydrocarbons all form the basis of our growth-oriented strategy. Through the continuous optimization of our cost structure and portfolio of oil and gas activities, we ensure our future competitive viability, even in times when oil and gas prices are low. Measured by production volumes, gas activities comprised around 70% of our portfolio.

Handling hydrocarbons in a responsible manner demands special measures for the protection of people and the environment. We therefore carefully assess the potential effects of every project before we begin. Together with experts, contractors and relevant stakeholders, we develop methods and carry out measures for using resources even more efficiently and minimizing impact on the environment. This includes acting in accordance with international agreements, legal requirements and our own, self-imposed high standards.

Wintershall's natural gas trading and storage activities were transferred to Gazprom with the swap of assets of equal value completed in September 2015, and are no longer part of our portfolio. Our cooperation with Gazprom in the natural gas transport business continues unaltered. With western Europe's long-term demand for natural gas steadily on the rise, while its local production simultaneously decreases, securing sufficient imports is gaining in importance.

Exploration & Production

- **Active portfolio management, including expansion of our position in Norway**

Europe: The Mittelplate field off the North Sea coast is the cornerstone of our crude oil production in Germany. We own a 50% share in the next development phase of this largest known oil deposit in the country. We are expanding production in Emlichheim by drilling twelve new wells, two of which started producing between September and December 2016. Wintershall is assessing a redevelopment of the Suderbruch oilfield with two exploration wells. We continued the field test for increasing recovery rates using the biopolymer Schizophyllan at the Bockstedt oilfield.

In Norway, we were able to expand annual production to 80,000 barrels of oil equivalent (BOE) per day. The further development of fields in which we hold a stake included the installation of two subsea tiebacks in the Norwegian Sea for the Wintershall-operated Maria field in the summer of 2016. These were connected at a depth of 300 meters to the nearby platforms Kristin, Heidrun and Åsgard B, enabling us to use the existing infrastructure for production in the Maria field, in which Wintershall holds a 50% share. Wintershall also has shares in the Ivar Aasen offshore platform installed and started up in 2016. In January 2016, Wintershall obtained shares in seven new exploration licenses on the Norwegian continental shelf from the Norwegian Ministry of Petroleum and Energy. Wintershall will take over operatorship of four licenses.

As part of ongoing portfolio optimization, Wintershall Norge AS agreed with Statoil Petroleum AS (both based in Stavanger, Norway) on the sale of its 25% share in the Byrding field on the Norwegian continental shelf. The field, also known by its previous name, Astero, was discovered in 2005 and is located in the Troll/Fram region of the North Sea. Wintershall Norge furthermore divested its 10% share in the Yme license – also on the Norwegian continental shelf – to OKEA AS, an oil company based in Trondheim, Norway.

In Denmark, we are continuing the transition from the development to the production phase of the Ravn field. The crude oil is to be transported through a subsea pipeline from an unmanned production platform to the A6-A platform 18 kilometers away in the German North Sea. Ravn will be the first field in Denmark that Wintershall Noordzee B.V. (Rijswijk, Norway) transfers to the production phase as operator. The Danish energy ministry granted Wintershall three new licenses in the Danish North Sea at the beginning of 2016. Wintershall is the operator in all three licenses.

Russia: The Yuzhno Russkoye natural gas field in western Siberia, in which we have a 35% economic interest, has been operating at plateau production since 2009. We hold a 50% stake in the development of Block IA of the Achimov formation in the Urengoy field in western Siberia. The gradual development of this field was continued and 78 wells were producing at the end of 2016. We will develop blocks IV and V of the Achimov formation together with Gazprom.

North Africa / Middle East: In Libya, we are the operator of eight oilfields in the onshore concessions 96 and 97. Due to difficult political conditions, we were only able to start producing in concession 96 again on September 16, 2016, at a low level of 35,000 BOE a day. No production took place in concession 97 in 2016. At the Al Jurf oilfield off the coast of Libya, in which we have a stake, operations could be continued without interruption.

In Abu Dhabi, we began drilling our second appraisal well as operator in the development of the Shuwaihat sour gas field in November 2016. It is Wintershall's first offshore exploration well in the Shuwaihat field.

Wintershall signed a memorandum of understanding in April 2016 with the National Iranian Oil Company on a potential collaboration.

South America: We hold shares in a total of fifteen onshore and offshore fields in Argentina. In February 2016, the offshore field Vega Pléyade, operated by Total Austral S.A., began production off the coast of Tierra del Fuego. We drilled additional wells as an operator in the Vaca Muerta shale formation in the Neuquén province, as stipulated in the joint operation agreement between Wintershall Energía S.A. (Buenos Aires, Argentina) and Gas y Petróleo del Neuquén S.A. (Neuquén, Argentina).

For information on current reserves, see pages 88 and 223

Capital expenditures

Location	Project	Plateau/peak production per year[1]	Startup
Argentina	Development of Vega-Pléyade field	9 million BOE	2016
North Sea, Norway	Development of Maria field	7 million BOE	2018
	Development of Edvard Grieg field	5 million BOE	2015/2018[2]
	Development of Aasta Hansteen field	12 million BOE	2018
Siberia, Russia	Achimgaz, development of Achimov horizon in Urengoy natural gas and condensate field	43 million BOE	2008/2020[2]

[1] BASF's share in barrels of oil equivalent (BOE)

[2] Year completed

Natural Gas Transport

- **Mostly regulated business with stable conditions**
- **Joint activities with Gazprom**

The highly regulated natural gas transport sector is characterized by stable conditions and yields based on approved costs and tariffs. Our organizational structure allows us to meet the unbundling requirements set down by the German Energy Act: As a holding company for the German subsidiaries in natural gas transport, WIGA Transport Beteiligungs-GmbH & Co. KG (WIGA) mainly fulfills a reporting and financing capacity. GASCADE Gastransport GmbH, OPAL Gastransport GmbH & Co. KG, and NEL Gastransport GmbH all act as independent companies under the umbrella of the holding company.

The companies under the WIGA umbrella operate a 3,300-kilometer long-distance network that includes the pipeline links to the Nord Stream Pipeline, the Baltic Sea Pipeline Link (OPAL) and the North European Gas Pipeline (NEL).

We hold a 15.5% share in the Nord Stream Pipeline through Nord Stream AG, based in Zug, Switzerland, which is accounted for in the BASF Group's financial statements using the equity method. Other shareholders are Gazprom (51%) and E.ON (15.5%), as well as N.V. Nederlandse Gasunie and ENGIE (9% each). With a total capacity of 55 billion cubic meters of natural gas per year, this pipeline, which stretches from Russia to the German coast over the Baltic Sea, helps shore up supply security in Europe.

The contracts signed in 2015 to join the companies involved in the Nord Stream 2 AG were canceled in September 2016 after withdrawal of the antitrust clearance application in Poland. BASF continues to firmly believe in the significance of this project for Europe, and is evaluating possibilities to support the endeavor. The project is being developed by Nord Stream 2 AG, a project company in which Gazprom holds 100% of the shares.

Segment data[1] (million €)

		2016	2015	Change in %
Sales to third parties		2,768	12,998	(79)
Intersegmental transfers		331	766	(57)
Sales including intersegmental transfers		3,099	13,764	(77)
Income from operations before depreciation and amortization (EBITDA)		1,596	2,587	(38)
EBITDA margin	%	57.7	19.9	–
Depreciation and amortization[2]		1,097	1,515	(28)
Income from operations (EBIT)		499	1,072	(53)
Special items		(18)	(294)	94
EBIT before special items		517	1,366	(62)
EBIT after cost of capital		(744)	(443)	(68)
Assets		12,829	12,373	4
Investments[3]		1,115	1,823	(39)
Research and development expenses		39	50	(22)
Exploration expenses		94	195	(52)
Net income[4]		362	1,050	(66)

[1] Supplementary information on the Oil & Gas segment can be found from page 221 onward.
[2] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)
[3] Additions to intangible assets and property, plant and equipment (including acquisitions)
[4] More on this figure can be found in the reconciliation reporting for Oil & Gas in the Notes to the Consolidated Financial Statements on page 179.

Oil & Gas segment

■ **Sales decline by 79% and EBIT before special items down by 62% due to discontinuation of contributions from gas trading and storage business as well as to lower oil and gas prices**

In the Oil & Gas segment, sales to third parties decreased by €10,230 million to €2,768 million year-on-year (volumes 3%, prices/currencies –3%, portfolio –79%). Owing to the asset swap with Gazprom completed at the end of September 2015, contributions from the natural gas trading and storage business and from Wintershall Noordzee B.V. ceased as of the fourth quarter of 2015. These activities had contributed €10.1 billion to sales in 2015. In the continuing oil and gas business, we raised volumes by 15% compared with 2015, while price and currency effects came out to minus 15%. The price of a barrel of Brent blend crude oil averaged $44 in 2016 (2015: $52). Gas prices on European spot markets dropped 29%, also a sharp fall compared with the previous year. Both oil and gas prices recovered significantly toward the end of 2016 as compared with the beginning of the year.

Oil & Gas – Sales by region
(Location of customer)

1	Europe	80%
2	North America	0%
3	Asia Pacific	0%
4	South America, Africa, Middle East	20%

Income from operations (EBIT) before special items declined by €849 million to €517 million in 2016. This was primarily the result of falling oil and gas prices, in addition to the divestiture of our gas trading and storage business to Gazprom. The activities transferred to Gazprom had contributed around €260 million to EBIT before special items in 2015. In addition, as we had expected, the earnings contribution from our share in the Yuzhno Russkoye natural gas field was lower: A contractual agreement with our partner Gazprom stipulated that the excess amounts received over previous years be compensated in 2016. Positive effects came from comprehensive measures aimed at optimizing exploration and technology projects as well as the successful implementation of operational cost-saving measures. EBIT declined by €573 million to €499 million. Net income declined by €688 million to €362 million.

For the Outlook for 2017, see page 123

We increased our crude oil and natural gas production by 12 million barrels of oil equivalent (BOE) to 165 million BOE. In the search for new crude oil and natural gas deposits, we finished drilling a total of 14 exploration and appraisal wells in 2016, of which 9 were successful. Our proven crude oil and natural gas reserves fell by 7% compared with the end of 2015, to 1,622 million BOE. We replenished 26% of the volumes produced in 2016. The reserve-to-production ratio is around 10 years (2015: 11 years). This is based on Wintershall's production in 2016 and refers to the reserves at year-end.

Other

Data for Other[1] (million €)

	2016	2015	Change in %
Sales	2,018	2,790	(28)
Income from operations before depreciation and amortization (EBITDA)	(972)	(866)	(12)
Amortization and depreciation[2]	119	119	–
Income from operations (EBIT)	(1,091)	(985)	(11)
Special items	(41)	(97)	58
EBIT before special items	(1,050)	(888)	(18)
Assets[3]	9,374	9,632	(3)
Investments[4]	121	111	9
Research and development expenses	398	407	(2)

[1] Information on the composition of Other can be found in the Notes to the Consolidated Financial Statements from page 178 onward.

[2] Amortization of intangible assets and depreciation of property, plant and equipment (including impairments and write-ups)

[3] Contains assets of businesses recognized under Other as well as reconciliation to assets of the BASF Group

[4] Additions to intangible assets and property, plant and equipment (including acquisitions)

Sales in Other fell by €772 million to €2,018 million compared with 2015. Lower prices and volumes in the raw materials trading business were primarily responsible, along with the expiration of supply contracts in connection with the disposal of our share in the Ellba Eastern Private Ltd. joint operation in Singapore at the end of 2014.

Income from operations before special items in Other declined by €162 million to minus €1,050 million. This was largely attributable to valuation effects for our long-term incentive program. Positive currency effects helped slow the decline.

Regional results

Regions (million €)

	Sales by location of company			Sales by location of customer			Income from operations by location of company[1]		
	2016	2015	Change in %	2016	2015	Change in %	2016	2015	Change in %
Europe	27,221	38,675	(30)	26,039	36,897	(29)	3,632	4,174	(13)
Thereof Germany	17,540	28,229	(38)	7,412	13,483	(45)	1,582	2,303	(31)
North America	14,682	15,665	(6)	14,042	15,390	(9)	1,113	1,295	(14)
Asia Pacific	11,512	11,712	(2)	12,165	12,334	(1)	1,098	445	147
South America, Africa, Middle East	4,135	4,397	(6)	5,304	5,828	(9)	432	334	29
	57,550	**70,449**	**(18)**	**57,550**	**70,449**	**(18)**	**6,275**	**6,248**	**0**

[1] For purposes of increased clarity in the presentation of regional results, income from operations (EBIT) before special items was replaced by EBIT, a figure directly derivable from the Consolidated Financial Statements, as of the second quarter of 2016. Neither EBIT before special items by region nor EBIT by region is drawn upon for internal management decisions.

Europe

- **At €27,221 million, sales down by 30% compared with previous year**
- **Additional investments initiated at Ludwigshafen Verbund site**

In 2016, sales at companies headquartered in the region Europe amounted to €27,221 million, 30% below the previous year's level. This was mainly attributable to the considerable decline in sales in the Oil & Gas segment following the disposal of our gas trading and storage business to Gazprom in September 2015.

Despite strong volumes growth, the Chemicals segment posted a considerable drop in sales due to lower sales prices brought about by decreased raw material prices. Sales in the Performance Products segment declined slightly, largely on account of lower prices and the disposal of portions of our pharmaceutical ingredients and services business. In the Functional Materials & Solutions segment, significantly higher volumes were able to more than compensate for price declines, resulting in a sales increase. Despite increased sales prices, a combination of lower volumes and negative currency effects resulted in a considerable drop in sales in the Agricultural Solutions segment. Sales declined considerably in Other.

Income from operations (EBIT) fell by 13% year-on-year to €3,632 million, primarily owing to the decrease in the Oil & Gas segment. Contributions were also smaller from the Chemicals and Agricultural Solutions segments, as well as from Other. The Performance Products and Functional Materials & Solutions segments, however, raised their EBIT.

We are strengthening our market position through further investments at the Ludwigshafen Verbund site, such as the replacement of our acetylene plant with a state-of-the-art, highly efficient production facility, and the expansion of capacities for resins.

North America

- **Sales down 6% from the previous year to €14,682 million**
- **Ongoing investments in production plants, such as for ammonia and herbicides**

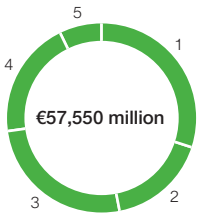
Sales at companies headquartered in North America were down by 6% compared with 2015 in both euro and local currency terms, amounting to €14,682 million. This was largely due to decreased sales prices brought about by lower raw material prices, especially in the Chemicals segment. Sales volumes remained stable overall. Rising volumes in the Functional Materials & Solutions segment were able to offset the lower volumes in the Chemicals and Performance Products segments.

EBIT fell 14% to €1,113 million compared with the previous year. Significantly increased contributions from the Performance Products and Functional Materials & Solutions segments were only partially able to compensate for the sales and margin-related earnings decline in the Chemicals segment.

In this region, we continue to focus on innovation, attractive market segments and cross-business initiatives in order to grow profitably. At the same time, we ares increasing our operational excellence through continuous improvement. Investments in new production facilities form the basis for future growth. For example, we are building a new ammonia plant in Freeport, Texas, with Yara; expanding production capacities for our dicamba and dimethenamid-P herbicides in Beaumont, Texas; and modifying the plant in Pasadena, Texas, to produce our Palatinol® DOTP plasticizer so we can meet growing demand in North America. Beyond that, we aim to gradually expand the production capacity of MDI at our Geismar, Louisiana, Verbund site.

Sales by region
(Location of company)

1	Germany	30%
2	Europe (excl. Germany)	17%
3	North America	26%
4	Asia Pacific	20%
5	South America, Africa, Middle East	7%



Income from operations by region
(Location of company)

1	Germany	25%
2	Europe (excl. Germany)	33%
3	North America	18%
4	Asia Pacific	17%
5	South America, Africa, Middle East	7%

Asia Pacific

- **Sales 2% below 2015 level at €11,512 million**
- **Local production expanded through new plants in China and Malaysia**

At €11,512 million, sales at companies headquartered in the Asia Pacific region fell by 2% in 2016; in local currency terms, sales matched the level of the previous year.

Low oil and raw material prices weighed on sales, especially at the beginning of the year. While sales prices did substantially recover over the year, they still showed an overall decline for 2016. Sales were also dampened by negative currency effects and portfolio measures such as the sale of the textile chemicals business in June 2015, parts of our pharmaceutical ingredients and services business in September 2015, and the polyolefin catalysts business in July 2016. Sales in Other decreased considerably. Volumes growth of around 5% in this region was only partially able to offset these effects. We raised sales volumes in all segments.

EBIT in the region grew by 147% to €1,098 million. This was mainly due to higher volumes and margins in all segments. Through strict cost management, fixed costs rose only slightly compared with the previous year, despite the startup of several new plants.

As part of our regional strategy, we want to further increase the proportion of sales from local production in Asia Pacific in the years ahead. We once again made progress toward this goal: In Korla, China, we started up a polytetrahydrofuran (PolyTHF®) plant with our partner Markor, and in Shanghai, China, we completed the modification of the polyvinylpyrrolidone plant. In Kuantan, Malaysia, we and our partner PETRONAS started up a production plant for 2-ethylhexanoic acid and finished construction of the new aroma chemicals complex. Further endeavors, such as catalyst production plants in Caojing, China, and Rayong, Thailand, are currently under construction and progressing on schedule.

South America, Africa, Middle East

- **Sales down 6% to €4,135 million**
- **Production plant for 2-ethylhexyl acrylate now in operation in Guaratinguetá, Brazil**

At €4,135 million, sales for companies headquartered in South America, Africa, Middle East fell 6% below the level of 2015. In local currency terms, sales were up by 2%.

Gross domestic product shrank in South America primarily as a consequence of the continuing recession in Brazil as well as the economic environment and structural reforms in Argentina. Our sales declined slightly under these conditions. Price increases enabled us to partly offset negative currency effects, especially from the depreciation of the Argentinian peso, and weaker sales volumes. Sales declined in the chemicals[1] and crop protection businesses but rose in the Oil & Gas segment.

Companies in Africa and in the Middle East posted a considerable sales decrease owing to currency effects and downward pressure on prices. The drop in sales in South Africa was primarily due to the depreciation of the rand; this particularly affected the Functional Materials & Solutions segment. In the Middle East, a slump in selling prices affected by falling raw material prices negatively impacted our business in the Performance Products and Functional Materials & Solutions segments.

EBIT grew by 29% to €432 million, supported especially by the higher contribution from the chemicals business.

In South America in 2016, we continued implementing a series of structural measures that increase our productivity and sharpen the focus on our customers' needs. We have expanded our production in Guaratinguetá, Brazil, with the startup of a 2-ethylhexyl acrylate plant that will allow us to tap into the region's growing demand.

[1] Our chemicals business comprises the Chemicals, Performance Products and Functional Materials & Solutions segments.

Responsibility along the value chain
Suppliers

Our objective is to secure competitive advantages for BASF through professional procurement structures. Our suppliers are an important element of our value chain. Together with them, we aim to create value and minimize risks.

Strategy

With our sustainability-oriented supply chain management, we contribute to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our specifications. We count on reliable supply relationships and want to make our suppliers' contribution to sustainable development transparent. In order to achieve this, we set ourselves an ambitious goal: By 2020, we aim to evaluate the sustainability performance of 70% of the BASF Group's relevant suppliers[1] pursuant to our risk-based approach and develop action plans for any necessary improvements. The proportion of evaluated relevant suppliers was at 32% by the end of 2016. Furthermore, our Procurement competence center supports BASF's business units in developing solutions to stand out from the competition in addressing customers' market-specific requirements.

2020 Goal

Percentage of relevant suppliers evaluated for their sustainability performance 70%

Worldwide procurement

From our suppliers, we obtain raw materials, technical goods, and services – from technical to logistics and building facility services. BASF acquired raw materials, goods and services for our own production totaling approximately €34 billion in value from more than 70,000 suppliers around the world in 2016. Around 90% of this was locally sourced. With regard to our suppliers, there were no substantial changes in our value chain in 2016.

What we expect from our suppliers

- Global Supplier Code of Conduct
- Country-specific risk analysis forms basis of new supplier selection

Both new and existing suppliers are selected and evaluated not only on the basis of economic criteria, but also on environmental, social and corporate governance standards. Our Supplier Code of Conduct is founded on internationally recognized guidelines, such as the principles of the United Nations' Global Compact, the International Labor Organization (ILO) conventions and the topic areas of the Responsible Care Initiative. The Code of Conduct covers compliance with human rights, labor and social standards, and antidiscrimination and anticorruption policies in addition to protecting the environment. The Code is available in 26 languages.

A country-based risk analysis forms the basis of our selection process for new suppliers. As a result of the country-related risks identified in South America and Asia, we queried around 2,100 suppliers in 2016 on their commitment to the values of our Supplier Code of Conduct. We moreover provided training to a total of 267 suppliers with an elevated sustainability risk, especially in Asia and South America, in 2016.

In addition, we instructed 292 procurement employees on sustainability-oriented supplier management. These are ways in which potential supply chain risks can be identified and minimized together with our suppliers.

Evaluating our suppliers

- "Together for Sustainability" initiative aims to harmonize and standardize supplier assessments and audits
- 104 raw material supplier sites audited

BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. With the help of TfS, we promote sustainability in the supply chain. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. The evaluation process is simplified for both suppliers and TfS member companies by a globally uniform questionnaire. The initiative's members conducted a total of 1,773 sustainability assessments and 241 audits in 2016. Membership has tripled since the initiative was founded; there were 19 members in 2016.

[1] We define relevant suppliers as those showing an elevated sustainability risk potential as identified by risk matrices and with respect to corresponding country risks. Our suppliers are evaluated based on risk due to the size and scale of our supplier portfolio.

We conducted a Supplier Day in Mumbai, India, in 2016 as part of the TfS initiative. TfS also provided training to suppliers at the annual China Petroleum and Chemical Industry Federation (CPCIF) Conference in Shanghai, China, in order to strengthen awareness for sustainability in the region.

Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. We drive these processes through a sustainability-oriented IT tool. Suppliers with an elevated sustainability risk are identified using risk matrices. Furthermore, our purchasers indicate the suppliers for whom they see a potentially elevated sustainability risk. We additionally check various information sources to see if any suppliers have been observed in connection with negative sustainability incidents. Based on these analyses, we audited a total of 104 raw material supplier sites on sustainability standards and had 551 sustainability assessments conducted by an external service provider in 2016.

If we identify potential for improvement, we support suppliers in developing measures to fulfill our standards. We conduct another review according to a defined timeframe based on the sustainability risk measured. If the weak points discovered were particularly severe and we are unable to confirm any improvement, we reserve the right to terminate the business relationship. This occurred in two cases in 2016. We use this approach to evaluate suppliers with an elevated sustainability risk at least every five years. The approach itself is reviewed every two years to identify possibilities for optimization.

For more on "Together for Sustainability," see basf.com/en/together-for-sustainability

Supplier training

In 2016, we continued our collaborations in China and Brazil to instruct suppliers on sustainability standards. We have developed a training program for China together with the East China University of Science and Technology in Shanghai. In Brazil, we are pursuing the same approach together with the Espaço Eco® Foundation. Through these cooperations, 267 suppliers received training in 2016.

Audit results

Our audits have revealed some deviations with respect to working hours and payment of the minimum wage, especially in China. Here, we have called for improvements on the part of our suppliers. None of our 2016 audits identified instances of child labor. For the suppliers we reviewed, persons under 18 were excluded from overtime and dangerous work; we found one case of unauthorized night work. We did not find any incidences of forced labor in 2016.

In August 2012, during an extended mining strike involving workers of the London-based platinum supplier Lonmin Plc in Marikana, South Africa, the conflict escalated and culminated in a violent confrontation between mine workers and armed South African police. Lonmin mine workers were among the fatalities. In June 2015, the Farlam Report commissioned by the South African government was released on the incidents.[1]

BASF undertook a thorough examination of the issues raised. We intensified our regular exchange with both Lonmin and with local stakeholders, such as leading industry and human rights representatives. Discussions included Lonmin's measures for improving the living conditions of its workers.

At the end of 2015, BASF had an Environment, Social, Governance audit conducted at Lonmin by an internationally recognized audit firm, in accordance with enhanced TfS requirements. In the process, deficits were detected in areas such as the grievance process for workers and residents, as well as safety and security. Based on the results, BASF enhanced the questionnaire and expanded it with a view to industry-specific challenges in the mining sector. A follow-up audit conducted in January 2017 is currently being evaluated. We will use our sphere of influence within the platinum value chain to create awareness for industry-specific challenges and develop approaches for solutions together.

For more on suppliers, see basf.com/suppliers

[1] The Farlam Report found that the actions of the South African police forces and the striking miners were the primary cause of the violence. The Report also questioned whether Lonmin had used its best endeavors to prevent the incident.

Raw materials

Responsible resource management is an integral part of our strategy. It is applied within the company through our Verbund concept, our innovative products and the use of renewable raw materials. In the search for alternative raw materials, we employ solutions that contribute to sustainability.

Strategy

The Verbund system is an important component of our resource efficiency strategy: The by-products of one plant often serve as feedstock elsewhere, thus helping us to use raw materials more efficiently. In 2016, BASF purchased a total of around 30,000 different raw materials from more than 6,000 suppliers. Some of our most important raw materials are naphtha, natural gas, methanol, ammonia and benzene. In addition to fossil resources, we also employ renewable raw materials. We use these to manufacture products that either cannot be made with fossil resources, or only at significantly greater expense. Renewable raw materials also give us the opportunity to expand our raw material basis. Depending on the application, the better solution can be fossil or renewable raw materials; renewable raw materials are not per se sustainable, but can contribute to sustainability by, for example, reducing greenhouse gas emissions.

Renewable resources

- Joint venture with Avantium
- Numerous projects to improve sustainability along the value chain

In 2016, around 5.4% of the raw materials we purchased worldwide were from renewable resources. To make the use of these materials more competitive, we work on product innovations based on renewable raw materials as well as on enhancing production processes in reaction technology and preparation.

We also further established our "biomass balance" approach on the market in 2016. The goal here is to replace natural gas and naphtha at the beginning of the value chain with biogas and bio-naphtha from certified sustainable production. Should a customer select a biomass-balanced product, the proportion of renewable feedstock to be used is calculated based on the formulation. The calculation is certified by an independent third party (TÜV Süd). Our Verbund production ensures that the properties and quality of all end products remain unchanged and that our customers can use them as usual. This method has already been applied for more than 40 BASF products – for example, for superabsorbents, dispersions, plastics such as polyamides and polyurethanes, and for intermediates available on the market as "drop-in products." These can be used in place of previously employed products in the production process without having to change the process itself.

Together with Avantium, BASF established the Amsterdam-based Synvina C.V. joint venture in 2016 to produce and market furandicarboxylic acid (FDCA) from renewable resources. FDCA is a key chemical component of polyethylenefuranoate (PEF), which will also be marketed by the joint venture. PEF has a broad application profile and is especially suitable for producing certain food packaging materials, such as films and plastic bottles. Compared with conventional plastics, PEF demonstrates higher barrier properties for gases like carbon dioxide and oxygen, leading to a longer shelf life for packaged products. In addition, its higher degree of mechanical strength allows for thinner – and therefore lighter – packaging. We also offer our customers 1,4-butanediol (BDO) on a commercial scale using sugars as a renewable feedstock, based on a licensing agreement with the company Genomatica Inc., headquartered in San Diego, California. We use BDO to produce bio-based polytetrahydrofuran 1000 (PolyTHF® 1000), which primarily serves as a chemical component in thermoplastic polyurethane (TPU), an ingredient used to manufacture skis and roller skates, shoe soles, dashboard films in the automotive industry, and other products.

Palm oil, palm kernel oil, and their derivatives are some of our most important renewable raw materials. We want to ensure that the raw materials stem from sustainable, certified sources and actively support the Roundtable on Sustainable Palm Oil (RSPO). Based on the voluntary commitment to sustainably source palm oil products that we expanded in 2015, we increased our purchase of certified palm kernel oil by around 32,000 metric tons to 158,000 metric tons in 2016. In addition, our new BASF Palm Sourcing Policy addresses the requirements for protecting and preserving forests and peatland, along with the involvement of local communities in decision-making processes, and we began its implementation together with our suppliers in 2016.

We have intensified our dialog with partners along the value chain. In order to involve smallholder farmers and improve their living conditions, BASF and Henkel are working together with the development organization Solidaridad to provide training for around 5,500 farmers in Indonesia. BASF also advanced the RSPO certification of its sites for cosmetic ingredients. In 2016, 19 production sites worldwide were already RSPO certified. Our goal is to only source palm oil and palm kernel oil with RSPO certification, provided it is available on the market. This voluntary commitment has been expanded to include the most important intermediate products based

on palm oil and palm kernel oil up to 2025; these include fractions and primary oleochemical derivatives as well as edible oil esters.

We successfully completed our joint project with Cargill and the German governmental agency for international cooperation (Gesellschaft für Internationale Zusammenarbeit, or GIZ) on the sustainable production of coconut oil in the Philippines in 2015. Since then, small-holder farmers have been producing the world's first Rainforest Alliance-certified dried coconut meat (copra), from which the oil is extracted. In a follow-up project, BASF is working together with Cargill, Proctor & Gamble and the GIZ to support the expansion of a certified and transparent supply chain for coconut oil in the Philippines and Indonesia. The project is being financed in part by the "develoPPP.de" program of the German Federal Ministry for Economic Cooperation and Development (BMZ). The project is also expected to result in improved income and living standards for around 3,600 small farmers.

BASF signed a contract in 2016 together with Arkema and Jayant Agro, along with the non-governmental organization Solidaridad, to promote sustainability in the castor oil supply chain. With the Sustainable Castor Initiative – Pragati, the project members want to improve the livelihood of castor oil farmers and their employees in India by helping them optimize their yield and reduce the impact on the environment. Furthermore, a sustainability code is being developed that will enable Indian farmers to offer the first certified sustainable castor oil on the global market. The project is initially scheduled to run for three years.

For more on the Biomass Balance Approach, see page 62

For more on palm (kernel) oil, see page 68

For more on our voluntary commitment to palm oil products, see basf.com/en/palm-dialog

Mineral raw materials

We procure a number of mineral raw materials, like precious metals, that we use to produce process and mobile emissions catalysts. In suspected cases, we track the origins of minerals – as defined in the Dodd-Frank Act – to see if they come from mines in conflict regions. We reserve the right to conduct an external audit and, if necessary, terminate our business relationship. The suppliers addressed have confirmed to us that they do not source minerals matching this definition of conflict minerals from the Democratic Republic of the Congo or its neighboring countries.

BASF is observing the current development of a European regulation on conflict minerals that creates obligations for importers and processors of mineral raw materials originating from conflict regions.

Environment, health, safety and security
Responsible Care Management System

We act responsibly as an integral part of society and have set out the framework for our voluntary commitments in our Responsible Care Management System. We never compromise on the safety and security of our employees, contractors and neighbors as well as our facilities, transportation and products, and the environment.

Strategy

- **Worldwide safety initiatives foster awareness of workplace safety**
- **Ambitious goals for safety, security, health and environmental protection**

BASF's Responsible Care Management System comprises the global rules, standards and procedures for safety, security, health and environmental protection for the various stations along our value chain. Our regulations cover the transportation of raw materials, activities at our sites and warehouses, and distribution of our products as well as our customers' application of the products. Specifications for implementing these measures are laid out in binding directives that are introduced in consultation with employee representatives. These describe the relevant responsibilities, requirements and assessment methods. At our sites, we cover energy and climate protection through, for example, our energy management.

We regularly conduct audits to monitor our performance and progress. We use the findings from these audits for continual improvement.

We set ourselves ambitious goals for safety, security, health and environmental protection. Our policies and requirements are constantly updated.

We assess the potential risks and weak points of all our activities – from research to production and logistics – and the effects of these on the safety and security of our employees, the environment or our surroundings. In our databases, we document accidents, near misses and safety-related incidents at our sites as well as along our transportation routes; appropriate measures are derived according to specific cause analyses. We foster awareness of workplace safety in every individual with our worldwide safety initiatives.

For more on Responsible Care, see basf.com/en/responsible-care

Audits

- **121 safety, security, health and environmental protection audits performed at 80 sites**

Regular audits help ensure that standards are met for safety, security, health and environmental protection. We conduct audits at BASF sites and at companies in which BASF is a majority shareholder. We have defined our regulations for Responsible Care audits in a global Group requirement. During our audits, we create a safety and environmental profile that shows if we are properly addressing the existing hazard potential. If this is not the case, we agree on measures and conduct follow-up audits on their implementation.

Our internal audit system complies with the standards for external auditing procedures ISO 19011 and OHSAS 18001. Worldwide, 155 BASF production sites are certified in accordance with ISO 14001 (2015: 180)[1]. In the BASF Group in 2016, 121 environmental, safety and security audits were carried out at 80 sites, along with 37 short-notice audits on various topics at 33 sites. We audited 30 sites with respect to occupational medicine and health protection.

For more on occupational safety and health protection, see page 98 onward

Costs and provisions for environmental protection in the BASF Group (million €)

	2016	2015
Operating costs for environmental protection	1,011	962
Investments in new and improved environmental protection plants and facilities[2]	206	346
Provisions for environmental protection measures and remediation[3]	588	538

[2] Investments comprise end-of-pipe measures as well as integrated environmental protection measures.

[3] Values shown refer to December 31 of the respective year.

[1] In addition to changes in the site portfolio, the decrease mainly resulted from the sites' aim to be certified in accordance with ISO 50001 due to our energy efficiency goal.

Transportation and storage

Our regulations and measures for transportation and warehouse safety cover the delivery of raw materials, the storage and distribution of chemical products among BASF sites and customers, and the transportation of waste from our sites to the disposal facilities.

Strategy

In 2014, we had already nearly achieved the BASF Group goal of reducing the number of worldwide transportation accidents per 10,000 shipments by 70% from 2003 to 2020. Therefore, in our reporting on transportation incidents, we have focused since 2015 on dangerous goods spillages that significantly impacted the environment. We report on dangerous goods leaks of BASF products in excess of 200 kilograms on public transportation routes, provided BASF arranged the transport.

Transportation incidents

We recorded two incidents in 2016 with spillage of more than 200 kilograms of dangerous goods (2015: 2). None of these transportation incidents had a significant impact on the environment (2015: 0).

Accident prevention and emergency response

- Dangerous goods inspections expanded in contract management system
- Inspection program introduced for container barges

In order to ensure that our processes are even safer and create globally uniform standards, we introduced extended dangerous goods checks into our order management system in 2016.

We broadened the training opportunities for our employees and added new e-learning modules, such as the introduction of a multilingual training module in Europe on the road transportation of hazardous goods.

We stipulate worldwide requirements for our logistics service providers and assess them in terms of safety and quality. In 2016, we evaluated around 370 companies in all regions. Our experts use our own evaluation and monitoring tools as well as internationally approved schemes.

We added container barges to our existing inspection program in 2016. This includes not only evaluating the vessels themselves, but also the management systems of the shipping companies to review their safety standards.

We regularly evaluate the risks in transporting raw materials with high hazard potential using our global guideline. It is based on the guidelines of the European Chemical Industry Council, CEFIC.

Activities in external networks

We are actively involved in external networks, which quickly provide information and assistance in emergencies. These include the International Chemical Environmental (ICE) initiative and the German Transport Accident Information and Emergency Response System (TUIS), in which BASF plays a coordinating role. In 2016, we provided assistance to other companies in 176 cases worldwide. We apply the experience we have gathered to set up similar systems in other countries: For example, we intensified our activities in South America in 2016.

For more, see basf.com/distribution_safety and basf.com/emergency_response

Production

We never compromise on safety. For occupational and process safety as well as health and environmental protection and corporate security, we rely on comprehensive preventive measures as well as on the involvement of all employees and contractors. Our global safety and security concepts serve to protect our employees, contractors and neighbors as well as to prevent property damage and protect information and company assets. In this way, we help prevent injury, production outages and environmental damage.

Strategy

- Global safety standards
- Strengthening risk awareness

We have set ourselves ambitious goals for occupational and process safety as well as health protection. We stipulate globally mandatory standards for safety, security and health protection. A worldwide network of experts supports us in their implementation. Tried-and-true processes and solutions are documented and made globally available through networks and structured exchange. We regularly conduct audits on safety, security, health and environmental protection in order to monitor progress toward our goals. Risk-conscious working behavior is promoted for every individual through measures like systematic hazard assessments, specific qualification measures and global safety initiatives. Based on our corporate values, leaders serve as safety role models for our employees. Together, they contribute to the constant development of our safety culture.

Global safety initiative

- Process safety and information protection at Global Safety Days

With our global safety initiative begun in 2008, we have created the conditions necessary for the continuous development of a safety culture. Process safety and information protection were the main theme of our 2016 Global Safety Days, carried out in more than 860 activities at around 350 sites. Topics included product spillage prevention; reducing environmental, health and safety hazard potential; and proper conduct in handling sensitive information. More than 75,000 employees and contractors around the world took active part. This commitment and vigorous exchange make a major contribution to our safety culture. At the Ludwigshafen site, employees and contractors can obtain continuous further education on diverse safety and security topics at our training center. The training center was opened as part of our 2010 safety initiative; more than 19,000 participants received training there in 2016.

For more on the global safety initiative, see basf.com/global-safety-initiative

Occupational safety

- Employees and contractors worldwide instructed on safe behavior
- Fire at North Harbor in Ludwigshafen

We have made it our goal to reduce the worldwide lost-time injury rate per one million working hours to 0.5 at most by 2025. To this end, we promote risk-conscious behavior and safe working practices for every individual, particularly through regular communication, systematic risk assessments, specific qualification measures and our worldwide safety initiatives.

We recorded around 118,000 enrollments in occupational safety training courses worldwide in 2016. These seminars comprise not only legally stipulated instructions, but also courses on safe procedures to strengthen our employees' risk-aware behavior and prevent work-related accidents.

2025 Goal

Reduction of worldwide lost-time injury rate
per one million working hours

≤0.5

In 2016, 1.4 work-related accidents per one million working hours occurred at BASF sites worldwide (2015: 1.4), raising the rate of chemical-related accidents to 9% (2015: 8%). The rate of work-related accidents per one million working hours for contractors was at 1.5 in 2016 (2015: 1.4[1]). Unfortunately, there were four incidents in 2016 with a total of seven fatalities (2015: two fatal work-related accidents). BASF is performing a comprehensive analysis of the incidents and using the findings to derive appropriate measures.

During maintenance work in Camaçari, Brazil, an employee of a crane company suffered fatal injuries when the crane he was operating tipped over. In May, an employee of an external company hired by BASF to perform maintenance work in Yeosu, South Korea, died from the effects of phosgene exposure. The cause of the accident was investigated by BASF and the relevant Korean authorities. In February 2017, the court responsible for the case ruled that the accident was attributable to carelessness on the part of individual employees.

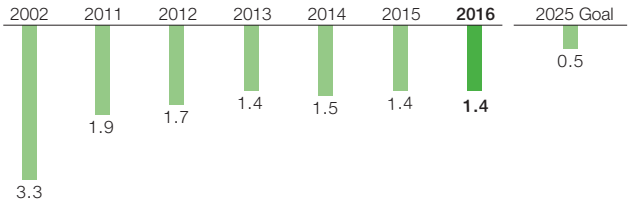
[1] The 2015 figure was adjusted to reflect a revised hour-counting method for contractors in Asia.

Although the court did not identify any technical or process defects, a small monetary penalty was nevertheless imposed on BASF. After the accident, BASF reviewed the safety measures and processes at all of its isocyanate production sites worldwide and once again clarified these to employees. An employee of a subcontractor succumbed to his injuries after falling through a roof opening in Kuan Yin, Taiwan, in July.

In October, three employees of the BASF fire department lost their lives in an accident at the North Harbor of the Ludwigshafen site, along with one barge crewman on a tanker moored in the harbor. BASF had contracted a specialist company for pipeline construction to perform scheduled preventive maintenance on an emptied and secured propylene line at the North Harbor. Several pipeline sections were to be replaced. A fire broke out during the work, leading to an explosion and ensuing fires in other pipelines. Six of the severely injured were discharged from the hospital in December; another was kept in the hospital for inpatient treatment. Light injuries were sustained by 22 people in the accident. The district attorney's office of the city of Frankenthal is investigating the accident. BASF is supporting assessors and authorities in their inspections and has also hired an independent expert to analyze the causes of the accident.

For more on the fire in Ludwigshafen, see basf.de/fire-northharbor
For more on occupational safety, see basf.com/occupational_safety

Lost-time injury rate per one million working hours



Health protection

- Focus in 2016: heart attack and stroke prevention
- Global standards for occupational medicine and health protection

Our worldwide standards for occupational medicine and health protection are specified in a directive that is implemented by a global network of experts. Our global health management serves to promote and maintain the health and productivity of our employees. This was supported by numerous emergency drills and health promotion measures in 2016.

We measure our performance in health protection using the Health Performance Index (HPI). The HPI comprises five components: confirmed occupational diseases, medical emergency drills, first aid, preventive medicine and health promotion. Each component contributes a maximum of 0.2 to the total score. The highest possible score is 1.0. Our goal is to reach a value of more than 0.9 every year.

With an HPI of 0.96, we were once again able to fulfill the ambitious goal of exceeding 0.9 each year (2015: 0.97). Our 2016 global health campaign for employees centered on heart attack and stroke prevention. To obtain a self-evaluation of their heart's age and their risk of heart attack and stroke, our employees filled out around 32,000 questionnaires worldwide. The offer included personal recommendations for individual risk factors and contact with a physician in the case of increased risk.

Annual goal

Health protection
Health Performance Index
Maximum score 1.0

>0.9

Our 2017 global health campaign will focus on the lungs and respiratory system. We raise employee awareness of these topics through offers tailored toward specific target groups.

The BASF health checks form the foundation of our global health promotion program and are offered to employees at regular intervals.

For more on occupational medicine, health promotion campaigns and the HPI, see basf.com/health

Process safety

- Expanded initiative for reducing process safety incidents
- Enhanced training methods

We use the number of process safety incidents as a key performance indicator, following to a large extent the definition set by the European Chemical Industry Council (CEFIC). In 2016, we recorded 2.0 process safety incidents per one million working hours worldwide (2015: 2.1). We pursue continual improvement by investigating every incident in detail, analyzing root causes and using the findings to derive suitable measures. We set ourselves the goal of reducing process safety incidents to a rate of no more than 0.5 per one million working hours by 2025.

2025 Goal

Reduction of worldwide process safety incidents
per one million working hours

≤0.5

To this end, we continued our worldwide initiative focusing on plant maintenance, repair and operation. This initiative produced a catalog of successful practices for preventing process safety incidents that has been available in several languages to all production plants worldwide since 2016.

Our globally implemented management system for process safety provides the framework for the safe construction and operation of our plants as well as the protection of people and the environment. Our experts have developed a protection plan for every plant that considers the key aspects of safety, health and environmental protection – from conception to startup – and stipulates specific protection measures for each. We continued to review this management system in all regions in 2016.

In order to maintain the highest level of safety at our plants across their entire life cycle, we review the implementation of our protection plans in all facilities at regular intervals and depending on hazard potential. We use globally standardized software to track these safety assessments. One module of this program – already used in many of our plants – checks the timely implementation of stipulated measures, supporting our employees in production. We supplemented this in 2016 by updating a global recommendation for prioritizing safety measures.

To strengthen risk awareness, we enhanced our training methods, introduced global recommendations for training measures and instructed around 13,000 course participants.

For more on process safety, see basf.com/process_safety

Emergency response

- Regular review of emergency systems
- Global qualification program for emergency response teams

In order to ensure uniformly high standards around the world for safety, security, health and environmental protection, we continued to implement our requirements for emergency response planning and fire prevention in the BASF Group in 2016. We work, for example, with site-specific emergency response plans and actively involve situation-related partners and suppliers as well as cities, communities and neighboring companies.

We regularly check our emergency systems and drill procedures with employees, contractors and local authorities. Through 173 drills and simulations in 2016, we instructed participants in our emergency response measures. One topic, for example, revolved around collaboration between production facilities and the fire department.

Through our SPIDER Emergency Response and Information Center Verbund, our specialists from the site fire department, emergency medical team, site security, and environmental protection can work together quickly and reliably across different sites around Europe. Our central emergency response supports local emergency response units around the world and around the clock.

We have been using the KATWARN system at the Ludwigshafen site since 2015, an app-based warning system that serves as an additional information channel to quickly inform site employees and neighbors of dangerous situations. We are constantly improving its use.

We developed a global qualification program in 2016 to train our emergency response teams. All over the world, mentors from the BASF SE fire department support local emergency response instructors at the sites with their knowledge, contributing to safety.

For more on emergency response, see basf.com/emergency_response

Corporate security

- Worldwide network of information protection officers

We protect our employees, sites and company know-how against third-party interference, and establish the necessary framework worldwide with our uniform concepts. Audits enable us to check the implementation of these measures.

New online training courses are available to our employees to prepare them for travel. Business travelers, transferees, and employees in countries with elevated security risks are informed about appropriate protection measures and individually counseled where necessary. After any major incident, we now have the possibility of more quickly and accurately locating employees in the affected regions through a travel research system that was globally standardized in 2016.

Aspects of human rights related to site security, such as the right to liberty and security of person, are a component of the global qualification requirements of our security personnel. Respect for human rights is a mandatory element of any contract with service providers of the BASF Group who are active in this area. Our investment projects include performing comprehensive analyses of potential risks. In 2016, we standardized the use of security services at further European sites in order to increase effectiveness and efficiency.

Due to the increasing risks associated with the use of information technology, a global campaign for employees is drawing attention to how we can even better protect our company knowledge. For example, a global phishing simulation further strengthened our employees' awareness of risks. Our worldwide network of information protection officers comprises more than 650 employees. They support the implementation of our uniform requirements and conduct seminars on secure behaviors. We provided information protection instruction to more than 27,000 participants in 2016. In addition, we published standardized Group-wide recommendations for the protection of information and knowledge.

For more on corporate security, see basf.com/corporate-security

Product stewardship

We review the safety of our products from research and development through production and all the way to our customers' application. We work continuously to ensure that our products pose no risk to people or the environment when they are used responsibly and in the manner intended.

Strategy

- **Global directives with uniformly high standards for product stewardship**

We ensure uniformly high standards for product stewardship worldwide and our voluntary initiatives go beyond legal requirements. We monitor the compliance of our guidelines with regular audits.

We provide extensive information on our chemical sales products to our customers with safety data sheets in more than 40 languages. This is achieved with the help of a global database in which we maintain and evaluate continuously updated environmental, health and safety data for our substances and products. Our global emergency hotline network provides information around the clock. We train and support our customers in fulfilling their industry-specific or application-specific product requirements.

The Care Chemicals division, for example, is involved in the European Federation for Cosmetic Ingredients, EFfCI. Together with other producers of cosmetic ingredients, we discuss the best way to cover our customers' demand for information. The aim is to enable them to ensure the safety of the cosmetic products they manufacture in accordance with current scientific knowledge. This includes knowledge that extends back along the value chain to the production processes of the chemical raw materials used.

The Intermediates division supports information exchange with customers who manufacture ingredients for personal end-user products. For example, BASF customers such as industrial producers of raw materials for consumer goods are specifically addressed and advised by BASF's experts as soon as a change is observed in the risk assessment of materials used in the production process.

With our global risk assessment goal, we are supporting the implementation of initiatives such as the Global Product Strategy (GPS) of the International Council of Chemical Associations (ICCA). GPS is establishing worldwide standards and best practices to improve the safe management of chemical substances.

In addition, we are also involved in workshops and training seminars in developing countries and emerging markets. In 2016, for example, we conducted training sessions for chemical industry representatives on GPS in China, India and Kenya on safe chemical management. In order to facilitate public access to information, we are participating in the setup of an ICCA online portal that provides more than 4,600 GPS safety summaries.

For more on GPS, see basf.com/en/gps

Global goal

By 2020, we will conduct risk assessments for all substances and mixtures BASF sells worldwide in quantities of more than one metric ton per year. We already reached 75.4% of this goal in 2016 (2015: 67.8%). The risk associated with using a substance is determined by the combination of its hazardous properties and its potential exposure to people and the environment.

2020 Goal

Risk assessment of products that we sell in quantities of more than one metric ton per year

>99%

REACH and other legal requirements

- **Third registration phase of REACH in progress**

We are working continuously on registering substances produced in annual volumes between one and one hundred metric tons for the third phase of the E.U. chemicals regulation, REACH. We have already registered over 250 substances to this end. Moreover, our REACH activities are increasingly determined by E.U. authorities' decisions on additional studies in connection with the evaluation of submitted dossiers. Independently of this, BASF is also obligated to continuously update the registration dossiers it has submitted. The number of updates has meanwhile exceeded the number of registrations, although over 90% of the updates are undertaken on our own initiative and not as a response to official inquiry.

We apply the experience we have gathered with REACH to fulfill new legal requirements around the world, such as in Korea, Taiwan and Turkey. In 2016, we submitted more than 8,000 preregistrations in Taiwan in order to secure our business activities there.

In an increasingly political agrochemical environment, we are facing a rise in both regulatory requirements and the number of additional studies required to obtain or extend approval for crop protection products.

Environmental and toxicological testing

Use of alternative and complementary methods for animal studies

Before launching products on the market, we subject them to a variety of environmental and toxicological testing. We apply state-of-the-art knowledge already in the research and development phase of our products. We only conduct animal studies when they are required by law and approved by respective authorities. Animal studies are at times stipulated by REACH and other national legislation outside the European Union in order to obtain more information on the properties and effects of chemical products.

We adhere to the specifications laid down by the German Animal Welfare Act as well as the requirements of the Association for Assessment and Accreditation of Laboratory Animal Care – the highest standard for laboratory animals in the world. We are continually developing and optimizing alternative and complementary methods, and we use them wherever it is possible and approved by the authorities. We use alternative and complementary methods in more than a third of our tests. Currently, 30 replacement and supplementary methods are being used in our labs and another 12 are in the development stage. BASF spent €3.0 million toward this purpose in 2016. One focus area of our research in 2016 and subsequent years is the development of alternative methods for testing the potential of substances that negatively affect organisms' growth and development.

In 2016, our Experimental Toxicology and Ecotoxicology department began work together with a total of 39 partners on one of the largest European collaborative projects for alternative methods. The project, planned to run for six years, aims to develop alternative methods to the point that chemical risk assessments can be efficiently conducted largely without animal testing.

For more on alternative methods, see basf.com/alternative_methods

Management of new technologies

Continual safety research on nano- and biotechnology

Technologies such as nanotechnology or biotechnology offer solutions for key societal challenges – for example, in the areas of climate protection or health and nutrition.

Safe handling of nanomaterials is stipulated in our Nanotechnology Code of Conduct. We are constantly expanding our knowledge of nanomaterial safety. Over recent years, we have conducted more than 240 toxicological and ecotoxicological studies and participated in over 30 different projects related to the safety of nanomaterials. We published the results in over 100 scientific articles. One important finding is that toxicity is determined not by the size of the particles but by the intrinsic properties of the substance.

The European Chemicals Agency (ECHA) as well as the OECD and national authorities are currently developing regulatory concepts to test and assess nanomaterials. We contribute our expertise through various working groups, such as the Partner Expert Groups (PEGs) of the ECHA or the Business and Industry Advisory Group (BIAC) of the OECD. These regulatory concepts are all based on a new approach for the targeted investigation of nanomaterials. We developed them together with the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) and other experts and expanded them further using concrete examples in 2016.

An important prerequisite for the consistent application of regulatory specifications for nanomaterials is their clear identification. Together with partners, we have developed a tiered, efficient measurement method in various E.U. projects that is currently being validated for use in REACH.

Transparency is another issue. In our Nano dialog forum, we meet with environmental and consumer agencies to discuss questions on nanomaterial safety and transparency and develop joint recommendations for political representatives. We wrapped up another series of talks in BASF's Nano dialog forum with a report and an event in Brussels in 2016.

BASF makes successful use of biotechnology. We produce a range of established products with the help of biotechnological methods. This provides us with a great wealth of experience in the safe use of biotechnological methods in research and development as well as in production. When employing biotechnology, we adhere to all standards and legal regulations. We are guided by the code of conduct set out by EuropaBio, the European biotechnology association that actively supports a science-based, transparent and predictable regulatory framework. The association addresses society's ethical concerns, and promotes better mutual understanding of such issues through dialog.

For more on nanotechnology and the Nanotechnology Code of Conduct, see basf.com/nanotechnology

Energy and climate protection

Suppliers → Production → Customers

As an energy-intensive company, we are committed to energy efficiency and global climate protection. We want to reduce emissions along the value chain and utilize, for example, efficient technologies for generating steam and electricity, energy-efficient production processes, and comprehensive energy management. Our climate protection products make an important contribution toward helping our customers avoid emissions.

Strategy

- **We are committed to energy efficiency and global climate protection along the value chain**

We want to reduce greenhouse gas emissions in our production and along the entire value chain. To this end, we have thoroughly analyzed the greenhouse gas emissions from our production in the past few years and implemented comprehensive reduction measures. This is how, for example, we have been able to reduce nitrous oxide emissions by more than 95% since 1997.

Comparisons with European emissions trading benchmarks show that our greenhouse gas-intensive chemical plants operate at above-average efficiency. To supply our production sites with energy, we rely on highly efficient combined heat and power plants with gas and steam turbines, and on the use of heat released by production processes. Around 50% of BASF Group emissions in 2016 resulted from steam and electricity generation in our power plants as well as in our energy suppliers' power plants.

Our success also depends on the long-term security and competitiveness of our energy supplies. Furthermore, we are committed to energy management that helps us analyze and further improve the energy efficiency of our plants.

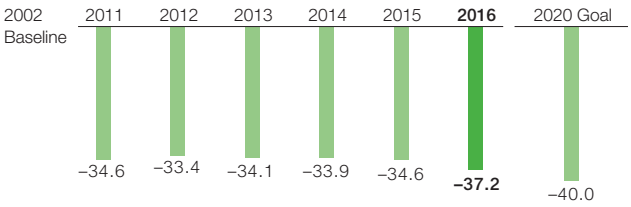
We offer our customers solutions that help prevent greenhouse gas emissions and improve energy and resource efficiency. Around half of our total annual research and development spending goes toward developing these products and optimizing our processes.

Our climate protection activities are based on comprehensive emissions controlling. We report on greenhouse gas emissions in accordance with the Greenhouse Gas Protocol Standard, as well as the sector-specific standard for the chemical industry. Since 2004, we have participated in the international non-profit organization CDP's program for reporting on data relevant to climate protection. Reporting to CDP entails an annual analysis performed by our experts of the opportunities and risks that climate change poses for BASF. BASF achieved a score of A- in CDP's rating for 2016, awarding it "Leadership" status. Companies on the "Leadership" level are distinguished by factors such as the completeness and transparency of their reporting. They also pursue comprehensive approaches in managing the opportunities and risks associated with climate change as well as emissions reduction strategies to achieve company-wide goals.

We advocate climate protection by supporting initiatives to this end. The G20 Summit will take place in Hamburg in July 2017, an annual meeting between leaders of state and government of the most influential industrialized countries and emerging markets. Companies from 20 countries – the Business 20 (B20) – are working on recommendations for these political leaders. BASF is leading the working group on energy, climate and resource efficiency. The group especially aims for a political environment that enables companies like BASF to make essential contributions to climate protection using their power of innovation.

For more on climate protection, see basf.com/climate_protection

Reduction of greenhouse gas emissions per metric ton of sales product in BASF operations excluding Oil & Gas[1, 2] (%)



[1] The figure for 2011 was not adjusted to reflect the scope of consolidation pursuant to International Financial Reporting Standards 10 and 11. For more information on our data collection methods, see page 4.

[2] The figures for the 2011 and 2012 business years were not adjusted to the currently applied factors for global warming potential. For more information on our data collection methods, see page 104.

BASF Group's greenhouse gas emissions according to the Greenhouse Gas Protocol[1] (1,000 metric tons of CO_2 equivalents)

BASF operations including Oil & Gas	2002	2015	2016
Scope 1[2]			
CO_2 (carbon dioxide)	14,634	16,496	16,215
N_2O (nitrous oxide)	6,407	600	528
CH_4 (methane)	244	88	45
HFC (hydrofluorocarbons)	61	119	87
SF_6 (sulfur hexafluoride)	0	1	0
Scope 2[3]			
CO_2	5,243	3,795	3,884
Total	**26,589**	**21,099**	**20,759**
Sale of energy to third parties (Scope 1)[4]			
CO_2	347	1,071	1,161
Total	**26,936**	**22,170**	**21,920**

[1] BASF reports separately on direct and indirect emissions from the purchase of energy. Scope 1 emissions encompass both direct emissions from production and generation of steam and electricity, as well as direct emissions from the generation of steam and electricity for sale. Scope 2 emissions comprise indirect emissions from the purchase of energy for BASF's use.

[2] Emissions of N_2O, CH_4, HFC und SF_6 have been translated into CO_2 emissions using the Global Warming Potential, or GWP, factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 1995 (2002 emissions) and IPCC 2007, errata table 2012 (2015 and 2016 emissions). HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components.

[3] Location-based approach. Information on the calculation of market-based Scope 2 emissions can be found in the GRI and Global Compact Index; see basf.com/en/gri_gc

[4] Includes sale to BASF Group companies; as a result, emissions reported under Scope 2 can be reported again in some cases.

Global goals

- Reduction of greenhouse gas emissions per metric ton of sales product
- Introduction of energy management systems in accordance with ISO 50001

We aim to reduce our greenhouse gas emissions per metric ton of sales product by 40% by 2020, compared with baseline 2002. In 2016, we achieved a reduction of 37.2% (2015: reduction of 34.6%). Since 1990, we have been able to lower our overall greenhouse gas emissions from BASF operations (excluding Oil & Gas) by 50.2% and even reduce specific emissions by 75.4%.

We set ourselves a new energy efficiency goal in 2015 covering both the chemicals and the oil and gas businesses. By 2020, we want to have introduced certified energy management systems (DIN EN ISO 50001) at all relevant production sites[5]. Taken together, this represents 90% of BASF's primary energy demand. This is one of the ways in which we intend to identify and carry out improvements in energy efficiency, reducing not only greenhouse gas emissions and saving valuable energy resources, but also increasing the BASF Group's competitive ability.

2020 Goal

Reduction of greenhouse gas emissions per metric ton of sales product
Baseline 2002
BASF operations excl. Oil & Gas

–40%

2020 Goal

Coverage of our primary energy demand through certified energy management systems at all relevant sites
BASF operations incl. Oil & Gas

90%

In 2016, workshops were conducted in all regions to introduce our energy management systems. This is how, for example, an energy savings potential of over €1 million per year was identified during system implementation at three pilot plants at the largest South American site in Guaratinguetá, Brazil. It is already starting to be realized. All energy efficiency measures are recorded and analyzed in a global database and made available to Group sites as best practices. Currently, over 100 measures are being pursued to reduce energy consumption and increase competitive ability. External audits in accordance with ISO 50001 were already conducted at the first two Chinese sites in the Shanghai metropolitan region in 2016. At the moment, 31 sites are certified worldwide, representing 42.3% of our primary energy demand.

[5] The selection of relevant sites is determined by the amount of primary energy used and local energy prices.

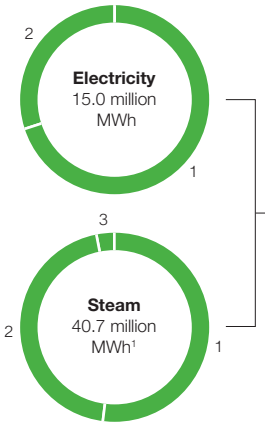
Energy supply of the BASF Group 2016

Electricity supply

1	Internally generated	70%
2	Purchased	30%

Steam supply

1	Internally generated	52%
2	Waste heat	45%
3	Purchased	3%

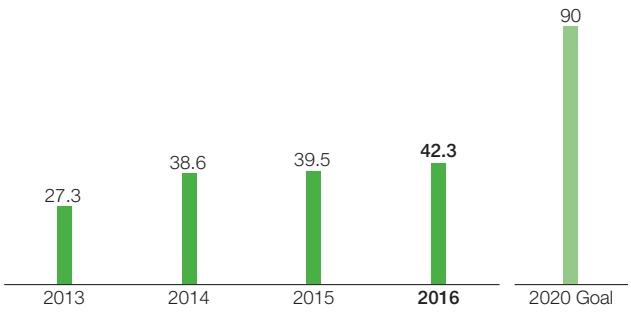


Fossil and residual fuels used for power generation in power plants of the BASF Group

83.6%	**Natural gas**	31.4 million MWh
0.4%	**Heating oil**	0.1 million MWh
2.2%	**Coal**	0.9 million MWh
13.8%	**Residual fuels**	5.2 million MWh
	Total:	37.6 million MWh

[1] Conversion factor: 0.75 MWh per metric ton of steam

Certified energy management systems (ISO 50001) introduced at BASF Group sites worldwide, in terms of primary energy demand (%)



Energy supply and efficiency

■ Verbund system as important component of our energy efficiency strategy

Gas and steam turbines in our combined heat and power plants enable us to fulfill around 70% of the electricity demand of the BASF Group. Compared with separate methods of generating steam and electricity, we saved 14.0 million MWh of fossil fuels and prevented 2.8 million metric tons of carbon emissions in 2016. The Verbund system is an important component of our energy efficiency strategy: Waste heat from one plant's production process is used as energy in other plants. In this way, the Verbund saved us around 19.0 million MWh in 2016, which translates to 3.8 million metric tons less of CO_2 released to the environment. With combined power and steam generation as well as our continuously enhanced Energy Verbund, we were thus able to prevent a total of 6.6 million metric tons of carbon emissions in 2016.

We were able to further optimize the resource and energy consumption of our production in numerous projects around the world in 2016. New highly efficient combined heat and power plants started up at the German sites in Düsseldorf-Holthausen and Illertissen as well as at Pontecchio Marconi in Italy. Furthermore, process improvements at many additional sites have led to savings in steam and electricity.

We also rely on locally available energy sources for energy supply at our sites. Especially in the growing Asian market, we and our energy suppliers also utilize coal as an energy source since the more climate-friendly natural gas is not available in sufficient quantities at competitive prices.

We are exploring the use of renewable energies. These can only become a permanent part of our energy mix if they are competitive in terms of supply security and cost. Our research also contributes to increasing the efficiency of technologies for the use of renewable energy sources.

Key indicators for energy and climate protection in BASF operations excluding Oil & Gas

	Baseline 2002[1]	2015	2016
Greenhouse gas emissions[2] (million metric tons of CO_2 equivalents)	24.713	20.133	19.976
Specific greenhouse gas emissions (metric tons of CO_2 equivalents per ton of sales product)	0.897	0.587	0.564
Primary energy demand[3] (million MWh)	55.759	57.262	57.423
Energy efficiency (kilograms of sales product per MWh)	494	599	617

[1] The values for baseline 2002 were not adjusted to reflect the currently applied global warming potential factors.

[2] Scope 1 and Scope 2 (location-based) according to the GHG Protocol Standard, excluding emissions from the generation of steam and electricity for sale to third parties; information on market-based Scope 2 emissions can be found in the GRI and Global Compact Index; see basf.com/en/gri_gc

[3] Primary energy used in BASF's plants as well as in the plants of our energy suppliers to cover energy demand for production processes

Carbon footprint and climate protection products

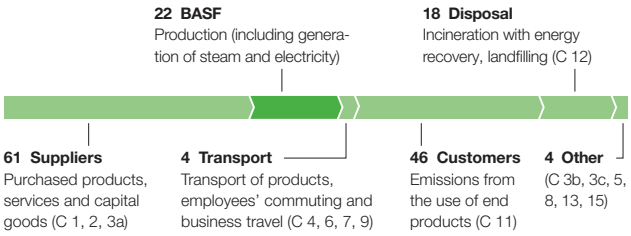
- Reporting on greenhouse gas emissions along the entire value chain
- Customers' use of climate protection products sold in 2016 avoids 540 million metric tons of CO_2 equivalents

BASF has been publishing a comprehensive corporate carbon footprint since as early as 2008. This reports on all emissions along the value chain and shows the volume of emissions prevented through the use of our climate protection products. We plan our climate protection activities along the value chain based on our corporate carbon footprint.

Through various measures to reduce our raw material and energy requirements, the emission of greenhouse gases associated with producing the raw materials was decreased by a total of around 155,000 metric tons in 2016.

Our climate protection products help us offer solutions to our customers to avoid greenhouse gas emissions over their entire lifecycle as compared with reference products. According to the systematic sustainability analysis we conduct on our portfolio – using the Sustainable Solution Steering® method – such products are referred to as "Accelerator" solutions as using them contributes positively to climate protection and energy. One example is our Green Sense® Concrete technology for sustainable construction: The optimization of the concrete's composition allows for reduced greenhouse gas emissions compared with conventional concrete production.

Greenhouse gas emissions along the BASF value chain in 2016[4]
(million metric tons of CO_2 equivalents)



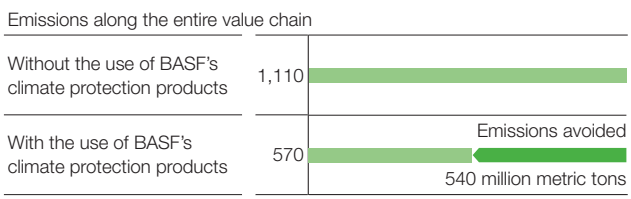
[4] According to Greenhouse Gas Protocol, Scope 1, 2 and 3; categories within Scope 3 are shown in parentheses

An analysis of 24 climate protection product groups revealed that customers' use of products sold in 2016 helped to avoid 540 million metric tons of CO_2 equivalents. Every product makes an individual contribution in the value chain of customer solutions. Value chains are assessed in terms of BASF's economic share of the respective customer solution. On average, 11% of the emissions avoided were attributable to BASF in 2016. The calculation of avoided greenhouse gas emissions was based on the chemical industry standard of the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD).

For more on our emissions reporting, see basf.com/corporate_carbon_footprint

For more on the sustainability analysis of our product portfolio, see page 30 onward

Prevention of greenhouse gas emissions through the use of BASF products (million metric tons of CO_2 equivalents)



Water

Suppliers — Production — Customers

Water is of fundamental importance in chemical production. It is used as a coolant, solvent and cleaning agent, as well as to make our products. We are committed to its responsible use along the entire value chain and especially in our production sites' water catchment areas. We have set ourselves a global goal for sustainable water management.

Strategy

■ Sustainable water management

We aim to use water as sparingly as possible and further reduce emissions to water. To do so, we have set out a Group directive with globally applicable standards.

We are introducing sustainable water management at all relevant production sites. These include our major Verbund sites as well as the sites in water stress areas, or regions in which more than 60% of available water is used by industry, household and agriculture. We consider the quantitative, qualitative and social aspects of water use. We want to identify where we can improve at our sites, and use as little water as possible, especially in water stress areas.

Together with the city of Guaratinguetá, Brazil, and the Fundação Espaço ECO®, we are engaged in the restoration of the local river basin at our site in Guaratinguetá, Brazil, which provides 90% of the local population's water supply. These efforts aim to improve water quality and increase its availability.

We offer our customers solutions that help purify water and use it more efficiently while minimizing pollution.

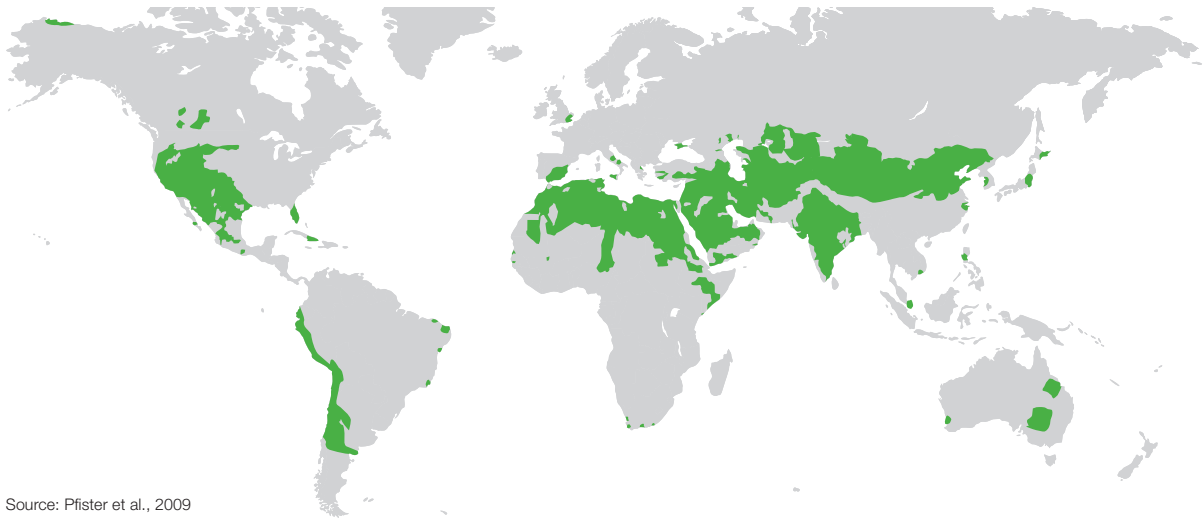
In order to ensure transparency in our reporting on water, we once again took part in CDP reporting in 2016. According to CDP, an international nonprofit organization, BASF is a world leader in sustainable water management and was included for the first time in CDP's Water A List. Of the 607 companies evaluated, only 24 of them received the top score of "A" – among them, BASF. CDP's evaluation of sustainable water management includes how transparently companies report on their water management activities and what they do to reduce risks, such as water scarcity. CDP also assesses the extent to which product developments – even at the customers of the companies under evaluation – can contribute to sustainable water management.

For more on the CDP water survey, see basf.com/en/cdp

Global goal

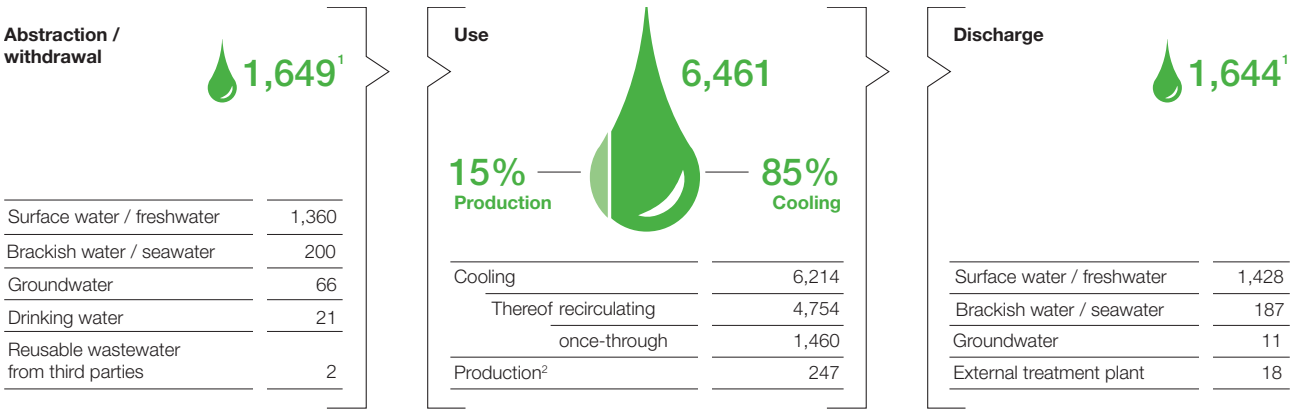
By 2025, we want to introduce sustainable water management at all sites in water stress areas and at our Verbund sites, covering 93% of BASF's entire water abstraction. We achieved 42.6% of this goal in 2016.

Water stress areas around the world



Source: Pfister et al., 2009

Water in the BASF Group 2016 (million cubic meters per year)



Abstraction / withdrawal	
Surface water / freshwater	1,360
Brackish water / seawater	200
Groundwater	66
Drinking water	21
Reusable wastewater from third parties	2

Use	
Cooling	6,214
Thereof recirculating	4,754
once-through	1,460
Production[2]	247

Discharge	
Surface water / freshwater	1,428
Brackish water / seawater	187
Groundwater	11
External treatment plant	18

[1] The difference between the volume of water drawn and the volume discharged is primarily attributable to evaporation losses during closed-circuit cooling.
[2] Total from production processes, graywater, rinsing and cleaning in production

We pursue our goal by applying the European Water Stewardship standard, which rests on four principles: sustainable water abstraction, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes, including in cooperation with other users.

In 2016, around 23% of our production sites were located in water stress areas. Around 1% of BASF's total water supply was abstracted from these sites.

2025 Goal

Introduction of sustainable water management at all production sites in water stress areas and at all Verbund sites
BASF operations excl. Oil & Gas

100%

Water use

■ Using water responsibly

Our water usage totaled 1,649 million cubic meters in 2016. This demand was covered for the most part by surface water, such as rivers and lakes. At some sites, we use alternative sources such as treated municipal wastewater, brackish water or seawater, reducing our need for freshwater.

We predominantly use water for cooling purposes (85%), after which we recirculate it back to our supply sources. We recirculate as much water as possible in order to withdraw less. Our larger sites have recooling plants that allow water to be reused several times and which reduce the temperature of used cooling water before it is discharged back into a body of water.

The supply, treatment, transportation and recooling of water is associated with a considerable energy demand. We employ various means in our efforts to minimize this as much as possible. We are constantly working to optimize our energy consumption and the amount of water we use, and to adapt to the needs of our business and the environment.

Emissions to water

■ Further reduction of emissions

A total of 1,644 million cubic meters of water were discharged from BASF production sites in 2016, including 184 million cubic meters of wastewater from production. Emissions of nitrogen to water amounted to 2,900 metric tons (2015: 3,000 metric tons). We were able to achieve this improvement by optimizing processes and exchanging products, for example. Around 15,900 metric tons of organic substances were emitted in wastewater (2015: 17,300 metric tons). Our wastewater contained 23 metric tons of heavy metals (2015: 25 metric tons). Phosphorus emissions amounted to 310 metric tons (2015: 460 metric tons). Our wastewater is treated through different methods depending on the type and degree of contamination – including biological processes, oxidation, membrane technologies, precipitation or adsorption.

In order to avoid unanticipated emissions and the pollution of surface or groundwater, we create water protection strategies for our production sites. This is mandatory for all production plants as part of the Responsible Care initiative. The wastewater protection plans involve evaluating wastewater in terms of risk and drawing up suitable monitoring approaches. We use audits to check that these measures are being implemented and complied with.

For more, see basf.com/water

Air and soil

We want to further reduce emissions to air from our production, prevent waste and protect the soil. We have set ourselves standards for doing so in global directives. If no recovery options are available for waste, we dispose of it in a proper and environmentally responsible manner.

Strategy

- Regular monitoring of emissions to air
- Professional disposal of hazardous waste
- Systematic management of contaminated sites

Regular monitoring of our emissions to air is a part of environmental management at BASF. Aside from greenhouse gases, we also measure emissions of other pollutants into the atmosphere. Our reporting does not take into account air pollutant emissions from oil and gas operations due to their substantial fluctuation during exploration phases.

Our Raw Material Verbund helps us prevent and reduce waste. We regularly carry out audits to inspect external waste disposal companies, ensuring that our hazardous waste in particular is properly disposed of. In this way, we also contribute to preventive soil protection and keep today's waste from becoming tomorrow's contamination.

When treatment is required for soil and groundwater contamination at active and former BASF sites, proper remediation measures are reviewed based on prevailing legal and current technical standards, and undertaken as necessary.

Emissions to air

- Further reduction of emissions

Absolute emissions of air pollutants from our chemical plants amounted to 26,735 metric tons in 2016. Emissions of ozone-depleting substances as defined by the Montreal Protocol totaled 25 metric tons in 2016 (2015: 23 metric tons). Emissions of heavy metals in 2016 amounted to 3 metric tons (2015: 4 metric tons).

Our product portfolio contains a variety of catalysts used in the automotive sector and in industry to reduce the emission of air pollutants.

Emissions to air (metric tons)
Air pollutants from BASF operations excluding Oil & Gas

	2016	2015
CO (carbon monoxide)	3,585	3,813
NO_x (total nitrogen oxides)	11,143	11,058
NMVOC (nonmethane volatile organic compounds)	4,824	5,140
SO_x (total sulfur oxides)	1,872	3,028
Dust	3,082	3,330
NH_3 (ammonia) and other inorganic substances	2,229	2,216
Total	**26,735**	**28,585**

Waste management

■ Total waste volume slightly above prior-year level

Waste prevention is our topmost goal. If waste is unavoidable, we review the options for recycling or energy recovery, using BASF's existing Verbund structures for efficient waste management. Total waste volume amounted to 2.10 million metric tons in 2016 (+3.7%).

Waste management in the BASF Group (million metric tons)

	2016	2015
Total waste generation[1]	**2.10**	**2.02**
Thereof from oil and gas exploration	0.06	0.05
Waste recovered	**0.77**	**0.68**
Recycled	0.26	0.27
Thermally recovered	0.51	0.41
Waste disposed of	**1.33**	**1.34**
In underground landfills	0.14	0.14
In surface landfills	0.47	0.48
Through incineration	0.72	0.72
Classification of waste for disposal[2]		
Nonhazardous waste	0.46	0.44
Hazardous waste	0.87	0.90
Transported hazardous waste	0.23	0.27

[1] Comprises all production waste and hazardous waste from construction activities

[2] The classification of waste into hazardous and nonhazardous waste is performed according to local regulations.

Management of contaminated sites

■ Systematic management of contaminated sites ensured

We develop remediation solutions that combine nature conservation, climate protection concerns, costs, and social responsibility. This means making customized decisions on a case-by-case basis, founded on the legal framework and current technological possibilities. We set out global standards for our approach to managing contaminated sites. A worldwide network of experts ensures their proper implementation.

We have been documenting relevant sites in a contaminated site database since 2013. Ongoing remediation work around the world continued on schedule and planning was concluded on future landfill remediation projects.

Forecast
Opportunities and risks report

Opportunities	Risks	Risk management
Potential successes that exceed our defined goals	Events that can negatively impact the achievement of our goals	Identifying opportunities and risks as early as possible and planning effective courses of action

The goal of BASF's risk management is to identify and evaluate opportunities and risks as early as possible and to take appropriate measures in order to seize opportunities and limit business losses. The aim is to avoid risks that pose a threat to BASF's continued existence and to make improved managerial decisions to create value. We understand risk to be any event that can negatively impact the achievement of our short-term operational or long-term strategic goals. We define opportunities as potential successes that exceed our defined goals.

In order to effectively measure and manage identified opportunities and risks, we quantify these in terms of probability and economic impact in the event they occur. We use statistical methods to aggregate opportunities and risks into risk factors. This way, we achieve an overall view of opportunities and risks at a portfolio level, allowing us to take effective measures for risk management.

Overall assessment

- **Significant risks and opportunities arise from overall economic developments and volatility in exchange rates and margins**

For 2017, we expect the global economy to continue to grow at around the same pace as the previous year. Important opportunities and risks for our earnings are associated with uncertainty regarding market growth, the development of key customer industries, and volatility in foreign currency exchange rates and margins. A considerable slowdown of the Chinese economy continues to pose significant risks. Such a development would negatively impact demand for intermediate and investment goods. This would impact the emerging markets that export raw materials as well as the advanced economies. This is especially true for Europe. Further risks to the global economy arise from an escalation of geopolitical conflicts and an increased tendency toward protectionism.

Potential short-term effects on EBIT of key opportunity and risk factors subsequent to measures taken[1]

Possible variations related to:	Outlook – 2017 +
Business environment and sector	
Market growth	■■■■■■■□
Margins	□■■■■■□□
Competition	□□■■■□□□
Regulation/policy	□□■■■□□□
Company-specific opportunities and risks	
Purchasing/supply chain	□□□■■□□□
Investments/production	□□■■■□□□
Personnel	□□□■■□□□
Acquisitions/divestitures/cooperations	□□□■■□□□
Information technology	□□□■□□□□
Law	□□■■■□□□
Finance	
Exchange rate volatility	□■■■■■■□
Other financial opportunities and risks	□□□■■□□□

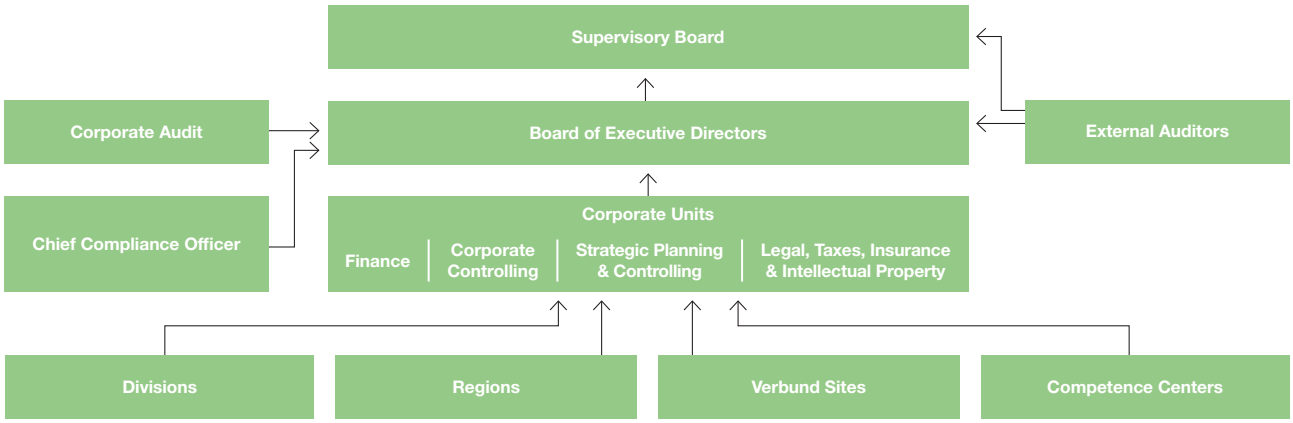
□□□■ < €100 million
□□■■ ≥ €100 million < €500 million
□■■■ ≥ €500 million < €1,000 million
■■■■ ≥ €1,000 million < €1,500 million

[1] Using a 95% confidence interval per risk factor based on planned values; summation is not permissible.

According to our assessment, there continue to be no significant individual risks that pose a threat to the continued existence of the BASF Group. The same applies to the sum of individual risks, even in the case of another global economic crisis.

Ultimately, however, residual risks remain in all entrepreneurial activities which even comprehensive risk management cannot exclude.

Organization of BASF Group's risk management[1]



Risk management process

- Integrated process for identification, assessment and reporting
- Decentralized management of specific opportunities and risks
- Aggregation at a Group level

The BASF Group's risk management process is based on the international risk management standard COSO II Enterprise Risk Management – Integrated Framework (2004), and has the following key features:

Organization and responsibilities

– Risk management is the responsibility of the Board of Executive Directors, which also determines the processes for approving investments, acquisitions and divestitures.
– The Board of Executive Directors is supported by the units Finance; Corporate Controlling; Strategic Planning & Controlling; Legal, Taxes, Insurance & Intellectual Property; and the Chief Compliance Officer. Effective January 1, 2017, the Finance corporate unit and the Legal, Taxes, Insurance and Intellectual Property corporate unit were both renamed functional units. Competence centers were relabeled either functional units or research units. The Strategic Planning & Controlling unit is now called Corporate Development. The new nomenclature had no effect on the existing risk management processes. The aforementioned units continue to coordinate the risk management process at a Group level and provide the structure and appropriate methodology. Opportunity and risk management is thus integrated into the strategy, planning and budgeting processes.
– A network of risk managers in the business, research, functional and corporate units advances the implementation of appropriate risk management practices in daily operations.
– The management of specific opportunities and risks is largely delegated to the business units and is steered at a regional or local level. Risks relating to exchange rates and raw material prices are an exception. In this case, there is an initial consolidation at a Group-wide level before derivative hedging instruments, for example, are used.
– BASF's Chief Compliance Officer (CCO) manages the implementation of our Compliance Management System, supported by additional compliance officers worldwide. The CCO regularly reports to the Board of Executive Directors on progress in the program's implementation as well as on any significant results. Furthermore, the CCO provides a status report to the Supervisory Board's Audit Committee at least once each year, including any major developments. In the event of significant incidents, the Audit Committee is immediately informed by the Board of Executive Directors.
– The internal auditing unit (Corporate Audit) is responsible for regularly auditing the risk management system established by the Board of Executive Directors in accordance with Section 91(2) of the German Stock Corporation Act. Furthermore, as part of its monitoring of the Board of Executive Directors, the Supervisory Board considers the effectiveness of the risk management system. The suitability of the early detection system we set up for risks is evaluated by our external auditor.

Instruments

– The Risk Management Process Manual, applicable throughout the Group, forms the framework for risk management and is implemented by the business units according to their particular business conditions.
– A catalog of opportunity and risk categories helps to identify all relevant opportunities and risks as comprehensively as possible.
– We use standardized evaluation and reporting tools for the identification and assessment of risks. The aggregation of opportunities, risks and sensitivities at the business and Group level using a Monte Carlo simulation helps us to identify effects and trends across the company.
– The BASF Group's management is informed about operational opportunities and risks (observation period of up to

[1] The names of some individual units were changed as of January 1, 2017. For more information, see the section "Organization and responsibilities."

one year) in the monthly management report produced by the Corporate Controlling unit. In addition, Corporate Controlling and Finance provide information twice a year on the aggregated opportunity/risk exposure of the BASF Group. Furthermore, if a new individual risk is identified which has a more than €10 million impact on earnings or bears reputational risks, it must be immediately reported.
– As part of our strategy development, the Corporate Development unit conducts strategic opportunity/risk analyses with a ten-year assessment period. These analyses are annually reviewed as part of strategic controlling and are adapted if necessary.
– Our Group-wide Compliance Program aims to ensure adherence to legal regulations and the company's internal guidelines. Our global employee Code of Conduct firmly embeds these mandatory standards into everyday business. Members of the Board of Executive Directors are also expressly obligated to follow these principles.

For more on our Group-wide Compliance Program, see page 134 onward

Significant features of the internal control and risk management system with regard to the Group financial reporting process

- Conducted in accordance with standardized Group guidelines
- Segregation of duties, four-eyes principle, and clearly regulated access rights
- Annual evaluation of control environment and relevant processes at significant companies

The Consolidated Financial Statements are prepared by a unit in the Finance division. BASF Group's accounting process is based on a standardized accounting guideline that sets out accounting policies and the significant processes and deadlines on a Group-wide basis. There are binding directives for the internal reconciliations and other accounting operations. Standard software is used to carry out the accounting processes for the preparation of the individual financial statements as well as for the Consolidated Financial Statements. There are clear rules for the access rights of each participant in these processes.

Employees involved in the accounting and reporting process meet the qualitative requirements and participate in training on a regular basis. There is a clear assignment of responsibilities between the specialist units, companies and regional service units involved. We strictly adhere to the principles of segregation of duties and dual control, or the "four-eyes principle." Complex actuarial reports and evaluations are produced by specialized service providers or specially qualified employees.

An internal control system for financial reporting continuously monitors these principles. To this end, methods are provided to ensure that evaluation of the internal control system in financial reporting is structured and uniform across the BASF Group.

The significant risks for the BASF Group regarding a reliable control environment for proper financial reporting are reviewed and updated on an annual basis. Risks are compiled into a central risk catalog.

Moreover, a centralized selection process identifies companies that are exposed to particular risks, that have a material impact on the Consolidated Financial Statements of the BASF Group, or that provide service processes. The selection process is conducted annually. In the relevant companies, one person is given the responsibility of monitoring the execution of the annual evaluation process.

In these companies, the process comprises the following steps:
– **Evaluation of the control environment**
Adherence to internal and external guidelines that are relevant for the maintenance of a reliable control environment is checked by means of a standardized questionnaire and evidenced by sample taking.
– **Identification and documentation of control activities**
In order to mitigate the risks to the financial reporting processes listed in our central risk catalog, critical processes and control activities are documented.
– **Assessment of control activities**
After documentation, a review is performed to verify whether the described controls are capable of adequately covering the risks. In the subsequent test phase, samples are taken to test whether, in practice, the controls were executed as described and effective.
– **Monitoring of control weaknesses**
The managers responsible receive reports on any control weaknesses identified and their resolution, and an interdisciplinary committee investigates their relevance for the BASF Group. The Board of Executive Directors and the Audit Committee are informed once control weaknesses have been identified that have a considerable impact on financial reporting. Only after material control weaknesses have been resolved does the company's managing director confirm the effective internal control system.
– **Internal confirmation of the internal control system**
All managing directors and chief financial officers of each consolidated Group company must confirm to the Board of Executive Directors of BASF SE every half-year and at the end of the annual cycle, in writing, that the internal control system is effective with regard to accounting and reporting.

Short-term opportunities and risks

Development of demand

The development of our sales markets is one of the strongest sources of opportunities and risks. More details on our assumptions regarding short-term growth rates for the global economy, regions and key customer industries, such as the chemicals, automotive and construction sectors, can be found from pages 119 to 121.

We also consider risks from deviations in assumptions. We continue to see a significant macroeconomic risk in an increased slowdown of the Chinese economy, which would have considerable impact on demand for intermediate goods for industrial production as well as investment goods. This would have an effect on emerging markets that export raw materials as well as on advanced economies that specialize in technological goods. Risks to the global economy would also be posed by the possible escalation of geopolitical conflicts and an increased tendency toward protectionism.

Should the macroeconomic environment develop more weakly than we predict, we expect a lower oil price. In this case, we would also expect the euro to depreciate relative to the U.S. dollar as compared with our planning assumptions, as the eurozone's economy shows a high level of dependency on exports and, in times of global economic weakness, the U.S. dollar is preferred by portfolio investors as a safe haven.

Weather-related influences can result in positive or negative effects on our crop protection business.

Margin volatility

We anticipate generally stable margins for the BASF Group in 2017. For some products and value chains, it is possible that margin pressure could be increased by, for example, new capacities or increasing raw material costs. This would have a negative effect on our EBIT.

The year's average oil price for Brent crude was around $44 per barrel in 2016, compared with $52 in the previous year. For 2017, we anticipate an average oil price of $55 per barrel. We therefore expect a moderate increase in price levels for the raw materials and petrochemical basic products that are important to our business. Yet an oil price level below the expected average would pose risks for our oil and gas business, whose EBIT dips by approximately €20 million for every $1 decrease in the average annual barrel price of Brent crude.

Competition

We continuously enhance our products and solutions in order to maintain competitive ability. We watch the market and the competition, and try to take targeted advantage of opportunities and counter emerging risks with fitting measures. Aside from innovation, a major component of competitiveness is a suitable cost structure in order to achieve good business performance on the market.

Regulation and political risks

Risks for us can arise from intensified geopolitical tensions, the destabilization of political systems or new trade sanctions. In addition, risks to the BASF Group can be posed by further regulations on the use or registration of agricultural and other chemicals.

The German federal government's agreement with the E.U. Commission on the treatment of existing self-generated energy in the new Renewable Energy Act (*Erneuerbare-Energien-Gesetz*, or EEG) has removed the previously reported risk of sharply increased charges resulting from the EEG surcharge.

We view the worldwide expansion of renewable energy and measures to increase energy efficiency as an opportunity for increased demand for our products. For example, we offer solutions for wind turbines in addition to insulation foams for buildings. Our catalyst business benefits from the tightening of automobile emissions regulations.

Purchasing and supply chain

We minimize procurement risks through our broad portfolio, global purchasing activities and the purchase of raw materials on spot markets, as well. If possible, we avoid procuring raw materials from a single supplier. When this cannot be avoided, we try to foster competition or we knowingly enter into this relationship and assess the consequences of potential non-delivery. We continuously monitor the credit risk of important business partners.

Production and investments

We try to prevent unscheduled plant shutdowns by adhering to high technical standards and by continuously improving our plants. We reduce the effects of unscheduled shutdowns on the supply of intermediate and end products through diversification within our global production Verbund.

In the event of a production outage – caused by an accident, for example – our global, regional or local emergency response plans and crisis management structures are engaged, depending on the impact scope. Every region has crisis management teams on a local and regional level. They

not only coordinate the necessary emergency response measures, they also initiate the immediate measures for damage control and resumption of normal operations as quickly as possible.

Short-term risks from investments can result from, for example, technical malfunctions or schedule and budget breaches. We counter these risks with highly experienced project management and controlling.

For more on emergency response, see page 100 or basf.com/emergency_response

Acquisitions, divestitures and cooperations

We are constantly watching our environment in order to identify possible targets and develop our portfolio appropriately. In addition, we work together in collaborations with customers and partners to jointly develop new, competitive products and applications.

Personnel

Due to BASF's worldwide compensation principles, the development of personnel expenses is partly dependent on the amount of variable compensation, which is linked to the company's success, among other factors. The correlation between variable compensation and the success of the company has the effect of minimizing risk. Another factor is the development of interest rates for discounting pension obligations. Furthermore, changes to the legal environment of a particular country can have an impact on the development of personnel expenses for the BASF Group. For countries in which BASF is active, relevant developments are therefore constantly monitored in order to recognize risks at an early stage and enable BASF to carry out suitable measures.

For more on our compensation system, see page 44 onward
For more on risks from pension obligations, see page 117

Information technology risks

BASF relies on a number of IT systems. Their nonavailability, violation of confidentiality or the manipulation of data in critical IT systems and applications can all have a direct impact on production and logistics processes. The threat environment has changed in recent years, as attackers have become better organized, use more sophisticated technology, and have far more resources available. If data are lost or manipulated, this can, for example, negatively affect process safety and the accuracy of our financial reporting. Unauthorized access to sensitive data, such as personnel records, competition-related information or research results, can result in legal consequences or jeopardize our competitive position. This would also be accompanied by the associated loss of reputation.

To minimize such risks, BASF uses globally uniform processes and systems to ensure IT security, such as stable and redundantly designed IT systems, backup processes, virus and access protection and encryption systems as well as integrated, Group-wide standardized IT infrastructure and applications. The systems used for information security are constantly tested, continuously updated, and expanded if necessary. In addition, our employees receive regular training on information and data protection. IT-related risk management is conducted using Group-wide regulations for organization and application, as well as an internal control system based on these regulations.

BASF also established a Cyber Defense Center in 2015; is a member of the Cyber Security Sharing and Analytics e.V. (CSSA); and is a founding member of the German Cyber Security Organization (DCSO) together with Allianz SE, Bayer AG and Volkswagen AG.

Legal dispute and proceedings

We constantly monitor current and potential legal disputes and proceedings, and regularly report on these to the Board of Executive Directors and Supervisory Board. In order to assess the risks from current legal disputes and proceedings and any potential need to recognize provisions, we prepare our own analysis and assessment of the circumstances and claims considered. In addition, in individual cases, we consider the results of comparable proceedings and, if needed, independent legal opinions. Risk assessment is particularly based on estimates as to the probability of occurrence and the range of possible claims. These estimates are the result of close cooperation between the affected operating and functional units together with the Legal and Finance units. If sufficient probability is identified, a provision is recognized accordingly for each dispute. Should a provision be unnecessary, general risk management continues to assess whether these litigations nevertheless present a risk for the EBIT of the BASF Group.

We use our internal control system to limit risks from potential infringements of rights or laws. For example, we try to avoid patent and licensing disputes whenever possible through extensive clearance research. As part of our Group-wide Compliance Program, our employees receive regular training.

Financial opportunities and risks

The management of liquidity, currency and interest rate risks is conducted in the Treasury unit. The management of commodity price risks takes place in the Procurement functional unit or in the appropriately authorized Group companies. Detailed guidelines and procedures exist for dealing with financial risks. Among other things, they provide for the segregation of trading and back office functions.

Exchange rate volatility

Our competitiveness on global markets is influenced by fluctuations in exchange rates. For BASF's purchasing, opportunities and risks arise in particular when the U.S. dollar exchange rate fluctuates. A full-year rise in the value of the U.S. dollar/euro exchange rate by $0.01 would result in an increase of around €40 million in the BASF Group's EBIT, assuming other conditions remain the same. On the production side, we counter foreign currency risks by producing in the respective currency zones.

Financial currency risks result from the translation of receivables, liabilities and other monetary items in accordance with IAS 21 at the closing rate into the functional currency of the respective Group company. In addition, we incorporate planned purchase and sales transactions in foreign currencies in our financial foreign currency risk management. These risks are hedged using derivative instruments, if necessary.

Interest rate risks

Interest rate risks result from potential changes in prevailing market interest rates. These can cause a change in the fair value of fixed-rate instruments and fluctuations in the interest payments for variable-rate instruments, which would positively or negatively affect earnings. To hedge these risks, interest rate swaps and combined interest rate and currency derivatives are used in individual cases.

In addition to market interest rates, BASF's financing costs are determined by the credit risk premiums to be paid. These are mainly influenced by our credit rating and the market conditions at the time of issue. In the short to medium term, BASF is largely protected from the possible effects on its interest result thanks to the well-balanced maturity profile of its financial indebtedness.

Risks from metal and raw materials trading

In the catalysts business, BASF employs commodity derivatives for precious metals and trades precious metals on behalf of third parties and on its own account. In addition, we use our knowledge of the markets for crude oil and oil products to generate earnings from the trade of raw materials. To address specific risks associated with these trades, which are not part of our operating business, we set and continuously monitor limits with regard to the type and size of the deals concluded.

Liquidity risks

Risks from fluctuating cash flows are recognized in a timely manner as part of our liquidity planning. We have access to extensive liquidity at any time thanks to our good ratings, our unrestricted access to the commercial paper market and committed bank credit lines. In the short to medium term, BASF is largely protected against potential refinancing risks by the balanced maturity profile of its financial indebtedness as well as through diversification in various financial markets.

For more on financial risks, see the Notes to the Consolidated Financial Statements from page 208 onward

For more on the maturity profile of our financial indebtedness, see the Notes to the Consolidated Financial Statements from page 204 onward

Risk of asset losses

We limit country-specific risks with measures based on internally determined country ratings, which are continuously updated to reflect changing environment conditions. We selectively use investment guarantees to limit specific country-related risks. We lower credit risks for our financial investments by engaging in transactions only with banks with good credit ratings and by adhering to fixed limits. Creditworthiness is continuously monitored and the limits are adjusted accordingly. We reduce the risk of default on receivables by continuously monitoring the creditworthiness and payment behavior of our customers and by setting appropriate credit limits. Due to the global activities and diversified customer structure of the BASF Group, there are no major concentrations of credit default risk. Risks are also limited through the use of credit insurance and bank guarantees.

Impairment risks

The risk of an asset impairment occurs if the assumed interest rate in an impairment test increases, the predicted cash flows decline, or investment projects are suspended. In the current business environment, we consider the risk of impairment of individual assets such as customer relationships, technologies and trademarks, as well as goodwill, to be nonmaterial. Nevertheless, a continuing decline in the price of oil below our assumed planning level would result in impairment risks for the Oil & Gas segment's assets.

Long-term incentive program for senior executives

Our senior executives have the opportunity to participate in a share-price-based compensation program. The need for provisions for this program varies according to the development of the BASF share price and the MSCI World Chemicals Index; this leads to a corresponding increase or decrease in personnel costs.

Risks from pension obligations

Most employees are granted company pension benefits from either defined contribution or defined benefit plans. We predominantly finance company pension obligations externally through separate plan assets. This particularly includes BASF Pensionskasse VVaG and BASF Pensionstreuhand e.V. in Germany, in addition to the large pension plans of our Group companies in North America, the United Kingdom and Switzerland. To address the risk of underfunding due to market-related fluctuations in plan assets, we have investment strategies that align return and risk optimization to the structure of the pension obligations. Stress scenarios are also simulated regularly by means of portfolio analyses. An adjustment to the interest rates used in discounting pension obligations leads immediately to changes in equity. To limit the risks of changing financial market conditions as well as demographic developments, employees have been almost exclusively offered defined contribution plans for future years of service in recent years.

Long-term opportunities and risks

Long-term demand development

We assume that chemical production (excluding pharmaceuticals) will grow considerably faster than global gross domestic product over the next five years and at about the same level as the previous five-year average. Through our market-oriented and broad portfolio, which we will continue to strengthen in the years ahead through investments in new production capacities, research and development activities and acquisitions, we aim to achieve sales growth that slightly exceeds this market growth. Should global economic growth see unexpected, considerable deceleration, due for example to an ongoing weak period in the emerging markets or to geopolitical crises, the expected growth rates could prove too ambitious. As a result of our high degree of diversification across various customer industries and regions, we would still expect our growth to be above the market average, even under these conditions.

For more on the "We create chemistry" strategy, see page 22 onward

Development of competitive and customer landscape

We expect competitors from emerging markets to gain increasing significance in the years ahead. Furthermore, we predict that many raw material suppliers will expand their value chains.

We counter this risk through active portfolio management. We exit markets where risks outweigh opportunities, and in which we see limited possibilities to stand out from our competitors in the long term.

In order to remain competitive, we continuously improve our operational excellence. Our strategic excellence program, DrivE, also contributes to this aim. Starting at the end of 2018, we expect this program to contribute around €1 billion in earnings each year compared with baseline 2015.

In order to achieve lasting profitable growth, tap into new market segments and customers, and make our customers more successful, our research and business focus is on highly innovative business areas, some of which we enter into through strategic cooperative partnerships.

Innovation

The trend toward more sustainability in our customer industries continues. We want to use innovations to take advantage of the resulting opportunities. In the long term, we aim to continue increasing sales and earnings with new and improved products.

BASF's enhanced innovation approach helps the company increase its power of innovation and ensure competitive ability through targeted enhancement and innovative application of specific key technologies. This is achieved by honing the focus of research on topics with long-term strategic business relevance, enhancing existing scientific processes and methods and introducing new ones, and optimizing our organizational structures. The central research areas Process Research & Chemical Engineering, Advanced Materials & Systems Research and Bioscience Research serve as global platforms headquartered in one of the regions particularly significant for us: Europe, Asia Pacific and North America. Together with the development units in our operating divisions, they form the core of the global Know-How Verbund. Stronger regional presence opens up new opportunities to participate in local innovation processes and gain access to local talent. We also address the risk of the technical or economic failure of research and development projects by maintaining a balanced and comprehensive project portfolio, as well as through professional, milestone-based project management.

We optimize the efficiency and effectiveness of our research activities through our global Know-How Verbund as well as through collaboration with partners and customers. Furthermore, we continuously review the chances of success and the underlying conditions of research projects; this

review includes all phases from idea generation to product launch. The trust of customers and consumers is essential for the successful introduction of new technologies. That is why we enter into dialog with stakeholders at an early stage of development.

For more on innovation, see page 32 onward

Portfolio development through investments

We expect the increase in chemical production in emerging markets in the coming years to remain above the global average. This will create opportunities that we want to exploit by expanding our local presence; therefore, more than a quarter of our investment budget will be spent in emerging markets over the next five years. In North America, investments in new production facilities form the basis of future growth. For example, we are constructing an ammonia production plant in Freeport, Texas, with Yara International ASA (based in Oslo, Norway). In addition, we are continuing to evaluate an investment in a world-scale methane-to-propylene complex on the U.S. Gulf Coast and conduct regular assessments with a view to developments in raw material prices and the relevant market conditions.

Our decisions on the type, size and locations of our investment projects are based on assumptions related to the long-term development of markets, margins and costs, as well as raw material availability and country, currency and technology risks. Opportunities and risks arise from potential deviations in actual developments from our assumptions.

For more on our investment plans, see page 123 onward

Acquisitions

In the future, we will continue to refine our portfolio through acquisitions that promise above-average profitable growth, are innovation-driven, offer added value for our customers and reduce the cyclicality of our earnings.

The evaluation of opportunities and risks plays a significant role during the assessment of acquisition targets. A detailed analysis and quantification are conducted as part of due diligence. Examples of risks include increased staff turnover, delayed realization of synergies, and the assumption of obligations that were not precisely quantifiable in advance. If our expectations in this regard are not fulfilled, risks could arise, such as the need to impair intangible assets; however, there could also be opportunities, for example, from additional synergies.

For more on our acquisitions, see page 37 onward

Recruitment and long-term retention of qualified employees

BASF, too, is adjusting in the medium and long term to the rising challenge of gaining skilled employees due to demographic changes, especially in North America and Europe. As a result, there is an increased risk that job vacancies may not be filled with suitable applicants, or only after a delay. We address these risks through our Best Team Strategy and the global initiatives derived from it, covering demographic and knowledge management, Diversity + Inclusion, employee and leadership development, intensified employer branding, and supplementary regional initiatives. With these measures, we increase BASF's attractiveness as an employer and retain our employees in the long term.

For more on the individual initiatives and our goals, see page 40 onward

Sustainability

BASF uses sustainability management tools to identify upcoming opportunities and risks that arise in connection with the topics of environment, society and governance. Their long-term effect on our business activities and their associated relevance are assessed through such instruments as our materiality analysis, and take into account our experiences from constant stakeholder dialog. We have established global monitoring systems to check adherence to laws and our voluntary commitments in the areas of environment, society and governance. These also incorporate our suppliers.

In terms of upcoming opportunities and risks, material aspects identified included: energy and climate, water, resources and ecosystems, responsible production, and employment and employability. In addition to specific requirements for these aspects, discussion is growing surrounding the internalization of external effects.

In order to identify, assess and direct climate-related risks and opportunities, our risk management process includes analyzing the material aspect "energy and climate." For BASF as an energy-intensive company, opportunities and risks arise particularly from regulatory changes, such as in carbon prices through emissions trading systems, taxes or energy legislation.

For more on sustainability management, see page 29 onward
For more on energy and climate protection, see page 103 onward
For more on opportunities and risks from energy policies, see page 114

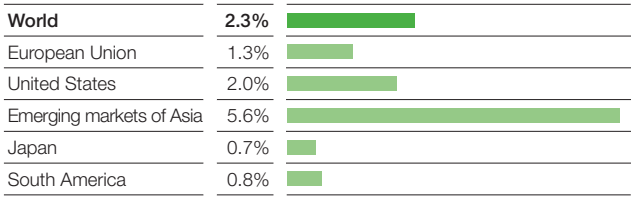
Economic environment in 2017

The global economy will presumably grow by 2.3% in 2017, about as fast as in 2016 (+2.3%). In light of significant political uncertainty, volatility is likely to remain high. We forecast a considerable slowdown in growth in the European Union. For the United States, we currently anticipate a slight upturn in growth. Growth in China is likely to continue its downward trend. We expect the recession in Brazil and Russia to end. We assume that global chemical production will grow by 3.4% in 2017, comparable with the rate of 2016. For 2017, we predict an average price of $55 per barrel for Brent blend crude oil and an exchange rate of $1.05 per euro.

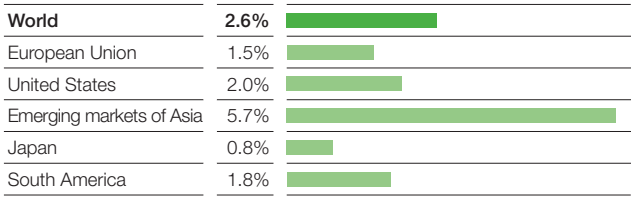
Trends in the global economy in 2017

- Weaker growth likely in the European Union
- Further slowing of growth expected for China
- Slight upturn probable in the United States
- End of recession anticipated for Russia and Brazil

Outlook for gross domestic product 2017
(Real change compared with previous year)



Trends in gross domestic product 2017–2019
(Average annual real change)



Economic growth in the **European Union** is expected to slow down considerably in 2017. In the United Kingdom, uncertainty as to the terms of exit from the European Union is likely to curb investment and private consumption. This weaker dynamic will have a dampening effect on the growth of Britain's E.U. trading partners, including Germany, Italy, France and Spain. Growth will presumably remain at a stable higher level in the eastern E.U. countries. We expect the recession in Russia to end, supported by our forecast of a slight recovery in the oil price.

Following the administration change in the **United States**, economic prospects for the United States are especially difficult to predict. We assume that this uncertainty will be reflected in a greater reluctance to invest in the manufacturing and service sectors. Nevertheless, overall economic growth in 2017 will quicken somewhat, as investments in the oil and gas industry are unlikely to continue declining. While the tax cuts planned by the new U.S. administration could have positive effects on growth, the expected protectionist measures and the stronger U.S. dollar pose risks to the country's economy.

In the **emerging markets of Asia**, we expect growth to continue weakening in 2017. Against the backdrop of economic restructuring in China, we anticipate a further cooldown in economic momentum. We predict growth at levels comparable to 2016 for the other countries in the region. While developments in China will probably exercise a dampening effect, raw material prices and demand for imports from South America and Russia should stabilize. The region's economy is supported by a solidly growing IT and communications industry.

Japan's gross domestic product is expected to maintain its merely minimal upward trend in 2017. Monetary and fiscal policy will continue to provide some growth impetus; however, investment momentum and private consumption will remain on the slow side in an environment of weak domestic demand. Moreover, we do not expect any significant impulses that would boost exports.

We anticipate an end to the economic downturn in **South America**. Leading indicators suggest that Brazil has bottomed out. Falling interest rates and declining inflation could increasingly support readiness to invest in the country; export demand is also likely to rise. We forecast economic recovery in Argentina. Decreasing inflation, a stable exchange rate and a better investment climate should provide impetus for growth.

Outlook for key customer industries

- **Marginally higher growth expected in global industrial production for 2017**

Global industrial production in 2017 is likely to grow marginally faster than in 2016, at 2.3%. This will be largely attributable to the end of the severe recession in South America, where industrial production should once again show slight growth. In the emerging markets of Asia, growth in industrial production will abate slightly, from 5.5% to 5.2%. In the advanced economies, it will probably remain weak, at under one percent.

We expect an economic slowdown in the **transportation sector** overall compared with 2016. After three years of solid growth, automotive production is likely to expand only slowly in western Europe, while other branches of the transportation industry could increase their growth rates. A turnaround can be expected in the Russian automotive market. The eastern European automotive market will begin growing again slightly as a result, even if at a low level. In North America, we expect production to stagnate overall. U.S. automotive production will probably shrink slightly; in Mexico, on the other hand, new production-line startups are expected to lead to growth. In South America, we anticipate slight increases in production once again for 2017. Growth in automotive production in China will weaken after the significant gains seen in 2016.

In the **energy and raw materials sector**, production will presumably grow again in 2017 after stagnating in 2016. However, in Europe and South America, we only anticipate a slight increase in production volumes. Higher raw material prices and the return of stronger demand are likely to provide somewhat faster growth in North America. Production will expand only moderately in the emerging markets of Asia; this will be partly offset by rising imports from Australia.

For the **construction sector**, we are assuming that the solid growth rates will continue overall. Construction volumes will grow only moderately in western Europe. A sharp increase in Germany and weak growth in France and Italy will contrast with a shrinking market in the United Kingdom. In the eastern E.U. countries, construction activity will recover somewhat after the strong declines of the previous year. However, we still see no increase in activity in Russia. Construction in North America is expected to grow at a moderate pace. We do not anticipate growth impetus in the infrastructure sector in the short term; financing conditions and the volume of a potential, state-funded infrastructure program remain unclear. In China, we continue to expect support measures for the construction industry; growth there will nevertheless abate. We still expect the other Asian emerging markets to show stable growth rates in the construction industry. In Japan, government spending programs should ensure additional investments in infrastructure. The construction market in South America is likely to recover somewhat after the declines of recent years. Given a background of continuing weak oil prices, only a slight recovery in construction activity is expected in the Middle East.

Consumer goods production will presumably grow slightly faster in 2017 than in the previous year. The increase will remain weak in western Europe; eastern Europe will see higher rates, albeit somewhat lower than in 2016. After a slight decline in the previous year, we once again expect modest growth in North America. In Asia, which accounts for over half of the world's production of consumer goods, growth will probably remain stable at a high level. For South America, we predict consumer goods output will stagnate following last year's considerable decline.

The **electronics industry** is likely to expand its production at a similarly strong rate as in 2016. We anticipate stable growth in Asia, the center of the global electronics industry, at a level comparable to that of the previous year. The increase will probably be somewhat higher year-on-year in North America.

In the **health and nutrition sector**, growth should once again match the levels of recent years. We expect the increase to be slightly higher overall in the European Union and in North America. The fast pace of growth in this sector in Asia will probably let up slightly in 2017. In this industry, too, we expect production to recover in South America.

We expect stable to slightly accelerating growth in **agricultural production** in 2017, given the low level of agricultural production growth in 2016. Record yields in some regions – of corn and soy in North America and wheat in eastern Europe, for example – contrasted with declining yields in parts of South America and Asia in particular, due to the negative effects of El Niño as well as weaker monsoon rains. Global demand for bioethanol in 2017 will remain dampened by lower prices in the energy sector. Against this backdrop, we expect prices for agricultural raw materials to remain under pressure in 2017.

Outlook for the chemical industry

■ **Global growth in chemical industry at level of previous year**

Global chemical production (excluding pharmaceuticals) will probably grow by 3.4% in 2017, the same pace as 2016 (+3.4%). We anticipate a marginally higher expansion rate in the advanced economies (2016: +0.9%, 2017: +1.1%). Growth in the emerging markets will presumably weaken somewhat (2016: +5.4%, 2017: +5.1%). The global growth rate of the chemical market will be largely determined by developments in China, which accounts for more than a third of worldwide production. There, the upward trend may continue to slacken but producers in China are nevertheless likely to contribute more than two percentage points to worldwide chemical industry growth. Yet macroeconomic risks in China remain high, therefore, our forecast for global chemical growth is marked by particular uncertainty.

Chemical production in the **European Union** is expected to barely grow faster than in 2016. In general, the increase in production will remain modest against the backdrop of a sluggish domestic market. We expect competitive pressure on export markets to remain intense, even though the naphtha-based European chemical industry benefits more from low oil prices than the gas-based production in the United States.

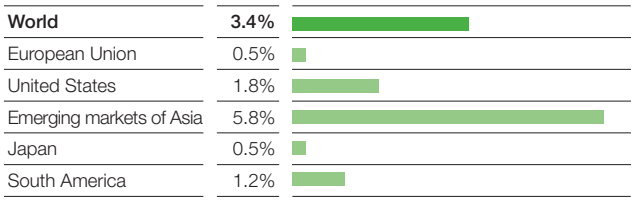
In the **United States**, we expect somewhat faster growth in chemical production, at just under 2%, as new production capacity, which will also be used for export, comes onstream.

Overall chemical growth is likely to decelerate somewhat in the **emerging markets of Asia**, mainly due to the slowdown in China, which will also affect the other developing countries in the region.

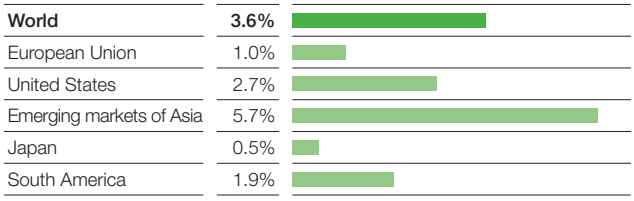
In **Japan**, we presume a weak overall economic environment and minimal growth in chemical production.

In **South America**, the anticipated end of the recession in Argentina and Brazil will result in slight growth in chemical production in the region.

Outlook for chemical production 2017 (excl. pharmaceuticals)
(Real change compared with previous year)



Trends in chemical production 2017–2019 (excl. pharmaceuticals)
(Average annual real change)



Outlook 2017

For 2017, we expect the global economy and chemical production to grow at around the same pace as 2016. We assume an average price of $55 for a barrel of Brent blend crude oil and an exchange rate of $1.05 per euro. In an environment that remains volatile, we aim to grow profitably and considerably raise the BASF Group's sales. For income from operations (EBIT) before special items as well as for EBIT, we anticipate a slight increase compared with the previous year.[1]

For more information on our expectations for the economic environment in 2017, see page 119 onward

Sales and earnings forecast for the BASF Group

- Considerable sales growth through increases in all segments
- Slightly higher EBIT before special items

We expect BASF Group sales to grow considerably in the 2017 business year. This will be supported by slightly higher sales in the Performance Products segment and by considerable increases in the other segments as well as in Other.

We want to slightly raise EBIT before special items compared with 2016. We anticipate considerably higher contributions from the Oil & Gas segment and from Other. In the Performance Products, Functional Materials & Solutions and Agricultural Solutions segments, we assume EBIT before special items will be slightly higher, while the contribution from the Chemicals segment will match the prior-year level.

BASF Group EBIT is also expected to grow slightly in 2017. A significantly higher contribution from the Oil & Gas segment and slight increases in the Chemicals, Performance Products and Agricultural Solutions segments are expected to more than offset the slight declines in the Functional Materials & Solutions segment and in Other. In 2016, EBIT of the Functional Materials & Solutions segment contained special income from divestitures, and EBIT of Other included special income from the sale of assets.

We are likely to once again earn a significant premium on our cost of capital in 2017; compared with the previous year, however, BASF Group EBIT after cost of capital will decrease considerably. The slight rise in EBIT – despite a lower level of special income from divestitures – will be contrasted by higher cost of capital, due for the most part to the acquisition of Chemetall at the end of 2016 as well as the startup of new plants. In the Functional Materials & Solutions segment, we are therefore assuming that EBIT after cost of capital will decline considerably. We aim to boost it slightly in the Chemicals segment and considerably in the other segments.

The significant risks and opportunities that could affect our forecast are described on pages 111 to 118.

Sales and earnings forecast for the segments

Sales in the **Chemicals** segment are likely to grow considerably in 2017. We anticipate higher sales prices as a consequence of rising raw material prices, as well as volumes growth from factors such as the startup of new plants. We assume that strong competitive pressure will continue, especially on the markets for butanediol, isocyanates and caprolactam. EBIT before special items is likely to match the level of 2016. We expect the earnings contribution from the increase in sales volumes to offset both margin pressure and higher fixed costs. Fixed costs will rise especially in the Intermediates division, mainly as a result of scheduled plant turnarounds and initial expenditures for the new acetylene plant in Ludwigshafen.

In the **Performance Products** segment, we expect the market environment to remain challenging, but nevertheless aim to slightly increase sales in 2017. This will be largely supported by volumes growth in all divisions, thanks in part to higher plant capacity utilization rates as well as the startup of new production capacities. We anticipate higher fixed costs in 2017, especially from new plant startups. This rise will be more than offset by strict cost discipline and measures to increase competitiveness in all divisions. As a result, we forecast slightly higher EBIT before special items compared with 2016.

We want to achieve a considerable sales increase in the **Functional Materials & Solutions** segment in 2017. The Chemetall business acquired from Albemarle will contribute to this, as will the sales volumes growth anticipated in all divisions. Our forecast is supported by the expectation of continuing good demand from the automotive and construction industries. The divestitures completed in 2016 in the Catalysts and Coatings divisions, along with a probable decline in precious metal prices, will slow sales growth. As a result of higher sales, EBIT before special items is likely to slightly exceed the level of 2016.

For the **Agricultural Solutions** segment, we anticipate stable market development for crop protection products in 2017. Our goal is to utilize growth potential on the market primarily through the launch of innovative products, growth in the emerging markets – especially Asia – and a strong customer focus. We are planning to increase volumes in 2017 and considerably boost sales levels. Because of ongoing margin pressure in a market environment that remains challenging, we assume a slight increase in EBIT before special items.

[1] With reference to sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0 %).

Forecast by segment[1] (million €)

	Sales		Income from operations (EBIT) before special items	
	2016	Forecast 2017	2016	Forecast 2017
Chemicals[2]	12,905	considerable increase	2,032	at prior-year level
Performance Products[2]	15,558	slight increase	1,777	slight increase
Functional Materials & Solutions	18,732	considerable increase	1,946	slight increase
Agricultural Solutions	5,569	considerable increase	1,087	slight increase
Oil & Gas	2,768	considerable increase	517	considerable increase
Other	2,018	considerable increase	(1,050)	considerable increase
BASF Group	**57,550**	**considerable increase**	**6,309**	**slight increase**

[1] For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0 %).

[2] Effective January 1, 2017, the Chemicals and Performance Products segments' activities for the electronics industry were merged and allocated to the Performance Products segment as the Electronic Materials global business unit. To facilitate comparability, the 2016 figures for both segments have been adjusted accordingly.

Our planning for the 2017 business year in the **Oil & Gas** segment is based on an average price for Brent blend crude oil of $55 per barrel. Gas prices in northwestern Europe are likely to hover above the level of 2016. We anticipate a considerable rise in sales and EBIT before special items. Higher prices for oil and gas and a contribution from our share in the Yuzhno Russkoye natural gas field exceeding that of the previous year will substantially support this development. In 2016, the excess amounts received over previous years were compensated as contractually agreed with our partner, Gazprom.

Sales in **Other** are expected to considerably increase in 2017, primarily as a result of higher prices in raw material trading. We also anticipate a considerable rise in EBIT before special items as compared with 2016.

Investments[3]

■ **Investments of around €3.9 billion planned for 2017**

Our investments in 2016 focused on the Chemicals, Performance Products and Oil & Gas segments. For example, we started up further sections of the TDI production complex in Ludwigshafen, Germany; completed construction of the aroma ingredients complex in Kuantan, Malaysia; and invested in field development projects in Argentina, Norway and Russia.

For 2017, we are planning total capital expenditures of around €3.9 billion for the BASF Group. We have planned capital expenditures totaling €19.0 billion for the period from 2017 to 2021 and will invest more than a quarter of this amount in emerging markets. The average investment volume in the years ahead will therefore remain at the same level as in 2016. Projects currently being planned or underway include:

Capital expenditures: Selected projects

Location	Project
Caojing, China	Construction: automotive coatings plant
Geismar, Louisiana	Capacity expansion: MDI
Ludwigshafen, Germany	Replacement: acetylene plant
	Construction: vitamin A production plant

In the Oil & Gas segment, our currently planned investments of around €4.4 billion between 2017 and 2021 will focus mainly on the development of proven gas and oil deposits in Argentina, Norway and Russia. The actual amount of expenditure is also dependent on oil and gas price developments and will be adjusted as necessary.

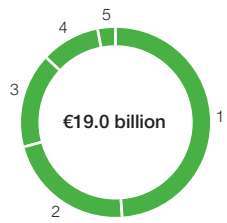
[3] Excluding additions to property, plant and equipment from acquisitions, capitalized exploration, restoration obligations and IT investments

Investments in property, plant and equipment by segment, 2017–2021

1	Chemicals	24%
2	Performance Products	21%
3	Functional Materials & Solutions	15%
4	Agricultural Solutions	4%
5	Oil & Gas	23%
6	Other (infrastructure, R&D)	13%

Investments in property, plant and equipment by region, 2017–2021

1	Europe	49%
2	North America	22%
3	Asia Pacific	16%
4	South America, Africa, Middle East	10%
5	Alternative sites currently being investigated	3%



Dividend

We stand by our ambitious dividend policy and offer our shareholders an attractive dividend yield. We continue to aim to increase our dividend each year, or at least maintain it at the previous year's level.

Information on the proposed dividend can be found from page 12 onward

Financing

Our financing policy is aimed at ensuring our solvency at all times, limiting the risks associated with financing and optimizing our cost of capital. We strive to maintain at least a solid "A" rating, which allows the BASF Group unrestricted access to money and capital markets.

From the scheduled repayment of bonds, we expect cash outflows in the equivalent amount of around €1.4 billion in 2017. To refinance mature bonds and to optimize our maturity profile, we continue to have medium to long-term corporate bonds and our U.S. dollar commercial paper program at our disposal.

Information on our financing policies can be found on page 57

Events after the reporting period

Since the end of the 2016 business year, we have acquired the Henkel Group's western European building material business for professional users and completed the purchase of Rolic AG, an Allschwil, Switzerland-based company primarily active in the display material sector.

For more information, see the Notes to the Consolidated Financial Statements on page 220

3

To Our Shareholders 5
Management's Report 17

Corporate Governance

Consolidated Financial Statements 151
Supplementary Information on the Oil & Gas Segment 221
Overviews 231

Corporate governance report 127

Compliance 134

Management and Supervisory Boards 136
Board of Executive Directors 136
Supervisory Board 137

Compensation report 138

Report of the Supervisory Board 146

Declaration of Conformity as per Section 161 AktG (Stock Corporation Act) 150

Declaration of Corporate Governance 150

Corporate governance report

Board of Executive Directors	Supervisory Board	Shareholders
Manages company and represents BASF SE in business with third parties	Appoints, monitors and advises Board of Executive Directors	Exercise rights of co-administration and supervision at Annual Shareholders' Meeting

Corporate governance refers to the entire system for managing and supervising a company. This includes its organization, values, corporate principles and guidelines as well as internal and external control and monitoring mechanisms. Effective and transparent corporate governance guarantees that BASF is directed and monitored in a responsible manner focused on value creation. It fosters the confidence of our domestic and international investors, the financial markets, our customers and other business partners, employees, and the public in BASF.

The fundamental elements of BASF SE's corporate governance system are: its two-tier system, with a transparent and effective separation of company management and supervision between BASF's Board of Executive Directors and the Supervisory Board; the equal representation of shareholders and employees on the Supervisory Board; and the shareholders' rights of co-administration and supervision at the Annual Shareholders' Meeting.

Direction and management by the Board of Executive Directors

- Board of Executive Directors strictly separated from the Supervisory Board
- Responsible for company management
- Sets corporate goals and strategic direction

The Board of Executive Directors is responsible for the management of the company, and represents BASF SE in business undertakings with third parties. BASF's Board of Executive Directors is strictly separated from the Supervisory Board, which monitors the activity of the Board of Executive Directors and decides on its composition. A member of the Board of Executive Directors cannot simultaneously be a member of the Supervisory Board. As the central duty of company management, the Board of Executive Directors agrees on the corporate goals and strategic direction of the BASF Group as well as its individual business areas; determines the company's internal organization; and decides on the composition of management on the levels below the Board. It also manages and monitors BASF Group business by planning and setting the corporate budget, allocating resources and management capacities, monitoring and making decisions on significant individual measures, and supervising operational management.

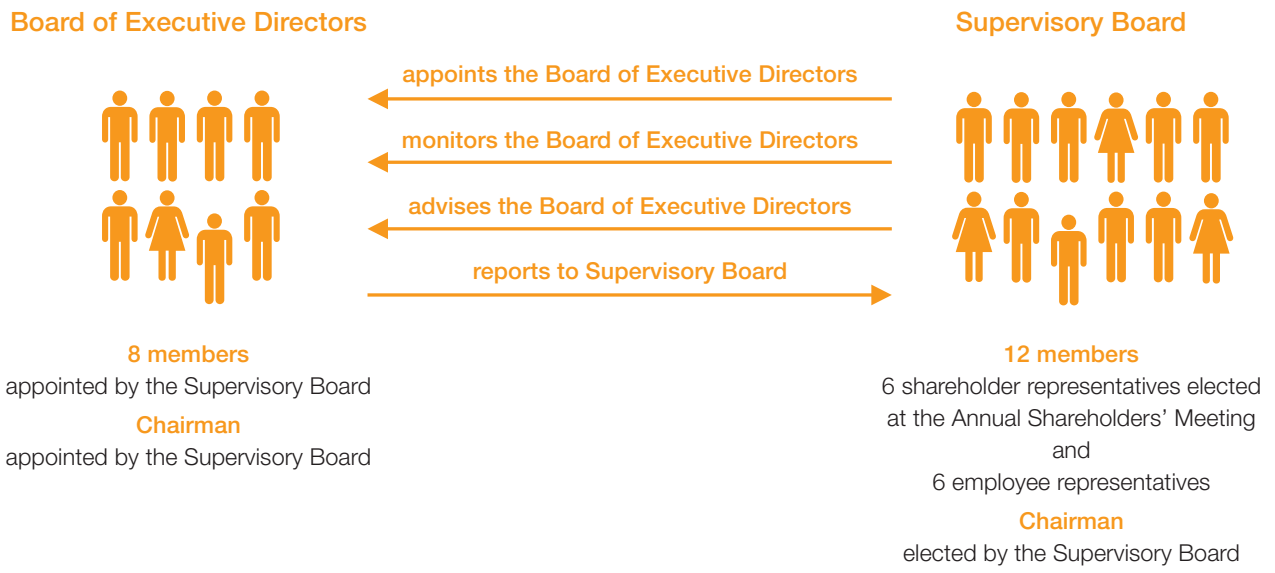
The Board's actions and decisions are geared toward the company's best interests. It is committed to the goal of sustainably increasing the company's value. Among the Board's responsibilities is the preparation of the consolidated and separate financial statements of BASF SE. Furthermore, it must ensure that the company's activities comply with the law and with internal corporate directives. This includes the establishment of appropriate systems for control, compliance and risk management.

Decisions that are reserved for the Board as a whole by law, through the Board of Executive Directors' Rules of Procedure or through resolutions adopted by the Board, are made at regularly held Board meetings called by the Chairman of the Board of Executive Directors. Board decisions are generally based on detailed information and analyses provided by the business areas and specialist units, and, if deemed necessary, by external consultants. Board decisions can generally be made via a simple majority. In the case of a tied vote, the casting vote is given by the Chairman of the Board. However, the Chairman of the Board does not have the right to veto the decisions of the Board of Executive Directors. Members of the Board of Executive Directors are authorized to make decisions individually in their assigned areas of responsibility.

The Board can set up Board Committees to consult and decide on individual issues; these must include at least three members of the Board of Executive Directors. For the preparation of important decisions, such as those on acquisitions, divestitures, investments and personnel, the Board has various commissions at the level below the Board that carefully assess the planned measure and evaluate the associated opportunities and risks, and based on this information, report and make recommendations to the Board – independently of the affected business area.

The Board of Executive Directors informs the Supervisory Board regularly, without delay and comprehensively, of all issues important to the company with regard to planning, business development, risk situation, risk management and compliance. Furthermore, the Board of Executive Directors coordinates the company's strategic orientation with the Supervisory Board.

Two-tier management system of BASF SE



The Statutes of BASF SE define certain transactions that require the Board of Executive Directors to obtain the Supervisory Board's approval prior to their conclusion. Such cases include the acquisition and disposal of enterprises and parts of enterprises, as well as the issue of bonds or comparable financial instruments. However, this is only necessary if the acquisition or disposal price or the amount of the issue in an individual case exceeds 3% of the equity reported in the last approved Consolidated Financial Statements of the BASF Group.

For more on risk management, see the Forecast from page 111 onward

The members of the Board of Executive Directors, including their areas of responsibility and memberships on the supervisory bodies of other companies, are listed on page 136. Compensation of the Board of Executive Directors is described in detail in the Compensation Report from page 138 onward

Supervision of company management by the Supervisory Board

- Supervisory Board appoints, monitors and advises Board of Executive Directors
- Four Supervisory Board committees

The Supervisory Board appoints the members of the Board of Executive Directors and supervises and advises the Board on management issues. As members of the Supervisory Board cannot simultaneously be on the Board of Executive Directors, a high level of autonomy is already structurally ensured with regard to the supervision of the Board of Executive Directors.

In addition to the SE Council Regulation, the relevant legal basis for the size and composition of the Supervisory Board is provided by the Statutes of BASF SE and the Agreement Concerning the Involvement of Employees in BASF SE (Employee Participation Agreement), which also includes the regulations applicable to BASF for implementing the gender quota for the Supervisory Board mandated by law as of January 1, 2016. The German Codetermination Act does not apply to BASF as a European stock corporation (Societas Europaea, SE).

The Supervisory Board of BASF SE comprises twelve members. Six members are elected to a five-year term each by the shareholders at the Annual Shareholders' Meeting. The remaining six members are elected by the BASF Europa Betriebsrat (BASF Works Council Europe), the European employee representation body of the BASF Group.

The meetings of the Supervisory Board and its committees are called by their chairmen and, independently, at the request of one of their members or the Board of Executive Directors. Resolutions of the Supervisory Board are passed by a simple majority vote of the participating members. In the event of a tie, the vote of the Chairman of the Supervisory Board, who must always be a shareholder representative, shall be the casting vote. This resolution process is also applicable for the appointment and dismissal of members of the Board of Executive Directors by the Supervisory Board. Resolutions can, as needed, also be made in writing or through other means of communication outside of the meetings, as long as no member objects to this form of passing a resolution.

BASF SE's Supervisory Board has established a total of four Supervisory Board Committees: the Personnel Committee, the Audit Committee, the Nomination Committee and the Strategy Committee.

For more on the Statutes of BASF SE and the Employee Participation Agreement, see basf.com/en/cg/investor

The members of the Supervisory Board of BASF SE, including their membership on the supervisory bodies of other companies, are listed on page 137

Compensation of the Supervisory Board is described in the Compensation Report from page 144 onward

Personnel Committee

Members:
Dr. Jürgen Hambrecht (chairman), Michael Diekmann, Robert Oswald, Michael Vassiliadis

Duties:
- Prepares the appointment of members to the Board of Executive Directors by the Supervisory Board as well as the employment contracts to be entered into with members of the Board of Executive Directors
- When making recommendations for appointments to the Board of Executive Directors, considers professional qualifications, international experience and leadership skills as well as long-term succession planning, diversity, and especially the appropriate consideration of women
- Prepares the resolutions made by the Supervisory Board with regard to the system and amount of compensation paid to members of the Board of Executive Directors

Audit Committee

Members:
Dame Alison Carnwath DBE (chairman), Ralf-Gerd Bastian, Franz Fehrenbach, Michael Vassiliadis

Duties:
- Prepares the negotiations and resolutions of the Supervisory Board for the approval of the Financial Statements and Consolidated Financial Statements, and discusses the quarterly statements and half-year financial reports with the Board of Executive Directors prior to their publication
- Deals with monitoring the financial reporting process, the annual audit, the effectiveness of the internal control system, the risk management system, and the internal auditing system as well as compliance issues
- Is responsible for business relations with the company's external auditor: prepares the Supervisory Board's proposal to the Annual Shareholders' Meeting regarding the selection of an auditor, monitors the auditor's independence, defines the focus areas of the audit together with the auditor, negotiates auditing fees and establishes the conditions for the provision of the auditor's nonaudit services
- Is authorized to request any information that it deems necessary from the auditor or Board of Executive Directors; can also view all of BASF's business documents and examine these and all other assets belonging to BASF. The Audit Committee can also engage experts such as auditors or lawyers to carry out these inspections

Financial Experts:
Dame Alison Carnwath DBE and Franz Fehrenbach are members with special knowledge of, and experience in, applying accounting and reporting standards and internal control methods pursuant to the German Corporate Governance Code.

Nomination Committee

Members:
Dr. Jürgen Hambrecht (chairman), Dame Alison Carnwath DBE, Prof. Dr. François Diederich, Michael Diekmann, Franz Fehrenbach, Anke Schäferkordt

Duties:
- Identifies suitable candidates for the Supervisory Board based on objectives for the composition decided on by the Supervisory Board
- Prepares the recommendations made by the Supervisory Board for the election of Supervisory Board members for the Annual Shareholders' Meeting

Strategy Committee

Members:
Dr. Jürgen Hambrecht (chairman), Dame Alison Carnwath DBE, Michael Diekmann, Robert Oswald, Michael Vassiliadis

Duties:
- Handles the further development of the company's strategy
- Prepares resolutions of the Supervisory Board on the company's major acquisitions and divestitures

Meetings and meeting attendance

In the 2016 business year, meetings were held as follows:
- The Supervisory Board met five times.
- The Personnel Committee met four times.
- The Audit Committee met five times.
- The Nomination Committee met once.
- The Strategy Committee did not meet.

With the exception of one Supervisory Board meeting at which one member was absent due to illness, all respective members attended all meetings of the Supervisory Board and its committees.

For more on the Supervisory Board's activities and resolutions in the 2016 business year, see the Report of the Supervisory Board on page 146

For an individual overview of meeting attendance, see basf.com/governance/supervisoryboard/meetings

Objectives for Supervisory Board composition

Composition criteria: professional and personal qualifications, diversity, and independence

One important concern of good corporate governance is to ensure that seats on the responsible corporate bodies, the Board of Executive Directors and the Supervisory Board, are appropriately filled. Seats on the Board of Executive Directors and Supervisory Board of BASF SE should be filled with members who ensure a well-balanced consideration of all the knowledge, skills and personal qualifications necessary to manage and supervise BASF as a large, globally operating, capital market-oriented company in the chemical industry.

On October 21, 2010, the Supervisory Board agreed upon objectives for the composition of the Supervisory Board in accordance with Section 5.4.1 of the German Corporate Governance Code; these were supplemented in the Supervisory Board meetings of December 20, 2012, and October 22, 2015. According to these objectives, the Supervisory Board shall be composed in such a way that the members as a group possess knowledge, ability and expert experience in the following:

– The management of an internationally operating company
– Cross-industry value creation along different value chains
– The application of accounting principles and internal control procedures
– The field of technical and scientific innovations in the chemical sector and associated industries as well as in the sectors using chemical products.

At least one independent member of the Supervisory Board must have expertise in the fields of accounting or auditing as per Section 100(5) of the German Stock Corporation Act (AktG). With regard to diversity, the Supervisory Board shall consider a variety of professional and international experience as well as the participation of women. Individuals who may have a conflict of interest shall not be nominated for election to the Supervisory Board. The same applies to candidates who will have reached the age of 70 by the day of the election. Membership on the Supervisory Board should generally not exceed 15 years; this corresponds to three regular statutory periods in office. The members of the Supervisory Board elected at the Annual Shareholders' Meeting already fulfill this target – in effect since October 2015 – with one exception.

With regard to independence, the Supervisory Board aims to ensure that all Supervisory Board members are independent as defined by the terms of the Code. In assessing independence, the Supervisory Board assumes that neither election as an employee representative, nor membership on the Board of Executive Directors more than two years in the past, nor the duration of membership on the Supervisory Board, taken in isolation, precludes the classification as independent.

On this basis, the Supervisory Board has determined that all of its current members can be considered independent. We firmly believe that the current composition fulfills the objectives with the aforementioned exception regarding the period of membership.

Commitments to promote the participation of women in leadership positions at BASF SE

Minimum quota on Supervisory Board, target figures for Board of Executive Directors and top management

On April 24, 2015, the Law on Equal Participation of Women and Men in Leadership Positions in the Private and Public Sector came into force in Germany.

The supervisory board of a publicly listed European society (SE) that is composed of the same number of shareholder and employee representatives must, according to Section 17(2) of the SE Implementation Act, consist of at least 30% each of women and men. The Supervisory Board of BASF SE currently comprises three women and nine men. Two of the six shareholder representatives elected at the Annual Shareholders' Meeting are women. According to the legal stipulations of Section 17(2) SE Implementation Act, the minimum quota is not to be fulfilled immediately but rather upon any necessary reappointments, that is, new elections. In 2016, the employee-elected Supervisory Board member Wolfgang Daniel left the Supervisory Board. He is succeeded by Waldemar Helber, who joined the Supervisory Board without additional appointment, that is, without election, as the member personally chosen to replace Wolfgang Daniel as early as 2013 until the end of the 2019 Annual Shareholders' Meeting. In accordance with legal regulations, the legal minimum quota will therefore be reached after the next regular Supervisory Board election in 2019 at the latest.

As a target figure for the Board of Executive Directors, the Supervisory Board determined, in accordance with Section 111(5) AktG for the first target-attainment period after the law's entry into force, that the Board of Executive Directors should have at least one female member. With eight members of the Board of Executive Directors, this represents 12.5%. Both at the time the target was set, and by the target-attainment deadline on December 31, 2016, the Board of Executive Directors contained one woman. The stipulation was therefore met.

In addition, the Board of Executive Directors decided on target figures for the percentage of women in the two management levels below the Board of Executive Directors of BASF SE as per the legal requirements in Section 76(4) AktG: These were at 9.4% for the leadership level directly below the Board, and 11.8% for the level below that. This corresponded to the status at the time these target figures were determined.

On December 31, 2016, the deadline for attainment of these goals, the percentage of women in the first level of management under the Board of Executive Directors of BASF SE was at 12.1%. The percentage of women in management one level below that was 7.3%.

We do not regard these deviations as meaningful, as BASF views the further development and promotion of women as a global duty independent of individual Group companies. We set ourselves ambitious goals for this and made further progress in 2016. The focus goes beyond gender quotas, and includes, for example, increasing international representation.

BASF will continue working on expanding the percentage of women in its leadership team. The company is carrying out, and constantly enhancing, worldwide measures to this effect.

By the end of the first target-attainment period, new target figures were set for BASF SE: The Supervisory Board determined as a target figure for the Board of Executive Directors that the Board of Executive Directors of BASF SE should continue to have at least one female member. With eight current members of the Board of Executive Directors, this represents a proportion of 12.5%. The Board of Executive Directors also decided on target figures for the proportion of women in the two management levels below the Board of Executive Directors of BASF SE: Women are to make up 12.1% of the leadership level directly below the Board, and the level below that is to comprise 7.3% women. This corresponds to the status at the time these target figures were determined. The deadline for achieving these new goals was set for December 31, 2021.

The November 2015 Employee Participation Agreement relevant to the composition of the Supervisory Board is available at basf.com/en/governance

For more on women in executive positions in the BASF Group worldwide, see page 26

For more on the inclusion of diversity, including promotion of women, see the chapter on Working at BASF in the Management's Report on page 43

Shareholders' rights

- Shareholders' rights of co-administration and supervision at the Annual Shareholders' Meeting
- One share, one vote

Shareholders exercise their rights of co-administration and supervision at the Annual Shareholders' Meeting, which usually takes place within the first five months of the business year. The Annual Shareholders' Meeting elects half of the members of the Supervisory Board and, in particular, decides on the formal discharge of the Board of Executive Directors and the Supervisory Board, the distribution of profits, capital measures, the authorization of share buybacks, changes to the Statutes and the selection of the auditor.

Each BASF SE share represents one vote. All of BASF SE's shares are registered shares. Shareholders are obliged to have themselves entered with their shares into the company share register and to provide the information necessary for registration in the share register according to the German Stock Corporation Act. There are no registration restrictions and there is no limit to the number of shares that can be registered to one shareholder. Only the persons listed in the share register are entitled to vote as shareholders. Listed shareholders may exercise their voting rights at the Annual Shareholders' Meeting either personally, through a representative of their choice or through a company-appointed proxy authorized by the shareholders to vote according to their instructions. There are neither voting caps to limit the number of votes a shareholder may cast nor special voting rights. BASF has fully implemented the principle of "one share, one vote."

All shareholders entered in the share register are entitled to participate in the Annual Shareholders' Meetings, to have their say concerning any item on the agenda and to request information about company issues insofar as this is necessary to make an informed judgment about the item on the agenda under discussion. Registered shareholders are also entitled to file motions pertaining to proposals for resolutions made by the Board of Executive Directors and Supervisory Board at the Annual Shareholders' Meeting and to contest resolutions of the Meeting and have them evaluated for their lawfulness in court.

Shareholders who hold at least €500,000 of the company's share capital, a quota corresponding to 390,625 shares, are furthermore entitled to request that additional items be added to the agenda of the Annual Shareholders' Meeting.

Implementation of the German Corporate Governance Code

- BASF SE follows all recommendations of German Corporate Governance Code

BASF advocates responsible corporate governance that focuses on sustainably increasing the value of the company.

BASF SE follows all recommendations of the German Corporate Governance Code in its most recently revised version of May 2015. In the same manner, BASF has followed nearly all of the nonobligatory suggestions of the German Corporate Governance Code. We have not implemented the suggestion to enable shareholders to follow the proceedings of the entire Annual Shareholders' Meeting online. The Annual Shareholders' Meeting is publicly accessible via online broadcast until the end of the speech by the Chairman of the Board of Executive Directors. The subsequent discussion of items on the agenda is not accessible online in order to preserve the character of the Annual Shareholders' Meeting as a meeting attended by our shareholders on-site.

The joint Declaration of Conformity 2016 by the Board of Executive Directors and Supervisory Board of BASF SE is rendered on page 150

For more on the Declaration of Conformity 2016, the implementation of the Code's suggestions and the German Corporate Governance Code, see basf.com/en/governance

Disclosure according to Section 315(4) of the German Commercial Code (HGB) and the explanatory report of the Board of Executive Directors according to Section 176(1) Sentence 1 of the German Stock Corporation Act (AktG)

As of December 31, 2016, the subscribed capital of BASF SE was €1,175,652,728.32 divided into 918,478,694 registered shares with no par value. Each share entitles the holder to one vote at the Annual Shareholders' Meeting. Restrictions on the right to vote or transfer shares do not exist. The same rights and duties apply to all shares. According to the Statutes, shareholders are not entitled to receive share certificates. There are neither different classes of shares nor shares with preferential voting rights (golden shares).

The appointment and dismissal of members of the Board of Executive Directors is legally governed by the regulations in Article 39 of the SE Council Regulation, Section 16 of the SE Implementation Act and Sections 84, 85 AktG as well as Article 7 of the BASF SE Statutes. Accordingly, the Supervisory Board determines the number of members of the Board of Executive Directors (at least two), appoints the members of the Board of Executive Directors, and can nominate a chairperson, as well as one or more vice chairpersons. The members of the Board of Executive Directors are appointed for a maximum of five years, and reappointments are permissible. The Supervisory Board can dismiss a member of the Board of Executive Directors if there is serious cause to do so. Serious cause includes, in particular, a gross breach of the duties pertaining to the Board of Executive Directors and a vote of no confidence at the Annual Shareholders' Meeting. The Supervisory Board decides on appointments and dismissals according to its own best judgment.

According to Article 59(1) SE Council Regulation, amendments to the Statutes of BASF SE require a resolution of the Annual Shareholders' Meeting adopted with at least a two-thirds majority of the votes cast, provided that the legal provisions applicable to German stock corporations under the German Stock Corporation Act do not stipulate or allow for larger majority requirements. In the case of amendments to the Statutes, the Section 179(2) of the German Stock Corporation Act requires a majority of at least three-quarters of the subscribed capital represented. Pursuant to Article 12(6) of the Statutes of BASF SE, the Supervisory Board is authorized to resolve upon amendments to the Statutes that merely concern their wording. This applies in particular to the adjustment of the share capital and the number of shares after the redemption of repurchased BASF shares and after a new issue of shares from the authorized capital.

Until May 1, 2019, the Board of Executive Directors of BASF SE is empowered by a resolution passed at the Annual Shareholders' Meeting of May 2, 2014, to increase the subscribed capital – with the approval of the Supervisory Board – by a total amount of €500 million through the issue of new shares against cash or contributions in kind (authorized capital). A right to subscribe to the new shares shall be granted to shareholders. This can also be done by a credit institution acquiring the new shares with the obligation to offer these to shareholders (indirect subscription right). The Board of Executive Directors is authorized to exclude the statutory subscription right of shareholders to a maximum amount of a total of 20% of share capital in certain exceptional cases that are defined in Section 5(8) of the BASF SE Statutes. This applies in particular if, for capital increases in return for cash contributions, the issue price of the new shares is not substantially lower than the stock market price of BASF shares and the total number of shares issued under this authorization is not more than 10% of the stock of shares on the date of issue or, in eligible individual cases, to acquire companies or shares in companies in exchange for surrendering BASF shares.

At the Annual Shareholders' Meeting on April 27, 2012, the Board of Executive Directors was authorized to purchase up to 10% of the shares existing at the time of the resolution (10% of the company's share capital) until April 26, 2017. At the discretion of the Board of Executive Directors, the purchase can take place on the stock exchange or by way of a public purchase offer directed to all shareholders. The Board of Executive Directors is authorized to sell the repurchased company shares (a) through a stock exchange, (b) through a public offer directed to all shareholders and – with the approval of the Supervisory Board – to third parties, (c) for a cash payment that is not significantly lower than the stock exchange price at the time of sale and (d) for contributions in kind, particularly in connection with the acquisition of companies, parts of companies or shares in companies or in connection with mergers. In the cases specified under (c) and (d), the shareholders' subscription right is excluded. The Board of Executive Directors is furthermore authorized to redeem the shares bought back and to reduce the share capital by the proportion of the share capital accounted for by the redeemed shares.

Bonds issued by BASF SE grant the bearer the right to request early repayment of the bonds at nominal value if one person – or several persons acting in concert – hold or acquire a BASF SE share volume after the time of issuance which corresponds to more than 50% of the voting rights (change of control), and one of the rating agencies named in the bond's terms and conditions withdraws its rating of BASF SE or the bond, or reduces it to a noninvestment grade rating within 120 days after the change-of-control event.

In the event of a change of control, members of the Board of Executive Directors shall, under certain additional conditions, receive compensation (details of which are listed in the Compensation Report on page 144). A change of control is assumed when a shareholder informs BASF of a shareholding of at least 25% or the increase of such a holding. In addition, employees of BASF SE and its subsidiaries who are classed as senior executives will receive a severance payment if their contract of employment is terminated by BASF within 18 months of the occurrence of a change of control, provided the employee has not given cause for the termination. The employee whose service contract has been terminated in such a case will receive a maximum severance payment of

1.5 times the annual salary (fixed component) depending on the number of months that have passed since the change-of-control event.

The remaining specifications stipulated in Section 315(4) HGB refer to situations that are not applicable to BASF SE.

For more on bonds issued by BASF SE, see basf.com/en/investor/bonds

Directors' and Officers' liability insurance

BASF SE has taken out liability insurance that covers the activities of members of the Board of Executive Directors and the Supervisory Board (D&O insurance). This policy provides for the level of deductibles for the Board of Executive Directors as prescribed by Section 93(2)(3) AktG and for the level of deductibles for the Supervisory Board as recommended in Section 3.8(3) of the German Corporate Governance Code.

Share ownership by Members of the Board of Executive Directors and the Supervisory Board

No member of the Board of Executive Directors or the Supervisory Board owns shares in BASF SE and related options or other derivatives that account for 1% or more of the share capital. Furthermore, the total volume of BASF SE shares and related financial instruments held by members of the Board of Executive Directors and the Supervisory Board accounts for less than 1% of the shares issued by the company.

Share dealings of the Board of Executive Directors and Supervisory Board (obligatory reportable and publishable directors' dealings under Article 19(1) of the E.U. Market Abuse Regulation 596/2014 (MAR))

As legally stipulated by Article 19(1) MAR, all members of the Board of Executive Directors and the Supervisory Board as well as certain members of their families are required to disclose the purchase or sale of financial instruments of BASF SE (e.g., shares, bonds, options, forward contracts, swaps) to the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht) and to the company if transactions within the calendar year exceed the threshold of €5,000.

In 2016, a total of four purchases by members of the Board of Executive Directors and the Supervisory Board and members of their families subject to disclosure were reported as Directors' Dealings, involving between 417 and 2,660 BASF shares. The price per share was between €62.43 and €67.88. The volume of the individual trades was between €26,033.31 und €180,567.16. The disclosed share transactions are published on the website of BASF SE.

For more on securities transactions reported in 2016, see basf.com/en/governance/sharedealings

Information on the auditor

The Annual Shareholders' Meeting of April 29, 2016, once again elected KPMG AG Wirtschaftsprüfungsgesellschaft as the auditor of the BASF Group Consolidated Financial Statements and Separate Financial Statements of BASF SE for the 2016 business year, as well as for those reports' corresponding Management's Reports. KPMG member firms also audit the majority of companies included in the Consolidated Financial Statements. KPMG has been the continuous auditor of BASF SE since the 2006 Financial Statements; the 2015 Financial Statements marked the tenth annual report in a row audited by KPMG. For this reason, a public call to tender was made to all auditors for the audit of the 2016 Consolidated and Separate Financial Statements, in line with the E.U. Regulation 537/2014 of April 16, 2014. Based on the results of the tendering process, the Audit Committee recommended to the Supervisory Board that it once again propose KPMG for election. After completing the tendering process, KPMG can now be proposed for election at the Annual Shareholders' Meeting as BASF's auditor without further tendering processes up to and including the 2024 business year. Hans-Dieter Krauß has been the auditor responsible for the Consolidated Financial Statements since auditing the 2010 Financial Statements. Since the 2013 Financial Statements, the auditor responsible for the separate financial statements has been Alexander Bock.

The total fee paid to KPMG and auditing firms of the KPMG group by BASF SE and other BASF Group companies for non-audit services, in addition to the auditing fee, was €1 million in 2016. This represents around 5.7% of the fees for auditing the financial statements.

For more information, see Note 33 of the Consolidated Financial Statements on page 219

Compliance

Code of Conduct	More than 25,000	63 audits
Forms core of our Compliance Program	Participants in compliance training	Conducted internally on compliance

Our Group-wide Compliance Program aims to ensure adherence to legal regulations and the company's internal guidelines. This topic has been integrated into our "We create chemistry" strategy. Our employee Code of Conduct firmly embeds these mandatory standards into day-to-day business. Members of the Board of Executive Directors are also expressly obligated to follow these principles.

Compliance Program and Code of Conduct

- Compliance standards integrated into corporate values
- Regular compliance training for employees

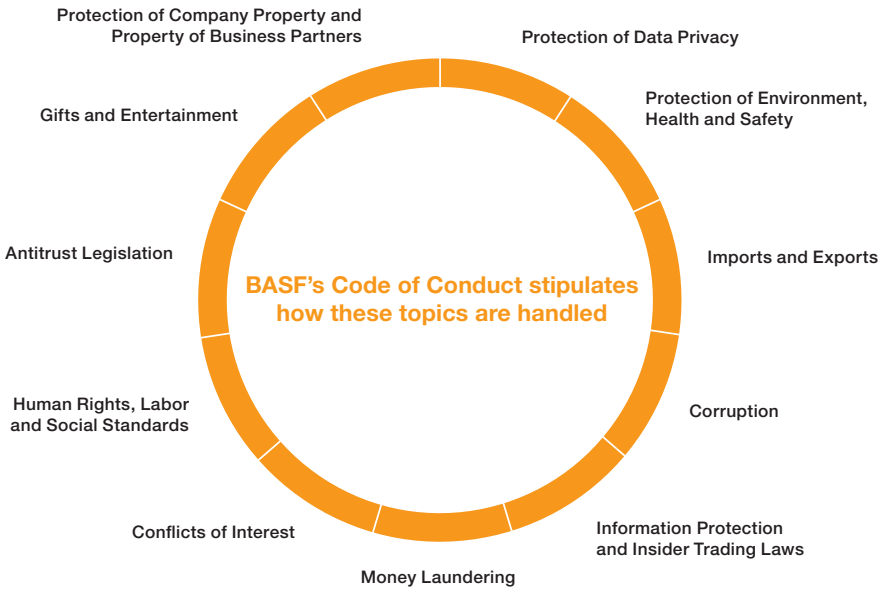
Based on international standards, BASF's Compliance Program combines important laws and company-internal policies – themselves exceeding legal requirements – with external voluntary commitments to create a framework that regulates how all BASF employees interact with business partners, officials, colleagues and society. At the core of our Compliance Program is the global, standardized Code of Conduct received by every employee. All employees and managers are obligated to adhere to its guidelines, which describe our principles for proper conduct and cover topics ranging from corruption and antitrust laws to human rights, labor and social standards, conflicts of interest and trade control, and protection of data privacy.

Abiding by compliance standards is the foundation of responsible leadership. This has been expressly embedded in our values, where we state: "We strictly adhere to our compliance standards." We are convinced that compliance with these standards will not only prevent the disadvantages associated with violations, such as penalties and fines; we also view compliance as the right path toward securing our company's long-term success.

Our efforts are principally aimed at preventing violations from the outset. To this end, all employees are required within a prescribed time frame to take part in basic compliance training, refresher courses and special tutorials dealing with, for example, antitrust legislation, taxes or trade control regulations. Training takes place in different formats, including face-to-face training, e-learning or workshops. The course materials and formats are constantly being updated. In total, more than 25,000 participants worldwide received around 40,000 hours of compliance training in 2016.

For more on the BASF Code of Conduct, see basf.com/code_of_conduct

BASF's Code of Conduct



Compliance culture at BASF

We firmly believe that for corporate responsibility to be a success, there must be an active culture of living these guidelines within the company. This culture takes years to develop, and requires the consistent, reliable application of compliance standards. Because we introduced our Code of Conduct early on, these standards have already been firmly established and are undisputed. In our last Global Employee Survey, conducted in 2015, the vast majority of our employees confirmed that their work environment places high value on proper conduct in alignment with internal company guidelines and standards. Starting in 2015, we have now investigated all cases in which the answer to the corresponding question showed unit-specific anomalies, and held, for instance, additional seminars or workshops as necessary.

Monitoring adherence to our Compliance principles

- Central role of Chief Compliance Officer and compliance officers
- 56 external hotlines worldwide
- Numerous internal Compliance audits

BASF's Chief Compliance Officer (CCO) reports directly to the Board of Executive Directors and manages the implementation of our Compliance Management System, supported by 104 compliance officers worldwide. The CCO regularly reports to the Board of Executive Directors on progress in the program's implementation as well as on any significant findings. Furthermore, the CCO reports to the Supervisory Board's Audit Committee in at least one of its meetings each year on the status of the Compliance Program as well as any major developments. In the event of significant incidents, the Audit Committee is immediately informed by the Board of Executive Directors.

We particularly encourage our employees to actively and promptly seek guidance if in doubt. For this, they can consult not only their managers but also dedicated specialist departments and company compliance officers. We have also set up 56 external hotlines worldwide which our employees can turn to anonymously. We make sure that all concerns are processed and answered in a swift manner.

In 2016, 278 calls and emails were received by our external hotlines (2015: 357). Concerns involved questions ranging from personnel management and handling of company property to information on the behavior of business partners or human rights issues – such as labor and social standards. We continued to observe increasing awareness when it came to potential conflicts of interest. We launched case-specific investigations, in accordance with applicable law and internal regulations, into all cases of suspected misconduct that we became aware of. Confirmed violations were penalized, up to and including dismissal. This involved making sure that the necessary action was taken in accordance with standardized company criteria.

BASF's Corporate Audit department monitors adherence to compliance principles, covering all areas in which compliance violations could occur. They check that employees uphold regulations and make sure that the established processes, procedures and monitoring tools are appropriate and sufficient to minimize potential risk or preclude violations in the first place. In 2016, 63 Group-wide audits of this kind were performed (2015: 92). The audits confirmed the effectiveness of the compliance management system. No irregularities were shown in the audit's focus areas of antitrust and trade controls and embargo, nor was there a major need for action identified beyond these topics.

Based on the Guideline on Business Partner Due Diligence introduced in 2015, we monitor our business partners in sales for potential compliance risks. This is done by means of a checklist, a questionnaire distributed to business partners, and an internet-based analysis. The results are then documented. Depending on the results, conclusions are drawn regarding whether and how to maintain the business relationship. We furthermore expect all suppliers to know of and act in accordance with our global Code of Conduct.

We support the United Nations' Guiding Principles on Business and Human Rights and are constantly working to enhance our internal guidelines and processes in keeping with these principles. For example, we introduced a new internal guideline to respect international labor and social standards. Outside of our company, as well, we support respect for human rights and the fight against corruption: We are, for example, a founding member of the United Nations Global Compact. As a member of Transparency International Deutschland and the Partnering Against Corruption Initiative (PACI) of the World Economic Forum, we assist in the implementation of these organizations' objectives.

For more on human rights and labor and social standards, see basf.com/human_rights

For more on suppliers, see page 92 onward

Management and Supervisory Boards
Board of Executive Directors

There were eight members on the Board of Executive Directors of BASF SE as of December 31, 2016

Dr. Kurt Bock
Chairman of the Board of Executive Directors
Degree: Business Administration, 58 years old, 26 years at BASF

Responsibilities: Legal, Taxes, Insurance & Intellectual Property; Corporate Development; Corporate Communications & Government Relations; Senior Executive Human Resources; Investor Relations; Compliance

First appointed: 2003, **Term expires:** 2021

Supervisory Board memberships (excluding internal memberships):
Fresenius Management SE (since May 13, 2016)

Dr. Martin Brudermüller
Vice Chairman of the Board of Executive Directors
Degree: Chemistry, 55 years old, 29 years at BASF

Responsibilities: Petrochemicals; Monomers; Intermediates; Process Research & Chemical Engineering; Innovation Management; Digitalization in Research & Development; Corporate Technology & Operational Excellence; BASF New Business

First appointed: 2006, **Term expires:** 2021

Dr. Hans-Ulrich Engel
Degree: Law, 57 years old, 29 years at BASF

Responsibilities: Finance; Oil & Gas; Procurement; Supply Chain Operations & Information Services; Corporate Controlling; Corporate Audit

First appointed: 2008, **Term expires:** 2021

Internal memberships as defined in Section 100(2) of the German Stock Corporation Act:
Wintershall Holding GmbH (Chairman of the Supervisory Board)
Wintershall AG (Chairman of the Supervisory Board)
Comparable German and non-German controlling bodies:
Nord Stream AG (member of the Shareholders' Committee)

Sanjeev Gandhi
Degrees: Chemical Engineering, Business Administration, 50 years old, 23 years at BASF

Responsibilities: Greater China & Functions Asia Pacific; South & East Asia, ASEAN & Australia/New Zealand

First appointed: 2014, **Term expires:** 2018

Michael Heinz
Degree: Business Administration, 52 years old, 33 years at BASF

Responsibilities: Dispersions & Pigments; Care Chemicals; Nutrition & Health; Performance Chemicals; Advanced Materials & Systems Research; Region South America

First appointed: 2011, **Term expires:** 2019

Dr. Harald Schwager
Degree: Chemistry, 56 years old, 29 years at BASF

Responsibilities: Construction Chemicals; Crop Protection; Bioscience Research; Region Europe

First appointed: 2008, **Term expires:** 2017

Wayne T. Smith
Degrees: Chemical Engineering, Business Administration, 56 years old, 13 years at BASF

Responsibilities: Catalysts; Coatings; Performance Materials; Market & Business Development, Site & Verbund Management North America; Regional Functions & Country Platforms North America

First appointed: 2012, **Term expires:** 2020

Margret Suckale
Degrees: Law, Business Administration, 60 years old, 8 years at BASF

Responsibilities: Engineering & Maintenance; Environmental Protection, Health & Safety; European Site & Verbund Management; Human Resources

First appointed: 2011, **Term expires:** 2017

Comparable German and non-German controlling bodies:
BASF Antwerpen N.V. (Chairwoman of the Administrative Council)

Changes as of May 13, 2017:

Following the Annual Shareholders' Meeting on May 12, 2017, Margret Suckale and Dr. Harald Schwager will leave the Board of Executive Directors. The Supervisory Board will then appoint Saori Dubourg and Dr. Markus Kamieth as new members of the Board of Executive Directors:

Saori Dubourg
Degree: Business Administration, 45 years old, 20 years at BASF

Responsibilities: Construction Chemicals; Crop Protection; Bioscience Research; Region Europe

First appointed: 2017, **Term expires:** 2020

Dr. Markus Kamieth
Degree: Chemistry, 46 years old, 18 years at BASF

Responsibilities: Care Chemicals; Nutrition & Health; Performance Chemicals; Advanced Materials & Systems Research; Region South America

First appointed: 2017, **Term expires:** 2020

Michael Heinz will take over the responsibilities of Margret Suckale. In addition to his previous responsibilities, Sanjeev Gandhi will also be responsible for Dispersions & Pigments.

Supervisory Board

In accordance with the Statutes, the Supervisory Board of BASF SE comprises twelve members

The term of office of the Supervisory Board commenced following the Annual Shareholders' Meeting on May 2, 2014, in which the shareholder representatives on the Supervisory Board were elected. It terminates upon conclusion of the Annual Shareholders' Meeting which resolves on the discharge of members of the Supervisory Board for the fourth complete financial year after the term of office commenced; this is the Annual Shareholders' Meeting in 2019. The Supervisory Board comprises the following members:

Dr. Jürgen Hambrecht, Neustadt an der Weinstraße, Germany
Chairman of the Supervisory Board of BASF SE
Former Chairman of the Board of Executive Directors of BASF SE (until May 2011)
Member of the Supervisory Board since: May 2, 2014
Supervisory Board memberships:
Fuchs Petrolub SE (chairman)
Trumpf GmbH & Co. KG (chairman)
Daimler AG (member)
Comparable German and non-German controlling bodies:
Nyxoah S.A. (nonexecutive director)

Michael Diekmann, Munich, Germany
Vice Chairman of the Supervisory Board of BASF SE
Former Chairman of the Board of Management of Allianz SE
Member of the Supervisory Board since: May 6, 2003
Supervisory Board memberships:
Fresenius Management SE (member)
Fresenius SE & CO. KGaA (vice chairman)
Linde AG (vice chairman)
Siemens AG (member)

Robert Oswald, Altrip, Germany
Vice Chairman of the Supervisory Board of BASF SE
Chairman of the Works Council of the Ludwigshafen site of BASF SE and Chairman of BASF's Joint Work Council
Member of the Supervisory Board since: October 1, 2000

Ralf-Gerd Bastian, Neuhofen, Germany
Member of the Works Council of the Ludwigshafen site of BASF SE
Member of the Supervisory Board since: May 6, 2003

Dame Alison Carnwath DBE, Exeter, England
Senior Advisor Evercore Partners
Member of the Supervisory Board since: May 2, 2014
Comparable German and non-German controlling bodies:
Zurich Insurance Group AG (independent member of the Administrative Council)
Zürich Versicherungs-Gesellschaft AG (independent member of the Administrative Council)
Land Securities Group plc (nonexecutive Chairman of the Board of Directors)
PACCAR Inc. (independent member of the Board of Directors)
Coller Capital Ltd. (nonexecutive member of the Board of Directors)

Prof. Dr. François Diederich, Dietikon, Switzerland
Professor at the Swiss Federal Institute of Technology, Zurich, Switzerland
Member of the Supervisory Board since: May 19, 1998

Franz Fehrenbach, Stuttgart, Germany
Chairman of the Supervisory Board of Robert Bosch GmbH
Member of the Supervisory Board since: January 14, 2008
Supervisory Board memberships:
Robert Bosch GmbH (chairman)
Stihl AG (vice chairman)
Linde AG (member)
Comparable German and non-German controlling bodies:
Stihl Holding AG & Co. KG (member of the Advisory Board)

Francesco Grioli, Ronnenberg, Germany
Regional manager of the Rhineland-Palatinate/Saarland branch of the Mining, Chemical and Energy Industries Union
Member of the Supervisory Board since: May 2, 2014
Supervisory Board memberships:
Gerresheimer AG (vice chairman)
Villeroy & Boch AG (member)
Steag New Energies GmbH (vice chairman)
V & B Fliesen GmbH (member)

Waldemar Helber, Otterbach, Germany
Vice Chairman of the Works Council of the Ludwigshafen site of BASF SE
Member of the Supervisory Board since: April 29, 2016

Anke Schäferkordt, Cologne, Germany
Member of the Executive Board of Bertelsmann SE & Co. KGaA
Co-CEO of RTL Group S.A.
Chief Executive Officer of RTL Television GmbH
Member of the Supervisory Board since: December 17, 2010
Comparable German and non-German controlling bodies:
Métropole Télévision S.A. (member of the Supervisory Board)

Denise Schellemans, Brecht, Belgium
Full-time trade union delegate
Member of the Supervisory Board since: January 14, 2008

Michael Vassiliadis, Hannover, Germany
Chairman of the Mining, Chemical and Energy Industries Union
Member of the Supervisory Board since: August 1, 2004
Supervisory Board memberships:
K+S Aktiengesellschaft (vice chairman)
Steag GmbH (vice chairman)
Evonik Industries AG (vice chairman until May 18, 2016)
RAG AG (vice chairman)
RAG DSK AG (vice chairman)

The following member left the Supervisory Board on April 29, 2016:

Wolfgang Daniel, Heidelberg, Germany
Vice Chairman of the Works Council of the Ludwigshafen site of BASF SE
Member of the Supervisory Board since: September 9, 1996

Compensation report

This report outlines the main principles of the compensation for the Board of Executive Directors and discloses the amount and structure of the compensation of each Board member. Furthermore, it provides information on end-of-service undertakings with respect to Board members, as well as information on the compensation of Supervisory Board members.

Compensation of the Board of Executive Directors

This report meets the disclosure requirements of the German Commercial Code, supplemented by the additional requirements based on the German Act on Disclosure of Management Board Remuneration (*Vorstandsvergütungs-Offenlegungsgesetz*) as well as the German Act on the Appropriateness of Management Board Remuneration (*Gesetz zur Angemessenheit der Vorstandsvergütung*), and is aligned with the recommendations of the German Corporate Governance Code (GCGC) in its version of May 5, 2015.

Based on a proposal by the Personnel Committee, the Supervisory Board determines the amount and structure of compensation of members of the Board of Executive Directors.

The amount and structure of compensation is determined by the company's size, complexity and financial position, as well as the performance of the Board of Executive Directors. Internal and external appropriateness of the Board's compensation is reviewed by external auditors on a regular basis. Globally operating companies based in Europe serve as an external reference. For internal comparison, compensation is considered in total as well as over time, especially for senior executives.

For more on the Supervisory Board and its committees, see page 137 and from page 147 onward

Principles

The compensation of the Board of Executive Directors is designed to promote sustainable corporate development. It is marked by a pronounced variability in relation to the performance of the Board of Executive Directors and BASF Group's return on assets.

The compensation of the Board of Executive Directors comprises:

1. Fixed salary
2. Annual variable compensation
3. Share-price-based, long-term incentive (LTI) program
4. Nonmonetary compensation and other additional compensation
5. Company pension benefits

The compensation components are shown in detail below:

1. The **fixed salary** is a set amount of yearly compensation paid out in even installments. It is regularly reviewed by the Supervisory Board and adjusted, if necessary.

2. The **actual annual variable compensation (variable bonus)** is based on the performance of the entire Board of Executive Directors and the return on assets. The return on assets is also used to determine the variable compensation of all other employee groups.

In order to assess the sustainable performance of the Board of Executive Directors, each year the Supervisory Board sets a target agreement with the entire Board of Executive Directors that primarily contains medium and long-term goals.

The Supervisory Board assesses the goal achievement of the current year and the previous two years. A performance factor with a value between 0 and 1.5 is determined on the basis of the goal achievement ascertained by the Supervisory Board. The variable bonus for the prior fiscal year is payable after the Annual Shareholders' Meeting.

Board members, like other employee groups, may contribute a portion of their annual variable bonus into a deferred compensation program. For members of the Board of Executive Directors, as well as for all other senior executives of the BASF Group in Germany, the maximum amount that can be contributed to this program is €30,000. Board members have taken advantage of this offer to varying degrees.

3. A **share-price-based, long-term incentive (LTI) program** exists for members of the Board of Executive Directors. It is also offered to all other senior executives of BASF Group. Members of the Board of Executive Directors are subject to a stricter set of rules than are contained in the general program conditions: They are required to participate in the program with at least 10% of their variable bonus. This mandatory investment consisting of BASF shares is subject to a holding period of four years. For any additional voluntary investment of up to 20% of the variable bonus, the general holding period of two years applies. Members of the Board of Executive Directors may only exercise their options at least four years after they have been granted (vesting period). This compensation component is limited, too, by the structure of the LTI program as well as by the upper limit on the options' exercise value. Due to the multiple-year exercise period, it can occur that exercise gains from several LTI program years accumulate inside of one year; there can also be years without any exercise gains.

For more on share ownership by members of the Board of Executive Directors, see page 133

For more on the LTI program, see page 45 and from page 216 onward

4. Included in **nonmonetary compensation and other additional compensation (fringe benefits)** are the following: delegation allowances, accident insurance premiums and other similar benefits, and benefits from security measures provided by the company. The members of the Board did not receive loans or advances from the company in 2016.

The members of the Board are covered by a directors' and officers' liability insurance (D&O insurance) concluded by the company, which includes a deductible.

For more on the D&O insurance of the Board of Executive Directors, see page 133

5. As part of the **pension benefits** granted to the Board of Executive Directors (Board Performance Pension), company pension benefits are intended to accrue annual pension units. The method used to determine the amount of the pension benefits generally corresponds to that used for the other senior executives of the BASF Group in Germany. The method is designed such that both the performance of the company and the progression of the individual Board member's career significantly affect the pension entitlement.

The annual pension benefits accruing to Board members in a given reporting year (pension unit) are composed of a fixed and a variable component. The fixed component is calculated by multiplying the annual fixed salary above the Social Security Contribution Ceiling by 32% (contribution factor). The variable component of the pension unit is the result of multiplying the fixed component with a factor that is dependent on the return on assets in the reporting year and the performance factor, which is decisive for the variable bonus. The amount resulting from the fixed and the variable component is converted into a pension unit (lifelong pension) using actuarial factors based on an actuarial interest rate (5%), the probability of death, invalidity and bereavement according to Heubeck Richttafeln, 2005G (modified), and an assumed pension increase (at least 1% per annum).

The sum of the pension units accumulated over the reporting years determines the respective Board member's pension benefit in the event of a claim. This is the amount that is payable upon retirement. Pension benefits take effect at the end of service after completion of the member's 60th year of age, or on account of disability or death. Pension payments are reviewed on a regular basis and adjusted by at least 1% each year.

The pension units also include survivor benefits. Upon the death of an active or former member of the Board, the surviving spouse receives a survivor pension amounting to 60% of the Board member's pension entitlement. The orphan pension amounts to 10% for each half-orphan, 33% for an orphan, 25% each for two orphans and 20% each for three or more orphans of the pension entitlement of the deceased (former) Board member. Total survivor benefits may not exceed 75% of the Board member's pension entitlement. If the survivor pensions exceed the upper limit, they will be proportionately reduced.

Board members are members of the BASF Pensionskasse VVaG, as are generally all employees of BASF SE. Contributions and benefits are determined by the Statutes of the BASF Pensionskasse VVaG and the General Conditions of Insurance.

Amount of total compensation

The tables on pages 140 to 143 show the granted and allocated compensation as well as service cost of each member of the Board of Executive Directors in accordance with Section 4.2.5(3) of the German Corporate Governance Code (GCGC) in its version of May 5, 2015.

Compensation granted in accordance with the German Corporate Governance Code (GCGC)

The table "Compensation granted in accordance with GCGC" shows: fixed salary, fringe benefits, annual variable target compensation, LTI program measured at fair value at the grant date, and service cost. The individual compensation components are supplemented by individually attainable minimum and maximum compensation.

Furthermore, a reconciliation statement for total compensation to be reported is provided below the table "Compensation granted in accordance with GCGC" due to the disclosures required by Section 314(1)(6a) of the German Commercial Code (HGB) in connection with the German Accounting Standard Number 17 (GAS 17).

Compensation granted in accordance with the German Corporate Governance Code (GCGC) (thousand €)

	Dr. Kurt Bock				Dr. Martin Brudermüller			
	Chairman of the Board of Executive Directors				Vice Chairman of the Board of Executive Directors			
	2015	**2016**	**2016 (Min)**	**2016 (Max)**	**2015**	**2016**	**2016 (Min)**	**2016 (Max)**
Fixed salary	1,300	1,300	1,300	1,300	866[1]	865	865	865
Fringe benefits	215	68	68	68	389[2]	239[2]	239[2]	239[2]
Total	**1,515**	**1,368**	**1,368**	**1,368**	**1,255**	**1,104**	**1,104**	**1,104**
Annual variable target compensation	2,600	2,600	0	4,000	1,729	1,729	0	2,660
Multiple-year variable compensation	884	844	0	3,069	588	561	0	2,040
LTI program 2015 (2015–2023)	884	–	–	–	588	–	–	–
LTI program 2016 (2016–2024)	–	844	0	3,069	–	561	0	2,040
Total	**4,999**	**4,812**	**1,368**	**8,437**	**3,572**	**3,394**	**1,104**	**5,804**
Service cost	605	537	537	537	529	471	471	471
Total compensation in accordance with GCGC	**5,604**	**5,349**	**1,905**	**8,974**	**4,101**	**3,865**	**1,575**	**6,275**
Reconciliation reporting of total compensation pursuant to Section 314(1)(6a) HGB in connection with GAS 17								
less granted annual variable target compensation	(2,600)	(2,600)			(1,729)	(1,729)		
plus allocated actual annual variable compensation	2,046	2,061			1,361	1,371		
less service cost	(605)	(537)			(529)	(471)		
Total compensation	**4,445**	**4,273**			**3,204**	**3,036**		

	Dr. Harald Schwager				Wayne T. Smith			
	2015	**2016**	**2016 (Min)**	**2016 (Max)**	**2015**	**2016**	**2016 (Min)**	**2016 (Max)**
Fixed salary	650	650	650	650	668[1]	828[1]	828[1]	828[1]
Fringe benefits	155	83	83	83	256[2]	106[2]	106[2]	106[2]
Total	**805**	**733**	**733**	**733**	**924**	**934**	**934**	**934**
Annual variable target compensation	1,300	1,300	0	2,000	1,300	1,300	0	2,000
Multiple-year variable compensation	442	422	0	1,534	519	517	0	1,534
LTI program 2015 (2015–2023)	442	–	–	–	519	–	–	–
LTI program 2016 (2016–2024)	–	422	0	1,534	–	517	0	1,534
Total	**2,547**	**2,455**	**733**	**4,267**	**2,743**	**2,751**	**934**	**4,468**
Service cost	399	359	359	359	478	445	445	445
Total compensation in accordance with GCGC	**2,946**	**2,814**	**1,092**	**4,626**	**3,221**	**3,196**	**1,379**	**4,913**
Reconciliation reporting of total compensation pursuant to Section 314(1)(6a) HGB in connection with GAS 17								
less granted annual variable target compensation	(1,300)	(1,300)			(1,300)	(1,300)		
plus allocated actual annual variable compensation	1,023	1,031			1,023	1,031		
less service cost	(399)	(359)			(478)	(445)		
Total compensation	**2,270**	**2,186**			**2,466**	**2,482**		

[1] Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

[2] Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

Dr. Hans-Ulrich Engel				Sanjeev Gandhi				Michael Heinz			
2015	2016	2016 (Min)	2016 (Max)	2015	2016	2016 (Min)	2016 (Max)	2015	2016	2016 (Min)	2016 (Max)
662[1]	650	650	650	514[1]	455[1]	455[1]	455[1]	650	650	650	650
412[2]	92	92	92	598[2]	978[2]	978[2]	978[2]	150	84	84	84
1,074	**742**	**742**	**742**	**1,112**	**1,433**	**1,433**	**1,433**	**800**	**734**	**734**	**734**
1,300	1,300	0	2,000	1,300	1,300	0	2,000	1,300	1,300	0	2,000
442	422	0	1,534	171	422	0	1,534	442	422	0	1,534
442	–	–	–	171	–	–	–	442	–	–	–
–	422	0	1,534	–	422	0	1,534	–	422	0	1,534
2,816	**2,464**	**742**	**4,276**	**2,583**	**3,155**	**1,433**	**4,967**	**2,542**	**2,456**	**734**	**4,268**
402	363	363	363	489	445	445	445	421	373	373	373
3,218	**2,827**	**1,105**	**4,639**	**3,072**	**3,600**	**1,878**	**5,412**	**2,963**	**2,829**	**1,107**	**4,641**
(1,300)	(1,300)			(1,300)	(1,300)			(1,300)	(1,300)		
1,023	1,031			1,023	1,031			1,023	1,031		
(402)	(363)			(489)	(445)			(421)	(373)		
2,539	**2,195**			**2,306**	**2,886**			**2,265**	**2,187**		

Margret Suckale			
2015	2016	2016 (Min)	2016 (Max)
650	650	650	650
80	58	58	58
730	**708**	**708**	**708**
1,300	1,300	0	2,000
442	422	0	1,534
442	–	–	–
–	422	0	1,534
2,472	**2,430**	**708**	**4,242**
326	309	309	309
2,798	**2,739**	**1,017**	**4,551**
(1,300)	(1,300)		
1,023	1,031		
(326)	(309)		
2,195	**2,161**		

[1] Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

[2] Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

The table below shows the options granted to the Board of Executive Directors on July 1 of both reporting years.

Number of options granted

	2016	2015
Dr. Kurt Bock	35,108	36,248
Dr. Martin Brudermüller	23,344	24,104
Dr. Hans-Ulrich Engel	17,552	18,124
Sanjeev Gandhi	17,552	7,000
Michael Heinz	17,552	18,124
Dr. Harald Schwager	17,552	18,124
Wayne T. Smith	17,552	18,124
Margret Suckale	17,552	18,124
Total	**163,764**	**157,972**

Compensation allocated in accordance with the German Corporate Governance Code (GCGC)

The "Compensation allocated in accordance with the GCGC" shown for 2015 and 2016 is comprised of the fixed and variable compensation components actually allocated, plus the service cost calculated for each member of the Board of Executive Directors in the reporting years even though this does not actually represent payment in the narrower sense.

Compensation allocated in accordance with the German Corporate Governance Code (GCGC) (thousand €)

	Dr. Kurt Bock Chairman of the Board of Executive Directors		Dr. Martin Brudermüller Vice Chairman of the Board of Executive Directors		Dr. Hans-Ulrich Engel	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Fixed salary	1,300	1,300	865	866[2]	650	662[2]
Fringe benefits	68	215	239[3]	389[3]	92	412[3]
Total	**1,368**	**1,515**	**1,104**	**1,255**	**742**	**1,074**
Actual annual variable compensation[1]	2,061	2,046	1,371	1,361	1,031	1,023
Multiple-year variable compensation	4,386[4]	2,683[5]	1,657	–	–	2,071[5]
LTI program 2007 (2007–2015)	–	2,683[5]	–	–	–	2,071[5]
LTI program 2008 (2008–2016)	4,386[4]	–	–	–	–	–
LTI program 2009 (2009–2017)	–	–	–	–	–	–
LTI program 2010 (2010–2018)	–	–	1,657	–	–	–
LTI program 2011 (2011–2019)	–	–	–	–	–	–
LTI program 2012 (2012–2020)	–	–	–	–	–	–
Total	**7,815**	**6,244**	**4,132**	**2,616**	**1,773**	**4,168**
Service cost	537	605	471	529	363	402
Total compensation in accordance with GCGC	**8,352**	**6,849**	**4,603**	**3,145**	**2,136**	**4,570**

[1] The basis for the allocated actual annual variable compensation is the return on assets adjusted for special items and the performance factor. This includes contributions made to the deferred compensation program.

[2] Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

[3] Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

[4] At the end of the regular term of the LTI program 2008, exercise gains which were realized in 2012 or 2010 were allocated to Dr. Kurt Bock and Wayne T. Smith in 2016 in accordance with the special conditions of the U.S. LTI program.

[5] At the end of the regular term of the LTI program 2007, exercise gains which were realized in 2009, 2012 or 2013 were allocated to Dr. Kurt Bock, Dr. Hans-Ulrich Engel and Wayne T. Smith in 2015 in accordance with the special conditions of the U.S. LTI program.

Compensation allocated in accordance with the German Corporate Governance Code (GCGC) (thousand €)

	Sanjeev Gandhi		Michael Heinz		Dr. Harald Schwager	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Fixed salary	455[2]	514[2]	650	650	650	650
Fringe benefits	978[3]	598[3]	84	150	83	155
Total	**1,433**	**1,112**	**734**	**800**	**733**	**805**
Actual annual variable compensation[1]	1,031	1,023	1,031	1,023	1,031	1,023
Multiple-year variable compensation	–	–	–	–	1,569	–
LTI program 2007 (2007–2015)	–	–	–	–	–	–
LTI program 2008 (2008–2016)	–	–	–	–	–	–
LTI program 2009 (2009–2017)	–	–	–	–	–	–
LTI program 2010 (2010–2018)	–	–	–	–	1,569	–
LTI program 2011 (2011–2019)	–	–	–	–	–	–
LTI program 2012 (2012–2020)	–	–	–	–	–	–
Total	**2,464**	**2,135**	**1,765**	**1,823**	**3,333**	**1,828**
Service cost	445	489	373	421	359	399
Total compensation in accordance with GCGC	**2,909**	**2,624**	**2,138**	**2,244**	**3,692**	**2,227**

	Wayne T. Smith		Margret Suckale	
	2016	**2015**	**2016**	**2015**
Fixed salary	828[2]	668[2]	650	650
Fringe benefits	106[3]	256[3]	58	80
Total	**934**	**924**	**708**	**730**
Actual annual variable compensation[1]	1,031	1,023	1,031	1,023
Multiple-year variable compensation	798[4]	151[5]	527	–
LTI program 2007 (2007–2015)	–	151[5]	–	–
LTI program 2008 (2008–2016)	798[4]	–	–	–
LTI program 2009 (2009–2017)	–	–	–	–
LTI program 2010 (2010–2018)	–	–	527	–
LTI program 2011 (2011–2019)	–	–	–	–
LTI program 2012 (2012–2020)	–	–	–	–
Total	**2,763**	**2,098**	**2,266**	**1,753**
Service cost	445	478	309	326
Total compensation in accordance with GCGC	**3,208**	**2,576**	**2,575**	**2,079**

[1] The basis for the allocated actual annual variable compensation is the return on assets adjusted for special items and the performance factor. This includes contributions made to the deferred compensation program.

[2] Payment was made partly in local currency abroad based on a theoretical net salary in Germany.

[3] Includes payments to cover additional costs of transfers, such as assumption of prevailing local rental fees.

[4] At the end of the regular term of the LTI program 2008, exercise gains which were realized in 2012 or 2010 were allocated to Dr. Kurt Bock and Wayne T. Smith in 2016 in accordance with the special conditions of the U.S. LTI program.

[5] At the end of the regular term of the LTI program 2007, exercise gains which were realized in 2009, 2012 or 2013 were allocated to Dr. Kurt Bock, Dr. Hans-Ulrich Engel and Wayne T. Smith in 2015 in accordance with the special conditions of the U.S. LTI program.

Accounting valuation of multiple-year variable compensation (LTI programs)

The options granted resulted in an expense in 2016. This expense refers to the total of all options from the LTI programs 2008 to 2016 and is calculated as the difference in the value of the options on December 31, 2016, compared with the value on December 31, 2015, considering the options exercised and granted in 2016. The value of the options is based primarily on the development of the BASF share price and its relative performance compared with the benchmark index specified for the LTI programs 2008 to 2016.

The expenses reported below are purely accounting figures which do not equate with the allocated actual gains should options be exercised. Each member of the Board may decide individually on the timing and scope of the exercise of options of the LTI programs, while taking into account the terms and conditions of the program.

The expenses for 2016 relating to all options issued were as follows: Dr. Kurt Bock €5,000 thousand (2015: expense of €1,058 thousand); Dr. Martin Brudermüller €4,052 thousand (2015: expense of €788 thousand); Dr. Hans-Ulrich Engel €4,011 thousand (2015: expense of €660 thousand); Sanjeev Gandhi €156 thousand (2015: expense of €17 thousand); Michael Heinz €2,423 thousand (2015: expense of €517 thousand); Dr. Harald Schwager €4,182 thousand (2015: expense of €642 thousand); Wayne T. Smith €1,872 thousand (2015: expense of €616 thousand); and Margret Suckale €2,613 thousand (2015: expense of €419 thousand).

For more on the LTI program, see page 45 and from page 216 onward

Pension benefits

The values for service cost incurred in 2016 contain service cost for BASF Pensionskasse VVaG and Board Performance Pension. Service cost for the members of the Board of Executive Directors is shown individually in the tables "Compensation granted in accordance with GCGC" and "Compensation allocated in accordance with GCGC."

The present value of pension benefits (defined benefit obligation) is an accounting figure for the entitlements that the Board members have accumulated in their years of service at BASF. The defined benefit obligations up to and including 2016 were as follows: Dr. Kurt Bock €18,931 thousand (2015: €15,684 thousand); Dr. Martin Brudermüller €15,929 thousand (2015: €13,148 thousand); Dr. Hans-Ulrich Engel €10,968 thousand (2015: €9,068 thousand); Sanjeev Gandhi €2,409 thousand (2015: €1,588 thousand); Michael Heinz €10,229 thousand (2015: €8,226 thousand); Dr. Harald Schwager €11,096 thousand (2015: €9,157 thousand); Wayne T. Smith €3,210 thousand (2015: €2,355 thousand); and Margret Suckale €4,315 thousand (2015: €3,518 thousand).

End-of-service benefits

In the event that a member of the Board of Executive Directors retires from employment before the age of 60, either because their appointment was not extended or was revoked for an important reason, they are entitled to pension benefits if they have served on the Board for at least ten years or if the time needed to reach legal retirement age is less than ten years. The company is entitled to offset compensation received for any other work done against pension benefits until the legal retirement age is reached.

The following applies to end of service due to a change-of-control event: A change-of-control event, in terms of this provision, occurs when a shareholder informs BASF of a shareholding of at least 25%, or the increase of such a holding. If a Board member's appointment is revoked within one year following a change-of-control event, the Board member will receive the contractually agreed payments for the remaining contractual term of office as a one-off payment (fixed salary and annual variable target compensation). The Board member may also receive the fair value of the option rights acquired in connection with the LTI program within a period of three months or may continue to hold the existing rights under the terms of the program. For the determination of the accrued pension benefits from the Board Performance Pension, the time up to the regular expiry of office is taken into consideration.

There is a general limit on severance pay (severance payment cap) for all Board members. Accordingly, payments made to a Board member upon premature termination of their contract, without serious cause, may not exceed the value of two years' compensation, including fringe benefits, nor compensate more than the remaining term of the contract. The severance payment cap is to be calculated on the basis of the total compensation for the past business year and, if appropriate, also the expected total compensation for the current business year. If the appointment to the Board of Executive Directors is prematurely terminated as the result of a change-of-control event, the payments may not exceed 150% of the severance compensation cap.

Former members of the Board of Executive Directors

Total compensation for previous Board members and their surviving dependents amounted to €15.9 million in 2016 (2015: €12.1 million[1]). This figure also contains payments that previous Board members have themselves financed through the deferred compensation program and the expense or gain for 2016 relating to options that previous members of the Board still hold from the time of their active service period.

The continuation of the options that have not yet been exercised at the time of retirement, along with the continuation of the associated holding period for individual investment in BASF shares under the conditions of the program, is intended in order to particularly emphasize how sustainability is incorporated into the compensation for the Board members. Pension provisions for previous Board members and their surviving dependents amounted to €150.4 million (2015: €144.7 million[2]).

Compensation of Supervisory Board members

The disclosure of compensation of the Supervisory Board is based on the German Commercial Code and is aligned with the recommendations of the German Corporate Governance Code (GCGC). The compensation of the Supervisory Board is regulated by the Statutes of BASF SE passed by the Annual Shareholders' Meeting.

Each member of the Supervisory Board receives an annual fixed compensation of €60,000 and a performance-related variable compensation for each full €0.01 by which the earnings per share of the BASF Group, as declared in the BASF Group Consolidated Financial Statements for the year for which the remuneration is paid, exceeds the minimum earnings per share. For the 2016 business year, minimum earnings per share amounted to €1.75 (2015: €1.70). The performance-related variable remuneration is €800 for each €0.01 of earnings per share up to an earnings per share of €2.50, €600 for each further €0.01 of earnings per share up to an earnings per share of €3.00, and €400 for each €0.01 beyond this. The minimum earnings per share and the corresponding thresholds shall increase by €0.05 for each subsequent business year. The performance-related variable compensation is limited to a maximum amount of €120,000.

Based on the earnings per share of €4.42 published in the BASF Group Consolidated Financial Statements 2016, the performance-related compensation reached the maximum amount of €120,000 (2015: €120,000).

The chairman of the Supervisory Board receives two-and-a-half times and a vice chairman one-and-a-half times the compensation of an ordinary member. Members of the Supervisory Board who are members of a committee, except for the Nomination Committee, receive a further fixed compensation for this purpose in the amount of €12,500. For the Audit

[1] Also includes the pro rata temporis compensation of Dr. Andreas Kreimeyer up to his departure from the Board of Executive Directors on April 30, 2015.

[2] Also includes the defined benefit obligations provided to Dr. Andreas Kreimeyer, up to and including December 31, 2015.

Committee, the further fixed compensation is €50,000. The chairman of a committee shall receive twice and a vice chairman one-and-a-half times the further fixed compensation.

The company reimburses members of the Supervisory Board for out-of-pocket expenses and value-added tax to be paid with regard to their activities as members of the Supervisory Board or of a committee. The company further grants the members of the Supervisory Board a fee of €500 for attending a meeting of the Supervisory Board or one of its committees to which they belong and includes the performance of the duties of the members of the Supervisory Board in the cover of a directors' and officers' liability insurance (D&O insurance) concluded by it, which includes a deductible.

For more on the D&O insurance of the Supervisory Board, see page 133

Total compensation of the Supervisory Board for activities in 2016, including attendance fees, was around €3 million (2015: around €3 million). The compensation of the individual Supervisory Board members was as follows.

Compensation of the Supervisory Board of BASF SE (thousand €)

	Fixed salary		Performance-related variable compensation		Compensation for committee memberships		Total compensation	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**
Dr. Jürgen Hambrecht, Chairman[1,5]	150.0	150.0	300.0	300.0	25.0	31.3	475.0	481.3
Michael Diekmann, Vice Chairman[2,6]	90.0	90.0	180.0	180.0	12.5	17.2	282.5	287.2
Robert Oswald, Vice Chairman[2,7]	90.0	90.0	180.0	180.0	12.5	15.6	282.5	285.6
Ralf-Gerd Bastian[4]	60.0	60.0	120.0	120.0	50.0	50.0	230.0	230.0
Dame Alison Carnwath DBE[3,7]	60.0	60.0	120.0	120.0	100.0	103.1	280.0	283.1
Wolfgang Daniel, Supervisory Board member until April 29, 2016	20.0	60.0	40.0	120.0	–	–	60.0	180.0
Prof. Dr. François Diederich	60.0	60.0	120.0	120.0	–	–	180.0	180.0
Franz Fehrenbach[4]	60.0	60.0	120.0	120.0	50.0	50.0	230.0	230.0
Francesco Grioli	60.0	60.0	120.0	120.0	–	–	180.0	180.0
Waldemar Helber, Supervisory Board member since April 29, 2016	45.0	–	90.0	–	–	–	135.0	–
Anke Schäferkordt	60.0	60.0	120.0	120.0	–	–	180.0	180.0
Denise Schellemans	60.0	60.0	120.0	120.0	–	–	180.0	180.0
Michael Vassiliadis[2,4,7]	60.0	60.0	120.0	120.0	62.5	65.6	242.5	245.6
Total	**875.0**	**870.0**	**1,750.0**	**1,740.0**	**312.5**	**332.8**	**2,937.5**	**2,942.8**

[1] Chairman of the Personnel Committee
[2] Member of the Personnel Committee
[3] Chairman of the Audit Committee
[4] Member of the Audit Committee
[5] Chairman of the Strategy Committee (since October 1, 2015)
[6] Vice Chairman of the Strategy Committee (since October 1, 2015)
[7] Member of the Strategy Committee (since October 1, 2015)

Compensation for Supervisory Board membership and membership of Supervisory Board committees is payable after the Annual Shareholders' Meeting, which approves the Consolidated Financial Statements upon which the variable compensation is based. Accordingly, compensation relating to the year 2016 will be paid following the Annual Shareholders' Meeting on May 12, 2017.

In 2016, as in 2015, the company paid the Supervisory Board member Prof. Dr. François Diederich a total of CHF 38,400 (2016: approximately €35,200; 2015: approximately €36,000) for consulting work in the area of chemical research based on a consulting contract approved by the Supervisory Board.

Beyond this, no other Supervisory Board members received any compensation in 2016 for services rendered personally, in particular, the rendering of advisory and agency services.

For more on share ownership by members of the Supervisory Board, see page 133

Report of the Supervisory Board

Dear Shareholders,

The Supervisory Board's work in 2016 was marked by several events and topics that were, in various respects, both weighty and significant – such as the explosion at the Ludwigshafen site, changes in the chemical industry due to the announcement of major mergers and acquisitions that impacted BASF's strategic development, and long-term succession planning for the composition of the Board of Executive Directors.

The Supervisory Board faced these challenges with a full sense of responsibility and supported the Board of Executive Directors' activities, especially in coping with the explosion, and advised the Board of Executive Directors in its deliberations on BASF's strategic further development in an evolving industry environment.

Monitoring and consultation in an ongoing dialog with the Board of Executive Directors

In 2016, the Supervisory Board of BASF SE exercised its duties as required by law and the Statutes with the utmost care. It regularly monitored the management of the Board of Executive Directors and provided advice on the company's strategic development and important individual measures, about which the Supervisory Board was regularly and thoroughly informed by the Board of Executive Directors. This occurred both during and outside of the meetings of the Supervisory Board and its committees in the form of written and oral reports on, for example, all of the major financial KPIs of the BASF Group and its segments, the economic situation in the main volumes and procurement markets, and on deviations in business developments from original plans. Furthermore, the Supervisory Board tackled fundamental questions of corporate planning, including financial, investment, sales volumes and personnel planning, as well as measures for designing the future of research and development. The Supervisory Board discussed in detail the reports from the Board of Executive Directors, and also deliberated on prospects for the company and its individual business areas with the Board of Executive Directors. It was convinced of the lawfulness, expediency and propriety of the Board of Executive Director's company leadership.

The Chairman of the Board of Executive Directors and the Chairman of the Supervisory Board were in regular contact outside of Supervisory Board meetings, as well. The former promptly informed the latter of current developments and significant issues. The Supervisory Board was always involved at an early stage in decisions of major importance. The Supervisory Board passed resolutions on the individual measures that required the approval of the Supervisory Board. In the 2016 business year, this pertained to the authorization of the Chemetall acquisition. With this transaction, BASF has added the surface treatment business area to its Coatings division.

Supervisory Board meetings

The Supervisory Board held five meetings in the 2016 reporting year. With the exception of one meeting at which one member of the Supervisory Board was absent due to illness, all Supervisory Board members attended all Supervisory Board meetings in 2016. The members of the Supervisory Board elected by shareholders and those elected by the employees prepared for the meetings in separate preliminary discussions.

An individual overview of meeting attendance has been made available on the company website at:
basf.com/governance/supervisoryboard/meetings

A significant component of all Supervisory Board meetings was the Board of Executive Directors' reports on the current business situation with detailed information on sales and earnings growth, as well as on opportunities and risks for business development, the status of important current and planned investment projects, developments on the capital markets, and significant managerial measures taken by the Board of Executive Directors in addition to innovation projects. In its meetings, the Supervisory Board additionally discussed the further development of the BASF Group's business activities through acquisitions, divestitures and investment projects. Significant consultation topics included the acquisition of Chemetall with the entrance into the surface treatment business, the divestiture of the industrial coatings business, the sale of the OLED patent portfolio, the acquisition of Henkel's western European building material business for professional users, and the establishment of a joint venture with Avantium for the production of furandicarboxylic acid (FDCA) from renewable resources.

Important focus points of the Supervisory Board's consultation topics over the entire business year centered on developments in the chemical industry as a result of announced mergers and acquisitions, such as the DOW and DuPont merger; the acquisition of Monsanto by Bayer and of Syngenta by ChemChina; their potential impact on BASF's business and strategic development possibilities, especially in the Agricultural Solutions segment; and current and future courses of action.

With respect to regional opportunities and risks, the Supervisory Board was often occupied with political and economic developments in northern Africa and the Middle East as well as the development of local markets there. Possibilities for tapping these markets were discussed.

At its meeting on February 24, 2016, the Supervisory Board reviewed and approved the Consolidated Financial Statements, Management's Report and the proposal for the appropriation of profit for the 2015 business year as presented by the Board of Executive Directors. The meeting on April 29, 2016, served to prepare for the Annual Shareholders' Meeting.

In addition to strategically significant individual measures, the Supervisory Board also addressed BASF's strategy and long-term business prospects in individual business areas and regions. This was the focus of its meeting on July 25/26, 2016, at which the Board of Executive Directors provided a status update on the implementation of the "We create chemistry" strategy. Main consultation topics comprised possibilities and objectives for strategic portfolio development, innovation and technology, the development of the Oil & Gas and Agricultural Solutions segments, the automotive sector as a key customer industry (especially with regard to the development of electromobility), and opportunities and risks in the Asia Pacific region.

In addition, the Supervisory Board addressed future prospects for the main site in Ludwigshafen and the further development of the Engineering & Maintenance function at its meeting on October 25, 2016.

At its meeting on December 15, 2016, the Supervisory Board discussed and approved the Board of Executive Directors' operative and financial planning including the investment budget for 2017, and as usual empowered the Board of Executive Directors to procure necessary financing in 2017.

Composition and compensation of the Board of Executive Directors

In several meetings in the 2016 business year, the Supervisory Board conferred on, and passed resolutions on, personnel topics in the Board of Executive Directors as well as questions concerning the compensation of the Board of Executive Directors. Based on preparation conducted by the Personnel Committee, it determined the targets for the Board of Executive Directors for the 2016 business year at its meeting on February 24, 2016.

At its meeting on December 15, 2016, the Supervisory Board advised on long-term succession planning for the Board of Executive Directors and approved the early conclusion of the term for Dr. Harald Schwager, member of the Board of Executive Directors for many years, in order to allow for structured succession. Dr. Harald Schwager agreed on early discontinuance of his contract without severance pay by the company and will receive the contractually agreed upon interim and pension benefits in accordance with proper expiration of a term on the Board of Executive Directors. Dr. Harald Schwager will therefore depart the Board of Executive Directors together with Margret Suckale at the conclusion of the Annual Shareholders' Meeting on May 12, 2017. At the same Supervisory Board meeting, Saori Dubourg and Dr. Markus Kamieth were appointed to the Board of Executive Directors, effective at the end of the 2017 Annual Shareholders' Meeting, each with a first-time term to the end of the 2020 Annual Shareholders' Meeting.

Furthermore, the Supervisory Board agreed at its December 15, 2016, meeting on the performance evaluation of the Board of Executive Directors for the 2016 business year as well as – based on an appropriateness test conducted by the Personnel Committee – an adjustment of the Board of Executive Directors' compensation including an increase in the fixed salary and annual variable target compensation, effective January 1, 2017.

At several meetings, the Supervisory Board discussed the topic of the compensation of the Supervisory Board. The current configuration of the Supervisory Board's compensation, with a fixed salary and a limited variable compensation component based on earnings per share, has existed largely unchanged since 2006. In normal business years, compensation in fact purely comprises a fixed salary, as the maximum amount of the variable compensation is for the most part reached by the high level of earnings per share. This was also the case for compensation for 2016. The Supervisory Board therefore decided to propose to the 2017 Annual Shareholders' Meeting a formal restructuring of the BASF Supervisory Board's compensation to a purely fixed salary, combined with a long-term obligation for the Supervisory Board members to acquire and keep shares – in line with the development of the compensation structures of the majority of large publicly traded companies in Germany.

Committees

The Supervisory Board of BASF SE has four committees: 1. the committee for personnel matters of the Board of Executive Directors and the granting of loans in accordance with Section 89(4) of the German Stock Corporation Act (Personnel Committee); 2. the Audit Committee; 3. the Nomination Committee; and 4. the Strategy Committee. Following each Committee meeting, the chairpersons of the Committees reported in detail about the meetings and the activities of the Committees at the subsequent meeting of the Supervisory Board.

For information on the composition of the committees and the tasks assigned them by the Supervisory Board, see the Corporate Governance Report on page 129

The **Personnel Committee** met four times during the reporting period. All committee members attended the meetings. At its meeting on February 24, 2016, the Personnel Committee advised on the targets for the Board of Executive Directors for the 2016 business year. The meetings on July 25, 2016, and October 25, 2016, focused on development of leadership at the top levels of management below the Board of Executive Directors and succession planning for that Board.

Further consultation topics comprised a review of the appropriateness of the compensation of the Board of Executive Directors, both in terms of amount and configuration of the

compensation system, as well as the structure of the compensation of the Supervisory Board. The basis for this was developed and intensively discussed with an independent compensation consultant. The focus of the December 15, 2016, meeting was the discussion of and resolution on the Supervisory Board's proposal for new appointments to the Board of Executive Directors, the adjustment of that Board's compensation, and a redesign of the Supervisory Board's compensation. In addition, the Personnel Committee advised on the performance evaluation of the Board of Executive Directors as well as the target figures for the proportion of women in that Board.

The **Audit Committee** is responsible for all the tasks listed in Section 107(3)(2) of the German Stock Corporation Act and in Subsection 5.3.2 of the German Corporate Governance Code in its version of May 5, 2015. The Audit Committee met five times during the reporting period. All committee members attended all meetings. Its core duties were to review BASF SE's Financial Statements and Consolidated Financial Statements, as well as to discuss the quarterly and first-half financial reports with the Board of Executive Directors prior to their publication.

At the meeting on February 21, 2017, the auditor reported in detail on its audits of BASF SE's separate and consolidated financial statements for the 2016 business year and discussed the results of its audit with the Audit Committee.

At the meeting on July 25, 2016, KPMG AG Wirtschaftsprüfungsgesellschaft – the auditor elected at the Annual Shareholders' Meeting – was charged with the audit for the 2016 reporting year and auditing fees were agreed upon. The focus areas for the annual audit were discussed and defined together with the auditor. The Audit Committee categorically excluded any service relationships between auditor and BASF Group companies outside of the audit of the annual financial statements, including beyond prevailing legal limitations. These services may only be performed upon approval by the Audit Committee. For certain nonaudit services beyond the scope of the audit of the financial reports, the Audit Committee either granted approval for individual cases or authorized the Board of Executive Directors to engage KPMG AG Wirtschaftsprüfungsgesellschaft for such services. The authorization of each service applies for one reporting year and is limited in amount.

Other important activities included advising the Board of Executive Directors on accounting issues and the internal control system. The internal auditing system and compliance in the BASF Group were each a focus at one meeting of the Audit Committee. In these meetings, the head of the Corporate Audit department and the Chief Compliance Officer reported to the Audit Committee and answered its questions. In all meetings, the Audit Committee also received information on the development of risks from litigation.

The **Nomination Committee** is responsible for preparing candidate proposals for the election of those Supervisory Board members who are elected by the Annual Shareholders' Meeting. The Nomination Committee is guided by the objectives for the composition of the Supervisory Board adopted by the Supervisory Board. The Nomination Committee met once in 2016. All committee members attended the meeting. Its focus was the discussion of suitable candidates for the case of the early departure from the Supervisory Board of one of the members elected by the Annual Shareholder's Meeting.

The **Strategy Committee**, formed to consult on strategic options for the further development of the BASF Group, did not meet in 2016.

Corporate Governance and Declaration of Conformity

The Supervisory Board places great value on ensuring good corporate governance: In 2016, it was therefore once again intensely occupied with the corporate governance standards practiced in the company and the implementation of the German Corporate Governance Code's recommendations and suggestions. A further topic was the implementation of legal stipulations in BASF SE. This included the E.U.'s regulation on market abuse with the first-time introduction of legal "closed periods" in which share transactions are not permissible, as well as the Law on Equal Participation of Women and Men in Leadership Positions in the Private and Public Sector. The Corporate Governance Report of the BASF Group provides extensive information on BASF's corporate governance. It also includes the Compensation Report, containing full details on the compensation for the Board of Executive Directors and the Supervisory Board.

At the meeting of December 15, 2016, current recommendations and proposals made for the German Corporate Governance Code and their implementation at BASF were discussed, along with the joint Declaration of Conformity by the Supervisory Board and Board of Executive Directors in accordance with Section 161 of the Stock Corporation Act. BASF complies with the recommendations of the German Corporate Governance Code in its version of May 5, 2015, without exception.

The full Declaration of Conformity is rendered on page 150 and is available to shareholders on the company website at: basf.com/en/governance

Independence and efficiency review

An important aspect of good corporate governance is the independence of Supervisory Board members and their freedom from conflicts of interest. According to assessments of the Supervisory Board, all of its members can be considered independent as defined by the German Corporate Governance Code. The criteria used for this evaluation can be found in the Corporate Governance Report on page 130. In cases where Supervisory Board members hold supervisory or management positions at companies with which BASF has business relations, we see no impairment of their independence. The scope of these businesses is relatively marginal and furthermore takes place under conditions similar to those of a third party.

The Supervisory Board reviews the efficiency of its activities every year in the form of a self-assessment. This took place in 2016 as well, as the Chairman of the Supervisory Board conducted individual dialogs with each Supervisory Board member using a structured questionnaire. Topics especially centered on Supervisory Board meeting agendas; cooperation with the Board of Executive Directors; information supply of the Supervisory Board; the Committees' duties, composition and work; and cooperation with shareholder and employee representatives. The results of these individual meetings were presented and thoroughly discussed at the Supervisory Board meeting on December 15, 2016. Overall, its members rated the Supervisory Board's activity as efficient.

The Audit Committee once again conducted a self-assessment of its activities in 2016, apart from the efficiency review. Material topic areas were the organization and content of the meetings and the supply of information as the basis of the Committees' work. No notable need for action was identified.

Separate and consolidated financial statements

KPMG AG Wirtschaftsprüfungsgesellschaft, the auditor elected by the Annual Shareholders' Meeting for the 2016 reporting year, has audited the Financial Statements of BASF SE and the BASF Group Consolidated Financial Statements, including the Management's Report and the accounting records from which they were prepared, and have approved them free of qualification. Furthermore, the auditor certified that the Board of Executive Directors had taken the measures incumbent on it under Section 91(2) of the German Stock Corporation Act in an appropriate manner. In particular, it had instituted an appropriate information and monitoring system that fulfilled the requirements of the company and is applicable for the early identification of developments that could pose a risk to the continued existence of the BASF Group.

The documents to be examined and the auditor's reports were sent in a timely manner to every member of the Supervisory Board. The auditor attended the accounts review meeting of the Audit Committee on February 21, 2017, as well as the accounts meeting of the Supervisory Board on February 22, 2017, and reported on the main findings of the audit. The auditor also provided detailed explanations of the reports on the day before the accounts meeting of the Supervisory Board.

The Audit Committee reviewed the Financial Statements and Management's Report at its meeting on February 21, 2017, and discussed them in detail with the auditor. The Chairwoman of the Audit Committee gave a detailed account of the preliminary review at the Supervisory Board meeting on February 22, 2017. On the basis of this preliminary review by the Audit Committee, the Supervisory Board has examined the Financial Statements and Management's Report of BASF SE for 2016, the proposal by the Board of Executive Directors for the appropriation of profit as well as the Consolidated Financial Statements and Management's Report for the BASF Group for 2016. The Supervisory Board has reviewed, acknowledged and approved the auditor's reports. The results of the preliminary review by the Audit Committee and the results of the Supervisory Board's examination fully concur with those of the audit. The Supervisory Board sees no grounds for objection to the management and submitted reports.

At the Supervisory Board's accounts meeting on February 22, 2017, it approved the Financial Statements of BASF SE and the Consolidated Financial Statements of the BASF Group prepared by the Board of Executive Directors, making the 2016 Financial Statements of BASF SE final. The Supervisory Board concurs with the proposal of the Board of Executive Directors regarding the appropriation of profit and the payment of a dividend of €3.00 per share.

Composition of the Supervisory Board

Employee representative Wolfgang Daniel left the Supervisory Board at the conclusion of the Annual Shareholders' Meeting on April 29, 2016. He was succeeded by Waldemar Helber, who joined the Supervisory Board as the successor appointed by the BASF Works Council Europe on December 4, 2013, in accordance with the Employee Participation Agreement of November 15, 2007. The Supervisory Board thanks Wolfgang Daniel, who had been a member of the Supervisory Board since 1996, for his many years of service.

For more information on changes within the Supervisory Board, see the Corporate Governance Report on page 130

Thanks

The Supervisory Board thanks all employees of the BASF Group worldwide and the management for their personal contribution in the 2016 business year.

Ludwigshafen, February 22, 2017

The Supervisory Board

Jürgen Hambrecht
Chairman of the Supervisory Board

Declaration of Conformity pursuant to Section 161 of the German Stock Corporation Act (AktG)

Declaration of Conformity 2016 of the Board of Executive Directors and the Supervisory Board of BASF SE

The Board of Executive Directors and the Supervisory Board of BASF SE hereby declare pursuant to Section 161 AktG (Stock Corporation Act)

The recommendations of the Government Commission on the German Corporate Governance Code as amended on May 5, 2015, published by the Federal Ministry of Justice on June 12, 2015, in the official section of the electronic Federal Gazette, have been complied with since the submission of the last Declaration of Conformity in December 2015.

Ludwigshafen, December 2016

The Supervisory Board
of BASF SE

The Board of Executive Directors
of BASF SE

Declaration of Corporate Governance

Declaration of Corporate Governance as per Section 315(5) of the German Commercial Code (HGB) in connection with Section 289(a) HGB

The Declaration of Corporate Governance, pursuant to Section 315(5) HGB in connection with Section 289(a) HGB, comprises the subchapters Corporate Governance Report (except for the disclosures persuant to Section 315(4) HGB), Compliance and Declaration of Conformity as per Section 161 of the German Stock Corporation Act (AktG) in the Corporate Governance chapter. It is a component of the Management's Report.

4

To Our Shareholders 5
Management's Report 17
Corporate Governance 125

Consolidated Financial Statements

Supplementary Information on the Oil & Gas Segment 221
Overviews 231

Statement by the Board of Executive Directors — 153

Auditor's report — 154

Statement of income — 155

Statement of income and expense recognized in equity — 156

Balance sheet — 157

Statement of cash flows — 158

Statement of equity — 159

Notes

Policies and scope of consolidation
1 Summary of accounting policies — 160
2 Scope of consolidation — 172
3 BASF Group List of Shares Held in accordance with Section 313(2) of the German Commercial Code — 178
4 Reporting by segment and region — 178
Notes on statement of income
5 Earnings per share — 181
6 Functional costs — 182
7 Other operating income — 182
8 Other operating expenses — 183
9 Income from companies accounted for using the equity method — 184
10 Financial result — 185
11 Income taxes — 185
12 Minority interests — 188
13 Personnel expenses and employees — 188
Notes on balance sheet
14 Intangible assets — 189
15 Property, plant and equipment — 192
16 Investments accounted for using the equity method and other financial assets — 194
17 Inventories — 194
18 Receivables and miscellaneous assets — 195
19 Capital, reserves and retained earnings — 196
20 Other comprehensive income — 197
21 Minority interests — 197
22 Provisions for pensions and similar obligations — 198
23 Other provisions — 203
24 Liabilities — 204
25 Other financial obligations — 206
26 Risks from litigation and claims — 207
27 Supplementary information on financial instruments — 208
28 Leases — 214
Other explanatory notes
29 Statement of cash flows and capital structure management — 215
30 Share-price-based compensation program and BASF incentive share program — 216
31 Compensation for the Board of Executive Directors and Supervisory Board — 218
32 Related-party transactions — 218
33 Services provided by the external auditor — 219
34 Declaration of Conformity with the German Corporate Governance Code — 220
35 Nonadjusting events after the reporting period — 220

Statement by the Board of Executive Directors
and assurance pursuant to Sections 297(2) and 315(1) of the German Commercial Code (HGB)

The Board of Executive Directors of BASF SE is responsible for preparing the Consolidated Financial Statements and Management's Report of the BASF Group.

The BASF Group Consolidated Financial Statements for 2016 were prepared according to the International Financial Reporting Standards (IFRS), which are published by the International Accounting Standards Board (IASB), London, and have been endorsed by the European Union.

We have established effective internal control and steering systems in order to ensure that the BASF Group's Consolidated Financial Statements and Management's Report comply with applicable accounting rules and to ensure proper corporate reporting.

The risk management system we have set up is designed such that the Board of Executive Directors can identify material risks early on and take appropriate defensive measures as necessary. The reliability and effectiveness of the internal control and risk management system are continually audited throughout the Group by our internal audit department.

To the best of our knowledge, and in accordance with the applicable reporting principles, the Consolidated Financial Statements of the BASF Group give a true and fair view of the net assets, financial position and results of operations of the Group, and the Management's Report of the BASF Group includes a fair review of the development and performance of the business as well as position of the BASF Group, together with a description of the principal opportunities and risks associated with the expected development of the BASF Group.

Ludwigshafen am Rhein, February 21, 2017

Dr. Kurt Bock
Chairman

Dr. Martin Brudermüller
Vice Chairman

Dr. Hans-Ulrich Engel
Chief Financial Officer

Sanjeev Gandhi

Michael Heinz

Dr. Harald Schwager

Wayne T. Smith

Margret Suckale

Auditor's report

We have audited the consolidated financial statements prepared by BASF SE, Ludwigshafen am Rhein, Germany, comprising the statement of income, statement of income and expense recognized in equity, balance sheet, statement of cash flows, statement of equity and the Notes to the Consolidated Financial Statements together with the Group Management's Report for the business year from January 1 to December 31, 2016. The preparation of the Consolidated Financial Statements and the Group Management's Report in accordance with IFRSs as adopted by the European Union, and the additional requirements of German commercial law pursuant to Section 315a(1) of the German Commercial Code (HGB) are the responsibility of the parent company's management. Our responsibility is to express an opinion on the Consolidated Financial Statements and on the Group Management's Report based on our audit. In addition, we have been instructed to express an opinion as to whether the consolidated financial statements comply with full IFRS.

We conducted our audit of the Consolidated Financial Statements in accordance with Section 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institute of Public Auditors in Germany (*Institut der Wirtschaftsprüfer*, IDW). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the Consolidated Financial Statements in accordance with the applicable financial reporting framework and in the Group Management's Report are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Group and expectations as to possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the accounting-related internal control system and the evidence supporting the disclosures in the Consolidated Financial Statements and the Group Management's Report are examined primarily on a test basis within the framework of the audit. The audit includes assessing the annual financial statements of those entities included in consolidation, the determination of entities to be included in consolidation, the accounting and consolidation principles used and significant estimates made by the Board of Executive Directors, as well as evaluating the overall presentation of the consolidated financial statements and the group management report. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

In our opinion, based on the findings of our audit, the consolidated financial statements comply with IFRSs as adopted by the E.U., the additional requirements of German commercial law pursuant to Section 315a(1) HGB and full IFRS and 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 Group Management's Report is consistent with the Consolidated Financial Statements, conforms to legal requirements, and as a whole provides a suitable view of the Group's position and suitably presents the opportunities and risks of future development.

Frankfurt am Main, February 21, 2017

KPMG AG
Wirtschaftsprüfungsgesellschaft

Rega
Wirtschaftsprüfer

Krauß
Wirtschaftsprüfer

Statement of income
BASF Group

Statement of income (million €)

	Explanations in Note	2016	2015
Sales revenue	**[4]**	**57,550**	**70,449**
Cost of sales	[6]	(39,265)	(51,372)
Gross profit on sales		**18,285**	**19,077**
Selling expenses	[6]	(7,764)	(8,062)
General administrative expenses	[6]	(1,337)	(1,429)
Research and development expenses	[6]	(1,863)	(1,953)
Other operating income	[7]	1,780	2,004
Other operating expenses	[8]	(3,133)	(3,640)
Income from companies accounted for using the equity method	[9]	307	251
Income from operations	**[4]**	**6,275**	**6,248**
Income from other shareholdings		54	80
Expenses from other shareholdings		(71)	(71)
Net income from shareholdings		**(17)**	**9**
Interest income		179	213
Interest expenses		(661)	(638)
Interest result		**(482)**	**(425)**
Other financial income		97	152
Other financial expenses		(478)	(436)
Other financial result		**(381)**	**(284)**
Financial result	**[10]**	**(880)**	**(700)**
Income before taxes and minority interests		**5,395**	**5,548**
Income taxes	[11]	(1,140)	(1,247)
Income before minority interests		**4,255**	**4,301**
Minority interests	[12]	(199)	(314)
Net income		**4,056**	**3,987**
Earnings per share (€)	**[5]**	**4.42**	**4.34**
Dilution effect (€)	[5]	(0.01)	(0.01)
Diluted earnings per share (€)	**[5]**	**4.41**	**4.33**

Statement of income and expense recognized in equity
BASF Group

Statement of comprehensive income[1] (million €)

	2016			2015		
	BASF Group	Shareholders of BASF SE	Minority interests	BASF Group	Shareholders of BASF SE	Minority interests
Income before minority interests	**4,255**	**4,056**	**199**	**4,301**	**3,987**	**314**
Remeasurement of defined benefit plans[2]	(1,839)	(1,839)	–	973	973	–
Deferred taxes for gains/losses that cannot be reclassified	553	553	–	(273)	(273)	–
Gains/losses that cannot be reclassified after taxes from equity-accounted shareholdings	(3)	(3)	–	(12)	(12)	–
Gains/losses that cannot be reclassified	**(1,289)**	**(1,289)**	**–**	**688**	**688**	**–**
Unrealized gains/losses from fair value changes in available-for-sale securities	9	9	–	–	–	–
Reclassifications of realized gains/losses recognized in the income statement	0	0	–	0	0	–
Fair value changes in available-for-sale securities, net[3]	**9**	**9**	**–**	**–**	**–**	**–**
Unrealized gains/losses from cash flow hedges	(17)	(17)	–	(94)	22	(116)
Reclassifications of realized gains/losses recognized in the income statement	(51)	(51)	–	676	347	329
Cash flow hedges, net[3]	**(68)**	**(68)**	**–**	**582**	**369**	**213**
Unrealized gains/losses from currency translation	758	747	11	922	858	64
Deferred taxes for gains/losses that can be reclassified	8	8	–	(179)	(104)	(75)
Gains/losses that can be reclassified after taxes from equity-accounted shareholdings	100	100	–	82	82	–
Gains/losses that can be reclassified	**807**	**796**	**11**	**1,407**	**1,205**	**202**
Other comprehensive income after taxes	**(482)**	**(493)**	**11**	**2,095**	**1,893**	**202**
Comprehensive income	**3,773**	**3,563**	**210**	**6,396**	**5,880**	**516**

[1] For more information on other comprehensive income, see Note 20 on page 197.
[2] For more information, see Note 22, "Provisions for pensions and similar obligations," from page 198 onward.
[3] For more information, see Note 27, "Supplementary information on financial instruments," from page 208 onward.

Development of income and expense recognized in equity of shareholders of BASF SE (million €)

	Other comprehensive income				
	Remeasurement of defined benefit plans	Foreign currency translation adjustment	Measurement of securities at fair value	Cash flow hedges	Total income and expense recognized in equity
As of January 1, 2016	**(4,084)**	**652**	**20**	**(109)**	**(3,521)**
Additions	(1,842)	835	14	(61)	(1,054)
Releases	–	–	–	–	–
Deferred taxes	553	(11)	(2)	21	561
As of December 31, 2016	**(5,373)**	**1,476**	**32**	**(149)**	**(4,014)**
As of January 1, 2015	**(4,840)**	**(259)**	**20**	**(403)**	**(5,482)**
Additions	961	924	0	385	2,270
Releases	68[1]	–	–	–	68
Deferred taxes	(273)	(13)	0	(91)	(377)
As of December 31, 2015	**(4,084)**	**652**	**20**	**(109)**	**(3,521)**

[1] Reclassification to retained earnings in accordance with IAS 19.122; for more information, see Note 20 on page 197

Balance sheet
BASF Group

Assets (million €)

	Explanations in Note	Dec. 31, 2016	Dec. 31, 2015
Intangible assets	[14]	15,162	12,537
Property, plant and equipment	[15]	26,413	25,260
Investments accounted for using the equity method	[16]	4,647	4,436
Other financial assets	[16]	605	526
Deferred tax assets	[11]	2,513	1,791
Other receivables and miscellaneous assets	[18]	1,210	1,720
Noncurrent assets		**50,550**	**46,270**
Inventories	[17]	10,005	9,693
Accounts receivable, trade	[18]	10,952	9,516
Other receivables and miscellaneous assets	[18]	3,078	3,095
Marketable securities		536	21
Cash and cash equivalents[1]	[1]	1,375	2,241
Current assets		**25,946**	**24,566**
Total assets		**76,496**	**70,836**

Equity and liabilities (million €)

	Explanations in Note	Dec. 31, 2016	Dec. 31, 2015
Subscribed capital	[19]	1,176	1,176
Capital surplus	[19]	3,130	3,141
Retained earnings	[19]	31,515	30,120
Other comprehensive income	[20]	(4,014)	(3,521)
Equity of shareholders of BASF SE		**31,807**	**30,916**
Minority interests	[21]	761	629
Equity		**32,568**	**31,545**
Provisions for pensions and similar obligations	[22]	8,209	6,313
Other provisions	[23]	3,667	3,369
Deferred tax liabilities	[11]	3,317	3,381
Financial indebtedness	[24]	12,545	11,123
Other liabilities	[24]	873	869
Noncurrent liabilities		**28,611**	**25,055**
Accounts payable, trade		4,610	4,020
Provisions	[23]	2,802	2,540
Tax liabilities	[11]	1,288	1,082
Financial indebtedness	[24]	3,767	4,074
Other liabilities	[24]	2,850	2,520
Current liabilities		**15,317**	**14,236**
Total equity and liabilities		**76,496**	**70,836**

[1] For a reconciliation of the amounts in the statement of cash flows with the balance sheet item “cash and cash equivalents,” see page 158.

Statement of cash flows
BASF Group

Statement of cash flows[1] (million €)

	2016	2015
Net income	4,056	3,987
Depreciation and amortization of intangible assets, property, plant and equipment and financial assets	4,291	4,448
Changes in inventories	(182)	1,094
Changes in receivables	(640)	1,463
Changes in operating liabilities and other provisions	926	(1,210)
Changes in pension provisions, defined benefit assets and other items	(547)	(317)
Gains (–) / losses (+) from disposal of noncurrent assets and securities	(187)	(19)
Cash provided by operating activities	**7,717**	**9,446**
Payments made for property, plant and equipment and intangible assets	(4,145)	(5,812)
Payments made for financial assets and securities	(1,389)	(920)
Payments made for acquisitions	(2,828)	(215)
Payments received for divestitures	664	651
Payments received from the disposal of noncurrent assets and securities	1,208	1,061
Cash used in investing activities	**(6,490)**	**(5,235)**
Capital increases/repayments and other equity transactions	28	66
Additions to financial and similar liabilities	7,533	6,937
Repayment of financial and similar liabilities	(6,954)	(7,870)
Dividends paid		
To shareholders of BASF SE	(2,664)	(2,572)
minority shareholders	(103)	(234)
Cash used in financing activities	**(2,160)**	**(3,673)**
Net changes in cash and cash equivalents	**(933)**	**538**
Change in cash and cash equivalents		
From foreign exchange rates	66	(19)
changes in scope of consolidation	1	4
Cash and cash equivalents at the beginning of the year	**2,241**	**1,718**
Cash and cash equivalents at the end of the year	**1,375**	**2,241**

[1] More information on the statement of cash flows can be found in the Management's Report (Financial Position) on page 58. Other information on cash flows can be found in Note 29 on page 215.

Statement of equity
BASF Group

Statement of equity[1] (million €)

	Number of shares outstanding	Subscribed capital	Capital surplus	Retained earnings	Other comprehensive income[2]	Equity of shareholders of BASF SE	Minority interests	Equity
As of January 1, 2016	**918,478,694**	**1,176**	**3,141**	**30,120**	**(3,521)**	**30,916**	**629**	**31,545**
Effects of acquisitions achieved in stages	–	–	–	–	–	**–**	–	**–**
Dividend paid	–	–	–	(2,664)	–	**(2,664)**	(103)[3]	**(2,767)**
Net income	–	–	–	4,056	–	**4,056**	199	**4,255**
Changes to income and expense recognized directly in equity	–	–	–	–	(493)	**(493)**	11	**(482)**
Changes in scope of consolidation and other changes	–	–	(11)[4]	3	–	**(8)**	25	**17**
As of December 31, 2016	**918,478,694**	**1,176**	**3,130**	**31,515**	**(4,014)**	**31,807**	**761**	**32,568**
As of January 1, 2015	**918,478,694**	**1,176**	**3,143**	**28,777**	**(5,482)**	**27,614**	**581**	**28,195**
Effects of acquisitions achieved in stages	–	–	–	–	–	**–**	–	**–**
Dividend paid	–	–	–	(2,572)	–	**(2,572)**	(234)[3]	**(2,806)**
Net income	–	–	–	3,987	–	**3,987**	314	**4,301**
Changes to income and expense recognized directly in equity	–	–	–	–	1,893	**1,893**	202	**2,095**
Changes in scope of consolidation and other changes	–	–	(2)[4]	(72)[5]	68[6]	**(6)**	(234)	**(240)**
As of December 31, 2015	**918,478,694**	**1,176**	**3,141**	**30,120**	**(3,521)**	**30,916**	**629**	**31,545**

[1] For more information on the items relating to equity, see Notes 19 und 20 from page 196 onward.

[2] Details are provided in the table "Income and expense recognized in equity" on page 156.

[3] Including profit and loss transfers

[4] Granting of BASF shares under the BASF share program "*plus*"

[5] Including reclassification to retained earnings in accordance with IAS 19.122; for more information, see Note 19 on page 196

[6] Reclassification to retained earnings in accordance with IAS 19.122; for more information, see Note 20 on page 197

Policies and scope of consolidation

1 Summary of accounting policies

1.1 General information

BASF SE (registered at the district trade register, or *Amtsgericht*, for Ludwigshafen am Rhein, number HRB 6000) is a publicly listed corporation headquartered in Ludwigshafen am Rhein, Germany. Its official address is Carl-Bosch-Str. 38, 67056 Ludwigshafen am Rhein, Germany.

The Consolidated Financial Statements of BASF SE as of December 31, 2016, have been prepared in accordance with the International Financial Reporting Standards (IFRS) of the International Accounting Standards Board (IASB) and Section 315a (1) of the German Commercial Code (HGB). IFRSs are generally only applied after they have been endorsed by the European Union. For the 2016 fiscal year, all of the binding IFRSs and pronouncements of the International Financial Reporting Interpretations Committee (IFRIC) were applied.

The Consolidated Financial Statements are presented in euros. All amounts, including the figures for previous years, are given in million euros unless otherwise indicated.

The individual financial statements of the consolidated companies are prepared as of the balance sheet date of the Consolidated Financial Statements. The accounting policies applied are largely the same as those used in 2015, with the exception of any changes arising from the application of new or revised standards.

In its meeting on February 20, 2017, the Board of Executive Directors prepared the Consolidated Financial Statements, submitted them to the Supervisory Board for review and approval, and released them for publication.

1.2 Changes in accounting principles

Accounting policies applied for the first time in 2016

Amendments to IAS 1 – Disclosure Initiative

On December 18, 2014, the IASB issued amendments made to IAS 1. The amendments pertain to various disclosure requirements. It is made clear that information needs to be disclosed in the notes only if this is material for the company. This explicitly applies if a standard calls for a list of minimum disclosures. Explanations are moreover provided on the aggregation and disaggregation of line items in the balance sheet and statement of comprehensive income. Furthermore, the revised standard clarifies how an entity's share of the other comprehensive income of equity-accounted companies is to be presented in the statement of comprehensive income. The changes are effective for reporting periods beginning on or after January 1, 2016. An endorsement by the European Union was issued on December 19, 2015. Due to the recent revision of IAS 1, the contributions of companies accounted for using the equity method are now shown separately in the Statement of Comprehensive Income. In addition, noncontrolling interests have been distributed among the subitems under the separate "minority interests" column.

Amendments to IAS 16 and IAS 38 – Clarification of Acceptable Methods of Depreciation and Amortization

The IASB issued amendments to IAS 16 and IAS 38 on May 12, 2014. These revisions provide further guidance on determining an acceptable method of depreciation and amortization. Revenue-based methods are not permissible for property, plant and equipment and are only permissible for intangible assets in specific exceptional cases (rebuttable presumption of inappropriateness). The changes are effective for reporting periods beginning on or after January 1, 2016. The European Union's endorsement was issued on December 3, 2015. The amendments did not have a material effect on BASF.

Amendments to IAS 19 – Employee Contributions to Defined Benefit Plans

The IASB issued amendments to IAS 19 on November 21, 2013. The amendments clarify requirements dealing with the allocation to service periods of employee or third-party contributions in cases where these are linked to the service period. Furthermore, practical expedients were made for cases where contributions are independent from the number of service years. The European Union endorsed the changes on January 9, 2015. In a deviation from the IASB's effective date (reporting periods beginning on or after July 1, 2014), IFRS-based financial statements in the European Union must apply the amendments for reporting periods beginning on or after February 1, 2015. The application of the amendments did not materially affect BASF.

Amendments to IFRS 11 – Accounting for Acquisitions of Interests in Joint Operations

The IASB issued amendments to IFRS 11 on May 6, 2014. IFRS 11 includes regulations on the recognition of assets and liabilities and gains or losses of joint ventures and joint operations. Whereas joint ventures are accounted for using the equity method, joint operations, according to IFRS 11, are recognized in a similar fashion to proportional consolidation. With the amendment to IFRS 11, IASB regulates the accounting for the acquisition of shares in a joint operation, which constitutes a business according to IFRS 3 – Business Combinations. In such cases, the acquirer shall apply the principles of accounting for business combinations according to IFRS 3. Furthermore, the disclosure requirements in IFRS 3 also apply in such cases. The amendments are effective for reporting periods beginning on or after January 1, 2016. An endorsement by the European Union was issued on November 25, 2015. BASF did not acquire shares in a joint operation in 2016.

IFRS Annual Improvements Cycle 2010–2012

Under its Annual Improvement Project, the IASB issued amendments to several standards on December 12, 2013. The affected standards are IFRS 2, IFRS 3, IFRS 8, IFRS 13, IAS 16, IAS 24 and IAS 38. The amendments address details of the recognition, measurement and disclosure of business transactions or serve to standardize terminology. The European Union endorsed the changes on January 9, 2015. In a deviation from the IASB's effective date (reporting periods beginning on or after July 1, 2014), IFRS-based financial statements in the European Union must apply the amendments for reporting periods beginning on or after February 1, 2015. The application of the amendments did not materially affect BASF.

IFRS Annual Improvements Cycle 2012–2014

Under its Annual Improvement Project, the IASB issued amendments to several standards on September 25, 2014. The affected standards are IAS 19, IAS 34, IFRS 5 and IFRS 7. The amendments address details of the recognition, measurement and disclosure of business transactions or serve to standardize terminology. The changes are effective for reporting periods beginning on or after January 1, 2016. An endorsement by the European Union was issued on December 16, 2015. The application of the amendments did not materially affect BASF.

IFRSs and IFRICs not yet to be considered

The effects on the BASF Group financial statements of the IFRSs and IFRICs not yet in force or not yet endorsed by the European Union in 2016 were reviewed and are explained below.

IFRS 9 – Financial Instruments

On July 24, 2014, the IASB issued the final version of IFRS 9, concluding the multiyear project to replace IAS 39 – Financial Instruments: Recognition and Measurement. IFRS 9 contains new requirements for the classification and measurement of financial instruments, fundamental changes regarding the accounting treatment of financial asset impairments, and a reformed approach to hedge accounting. The new standard will be effective for reporting periods beginning on or after January 1, 2018. The European Union endorsed the standard in the fourth quarter of 2016.

IFRS 9 retains "amortized cost" and "fair value" as the criteria for measuring financial instruments. Whether financial assets are measured at amortized cost or fair value will depend on two factors: the entity's business model for managing the portfolio to which the financial asset belongs and the contractual cash flow characteristics of the financial asset.

In the future, the recognition of financial asset impairments is based on expected losses according to IFRS 9. The general approach adopts a three-stage model to assess the provisions for risks. The model requires different degrees of impairment based on the credit default risk of the counterparties. For certain financial instruments, such as trade accounts receivable, operational simplifications for recognizing impairment losses apply.

The IFRS 9 regulations on hedge accounting aim for a closer alignment of hedge accounting with the entity's risk management strategy.

The new requirements for classification and measurement could have an impact on the accounting treatment of other shareholdings. BASF currently measures almost all of these shareholdings at amortized cost, in line with IAS 39.46c. Because IFRS 9 does not contain any comparable regulations, BASF is currently reviewing what represents the best metric for estimating fair value on a case-by-case basis. BASF will determine on an instrument-by-instrument basis whether measurement will take place at fair value through other comprehensive income or at fair value through profit or loss.

As IFRS 9 introduces a cash flow condition that needs to be considered in classifying financial assets, it is possible that financial assets measured at amortized cost or at fair value through other comprehensive income as per IAS 39 may, in the future, need to be measured at fair value through profit or loss. BASF will conduct this analysis in 2017. Impacts may especially be observed for securities that are currently classified as available-for-sale financial assets and thus measured at fair value through other comprehensive income. Depending on the cash flow characteristics of these financial instruments, measurement at fair value through profit or loss may be required in the future.

Recognition of expected losses for trade accounts receivable will largely take place on the basis of internal and external customer ratings and the associated probability of default.

Furthermore, the new impairment model is also to be used for other financial instruments measured at amortized cost, such as bank balances, loan receivables and miscellaneous receivables to the extent that they represent financial instruments. As no group-wise individual valuation allowances are currently calculated for such financial assets, the introduction of IFRS 9 will probably mean an increase in the risk provision. This effect cannot yet be reliably quantified.

With regard to new hedge accounting regulations, BASF assumes that, in principle, all existing hedge accounting relationships may be continued under IFRS 9. It has not yet been fully determined how the accounting choices concerning the designation of derivatives, as introduced by IFRS 9, will be exercised.

BASF has not opted for early application of the new standard. At the moment, BASF assumes that the new regulations can be applied prospectively to a large extent. The difference in the impairment amount that will arise upon transition to IFRS 9 will be recognized in equity at the beginning of the business year of the first-time adoption of the standard. Exceptions to the prospective application are the regulations on accounting for the time value of options if only the intrinsic value is designated, and the analysis of the cash flow condition that generally pertains to the point in time of the first recognition of each financial instrument.

IFRS 15 – Revenues from Contracts with Customers
The IASB published the new standard on revenue recognition, IFRS 15, on May 28, 2014. The revised standard particularly aims to standardize existing regulations and thus improve transparency and the comparability of financial information. The rules and definitions of IFRS 15 supersede the content of IAS 11, IAS 18, IFRIC 13. The new standard will be effective for reporting periods beginning on or after January 1, 2018. BASF does not plan to adopt the standard early. The European Union endorsed the standard in 2016.

The new standard does not differentiate between different types of contracts and services, but rather introduces uniform criteria for the timing of revenue recognition. According to IFRS 15, sales revenue is recognized when control of the agreed-upon goods or services and the benefits obtainable from them are transferred to the customer. Sales revenue is measured as the amount the entity expects to receive in exchange for goods and services.

The new model for the determination of revenue recognition is based on five steps:
– Step 1: Identify the contract(s) with a customer
– Step 2: Identify the performance obligations in the contract
– Step 3: Determine the transaction price
– Step 4: Allocate the transaction price to the performance obligations in the contract
– Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation

The new standard's potential impact on BASF's net assets, financial position and results of operations is being assessed. A Group-wide analysis was conducted to investigate the extent to which BASF is affected by the new standard.

First, the major types of contracts were identified at an operating division level and analyzed with regard to the changes in accounting under IFRS 15. Based on the results, the need for adjustment is currently being assessed.

Analysis of the contracts showed that contracts with customers almost exclusively contain one service component or a number of similar service components and that these must be fulfilled by a certain point in time. Furthermore, contracts with customers were identified that could lead, according to IFRS 15, to a shift in time of revenue recognition. These are mainly contracts with several contractual obligations and revenues from issuing licenses. In such cases, revenue recognition according to IFRS 15 will take place at both an earlier and later point in time than it had been previously. BASF assumes that fulfillment of the new standard's requirements will necessitate the introduction of the balance sheet items "contractual asset" and "contractual liability" as well as more comprehensive quantitative and qualitative disclosures in the Notes to the Consolidated Financial Statements. The analyses showed no grounds to expect material impact on BASF's results of operations or net assets.

BASF is currently planning to apply IFRS 15 for the first time on January 1, 2018, by adjusting equity in the amount of the cumulative effect (modified retroactive application).

IFRS 16 – Leases
The IASB published the new standard on leasing, IFRS 16, on January 13, 2016. The rules and definitions of IFRS 16 supersede the content of IAS 17, IFRIC 4, SIC 15 and SIC 27. The standard requires an accounting model for a lessee that recognizes all assets and liabilities from leasing agreements in the balance sheet, unless the term is twelve months or less or the underlying asset is of low value. As for the lessor, the new standard substantially carries forward the lessor accounting requirements of IAS 17 – Leases. The new standard will be effective for reporting periods beginning on or after January 1, 2019. An endorsement by the European Union is still pending. BASF does not plan on early adoption and will likely recognize the cumulative adjustment effect in equity on January 1, 2019.

Amendments to IFRS 10 and IAS 28 – Sale or Contribution of Assets between an Investor and its Associate or Joint Venture
The IASB issued amendments to IFRS 10 and IAS 28 on September 11, 2014. The amendments address a known inconsistency between the requirements of IFRS 10 and IAS 28 (2011) in the case of the sale of an asset to an associated company or a joint venture or the contribution of an asset to an associated company or a joint venture. According to IFRS 10, if the disposal of a subsidiary by a parent company results in a loss of control, it recognizes the gain or loss on the sale of the subsidiary in the full amount in the income statement. In contrast, the currently applicable IAS 28.28 requires that a gain on sales transactions between an investor and an investment accounted for using the equity method – whether it be an associated company or joint venture – is recognized only to the extent of the investor's interests in the associated company or joint venture. In the future, the entire gain or loss arising from a transaction shall only be recognized when the assets sold or contributed constitute a business combination according to IFRS 3. This applies regardless of whether the transaction is a share or asset deal. Only a pro rata recognition of gain is permissible if the assets do not constitute a business combination. IASB has postponed the effective date of the changes indefinitely.

IASB issued further amendments to standards and interpretations whose application is not yet mandatory and whose application also requires the endorsement of E.U. law. These amendments are unlikely to have a material impact on the reporting of BASF SE.

Amendments to IAS 7 – Statement of Cash Flows: The amendments pursue the objective that entities provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities. The amendments are – subject to E.U. endorsement – to be applied for the first time in the first reporting period of a business year beginning on or after January 1, 2017, although early adoption is permissible.

Amendments to IAS 12 – Income Taxes: The amendments to IAS 12 particularly aim to clarify how to account for deferred tax assets for unrealized losses related to assets measured at fair value, which are currently handled variously in practice. The amendments are – subject to E.U. endorsement – to be applied for the first time in the first reporting period of a business year beginning on or after January 1, 2017, although early adoption is permissible.

Amendments to IFRS 2 – Classification and Measurement of Share-Based Payment Transactions: The amendments involve a number of individual issues pertaining to the accounting of cash-settled share-based payment transactions. IFRS 2 now contains requirements on determining the fair value of obligations resulting from share-based payment transactions. The amendments are – pending E.U. endorsement – to be applied to compensation granted or changed in business years beginning on or after January 1, 2018. Early adoption is permissible.

Amendments to IFRS 4 – Insurance Contracts: The amendments aim to minimize the effects of various first-time application dates of IFRS 9, especially for entities with extensive insurance activities. The amendments are – pending E.U. endorsement – to be applied for the first time starting January 1, 2018.

Supplementary information on IFRS 15 – Revenues from Contracts with Customers: The amendments clarify various regulations in IFRS 15 and provide transition relief for the new standard. Beyond clarification, the changed standard also contains two additional practical expedients for reducing complexity and cost in the transfer to the new standard. These concern options for the presentation of contracts that are either concluded by the start of the earliest-presented period or that have been changed before the start of the earliest-presented period. The amendments are – pending E.U. endorsement – to be applied for the first time starting January 1, 2018.

Supplementary information on IFRIC 22 – Foreign Currency Transactions and Advance Consideration: IFRIC 22 addresses an application question for IAS 21 – The Effects of Changes in Foreign Exchange Rates. It clarifies the point in time for determining the exchange rate used to translate foreign-currency transactions containing advance payments that have been made or received. The date of the initial recognition of an asset or liability resulting from advance consideration is essential for determining the exchange rate for the underlying asset, income or expense. The interpretation is – pending E.U. endorsement – to be applied for the first time in the first reporting period of a business year beginning on or after January 1, 2018. Early adoption is permissible.

Annual Improvements to IFRSs (2014–2016): Three IFRSs were amended in the Annual Improvements to IFRSs (2014–2016). In IFRS 12, it was clarified that disclosures pursuant to IFRS 12 generally also apply to an entity's interests in subsidiaries, joint ventures and associated companies that are classified as held for sale in accordance with IFRS 5, with the exception of the disclosures outlined in IFRS 12.B10–B16 (Financial Information). In IAS 28, it was clarified that the election to measure an investment in an associated company or a joint venture held by an entity that is a venture capital organization or other qualifying entity, can be exercised on an investment-by-investment basis. The short-term exemptions in IFRS 1, Appendix E (IFRS 1.E3–E7) for first-time IFRS users were deleted. Pending E.U. endorsement, the amendments to IFRS 12 are to be applied for the first time in the first reporting period of a business year beginning on or after January 1, 2017. Early adoption is permissible.

1.3 Group accounting principles

Scope of consolidation: The scope of consolidation is based on the application of the standards IFRS 10 and 11.

According to IFRS 10, a group consists of a parent entity and the subsidiaries controlled by the parent. "Control" of an investee assumes the simultaneous fulfillment of the following three criteria:

– The parent company holds decision-making power over the relevant activities of the investee
– The parent company has rights to variable returns from the investee
– The parent company can use its decision-making power to affect the variable returns

Based on corporate governance and potential supplementary agreements, companies are analyzed for their relevant activities and variable returns, and the link between the variable returns and the extent to which their relevant activities could be influenced.

According to IFRS 11, which regulates the accounting of joint arrangements, a distinction must be made between joint ventures and joint operations. In the case of a joint venture, the parties that have joint control of a legally independent company have rights to the net assets of that arrangement. In joint operations, the parties that have joint control have direct rights to the assets and obligations for the liabilities relating to the arrangement. This requirement is particularly fulfilled if the production output of the joint arrangement is almost entirely transferred to the partners, through which the partners guarantee the joint arrangements' ongoing financing.

Companies whose corporate governance structures classify them as joint arrangements are analyzed to determine if they meet the criteria for joint ventures or joint operations as per IFRS 11. This requires an analysis of the joint arrangement's structure. Should the arrangement be structured through a separate vehicle, its legal form, contractual arrangements and all other facts and circumstances are reviewed.

In addition to BASF SE, the Consolidated Financial Statements include all material subsidiaries on a fully consolidated and all material joint operations on a proportionally consolidated basis. Companies whose business is dormant or of low volume, and are of secondary importance for the presentation of a true and fair view of the net assets, financial position and results of operations, are not consolidated, but rather are reported under other shareholdings. These companies are carried at amortized cost and are written down in the case of an impairment. The aggregate assets and equity of these companies amount to less than 1% of the corresponding value at the Group level.

Joint ventures and associated companies are accounted for using the **equity method** in the Consolidated Financial Statements. Associated companies are entities in which significant influence can be exercised over their operating and financial policies and which are not subsidiaries, joint ventures or joint operations. In general, this applies to companies in which BASF has an investment of between 20% and 50%. Equity-accounted income is reported as part of income from operations (EBIT).

Consolidation methods: Assets and liabilities of consolidated companies are uniformly recognized and measured in accordance with the principles described herein. For equity-accounted companies, material deviations in measurement resulting from the application of other accounting principles than those used at BASF are adjusted for.

Transactions between consolidated companies as well as intercompany profits resulting from trade between consolidated companies are eliminated in full; for joint operations, they are proportionally eliminated. Material intercompany profits related to companies accounted for using the equity method are eliminated.

Capital consolidation is conducted at the acquisition date according to the purchase method. Initially, all assets, liabilities and additional intangible assets that are to be capitalized are measured at fair value. Finally, the acquisition cost is compared with the proportional share of the net assets acquired at fair value. The resulting positive differences are capitalized as goodwill. Negative differences are reviewed once more, then recognized directly in the income statement.

The incidental acquisition costs of a business combination are recognized in the income statement under other operating expenses.

Foreign currency translations: The cost of assets acquired in foreign currencies and revenue from sales in foreign currencies are determined by the exchange rate on the date of the transaction. Foreign currency receivables and liabilities are valued at the exchange rates on the balance sheet date. Changes in assets and liabilities arising from foreign currency translation are recognized in the income statement and reported under other operating expenses or income, other financial result, and available-for-sale financial assets in other comprehensive income.

Translation of foreign currency financial statements: The translation of foreign currency financial statements depends on the functional currency of the consolidated companies. For companies whose functional currency is not the euro but a local currency, translation into the reporting currency is based on the closing rate method: Balance sheet items are translated into euros using closing rates on the balance sheet date; expenses and income are translated into euros at monthly average rates and accumulated for the year. The difference between a company's translated equity at historical rates at the time of acquisition or retention and its equity at closing rates on the balance sheet date is reported separately in equity under other comprehensive income (translation adjustments) and is recognized in income only upon the company's disposal.

For certain companies outside the eurozone or U.S. dollar zone, the euro or U.S. dollar is the functional currency. In such cases, the translation into the functional currency of financial statements prepared in the local currency is done according to the temporal method: All nonmonetary assets and related depreciation and amortization as well as equity are translated at the exchange rate applying to the respective transactions. All other balance sheet items are translated using closing rates on the balance sheet date; other expenses and income are translated at monthly average rates. The resulting translation differences are recognized in the income statement under other operating income or expenses. If necessary, financial statements in the functional currency are translated into the presentation currency according to the closing rate method.

Selected exchange rates (€1 equals)

	Closing rates		Average rates	
	Dec. 31, 2016	Dec. 31, 2015	2016	2015
Brazil (BRL)	3.43	4.31	3.86	3.70
China (CNY)	7.32	7.06	7.35	6.97
Great Britain (GBP)	0.86	0.73	0.82	0.73
Japan (JPY)	123.40	131.07	120.20	134.28
Malaysia (MYR)	4.73	4.70	4.58	4.33
Mexico (MXN)	21.77	18.91	20.67	17.61
Norway (NOK)	9.09	9.60	9.29	8.95
Russia (RUB)	64.30	80.67	74.14	68.02
Switzerland (CHF)	1.07	1.08	1.09	1.07
South Korea (KRW)	1,269.36	1,280.78	1,284.18	1,255.98
United States (USD)	1.05	1.09	1.11	1.11

1.4 Accounting policies

Revenue recognition

Revenues from the sale of goods or the rendering of services are recognized upon the transfer of ownership and risk to the buyer. They are measured at the fair value of the consideration received. Sales revenues are reported without sales tax. Expected rebates and other trade discounts are accrued or deducted. Provisions are recognized according to the principle of individual measurement to cover probable risks related to the return of products, future warranty obligations and other claims.

Revenues from the sale of precious metals to industrial customers are recognized at the time of shipment and the corresponding purchase prices are recorded at cost of sales. In the trading of precious metals and their derivatives with broker-traders, where there is usually no physical delivery, revenues are netted against their corresponding costs. Revenues from marketing the natural gas from the Yuzhno Russkoye gas field are treated in the same manner.

Income relating to the sale or licensing of technologies or technological expertise are recognized in the income statement according to the contractually agreed-upon transfer of the rights and obligations associated with those technologies.

Assets

Acquired intangible assets (excluding goodwill) with defined useful lives are valued at cost less straight-line amortization. The useful life is determined using the period of the underlying contract or the period of time over which the intangible asset can be expected to be used.

Impairments are recognized if the recoverable amount of the asset is lower than the carrying amount. The recoverable amount is the higher of either fair value less costs to sell or the value in use. The value in use is determined on the basis of future cash inflows and outflows, and the weighted average cost of capital after taxes, depending on tax rates and country-related risks. If the reasons for an impairment no longer exist, the write-downs are reversed up to the value of the asset, had an impairment not been recognized. Depending on the type of intangible asset, amortization is reported under cost of sales, selling expenses, research and development expenses or other operating expenses.

Intangible assets with indefinite useful lives are trade names and trademarks that have been acquired as part of acquisitions. These are measured at cost and tested for impairment annually, or if there is an indication that their value has declined.

Internally generated intangible assets primarily comprise internally developed software. Such software and other internally generated assets are measured at cost and amortized over their estimated useful lives. Impairments are recognized if the carrying amount of an asset exceeds the recoverable amount. In addition to those costs directly attributable to the asset, costs of internally generated intangible assets also include an appropriate portion of overhead costs. Borrowing costs are capitalized to the extent that they apply to the purchase or the period of construction of qualifying assets.

The estimated useful lives and amortization methods of intangible assets are based on historical values, plans and estimates. These estimates also consider the period and distribution of future cash inflows and outflows. The weighted average amortization periods of intangible assets amounted to:

Average amortization in years

	2016	2015
Distribution, supply and similar rights	14	14
Product rights, licenses and trademarks	19	18
Know-how, patents and production technologies	14	12
Internally generated intangible assets	4	4
Other rights and values	5	7

Emission rights: Emission right certificates, granted free of charge by the German Emissions Trading Authority (Deutsche Emissionshandelsstelle) or a similar authority in other countries, are recognized on the balance sheet with a value of zero. Certificates purchased on the market are capitalized at cost as intangible assets. Emissions generated create an obligation to surrender the emission certificates. Emission certificates purchased on the market are subsequently measured at fair value, up to a maximum of the amount of the acquisition costs. If the fair value is lower than the carrying amount on the balance sheet date, the emission rights are impaired.

Goodwill is only written down if there is an impairment. Impairment testing takes place once a year and whenever there is an indication of an impairment.

Property, plant and equipment are measured at cost less depreciation and impairment over their useful lives. The revaluation method is not applied. Low-value assets are fully written off in the year of acquisition.

The cost of self-constructed plants includes direct costs, appropriate allocations of material and production overhead costs, and a share of the general administrative costs of the divisions involved in the construction of the plants. Borrowing costs are capitalized to the extent that they apply to the purchase or the period of construction of qualifying assets.

Expenditures related to the scheduled maintenance of large-scale plants are separately capitalized and depreciated using the straight-line method over the period until the next planned turnaround. Costs for the replacement of components are recognized as assets when an additional future benefit is expected. The carrying amount of the replaced components is derecognized. Costs for maintenance and repair as part of normal business operations are recognized as an expense.

Both movable and immovable fixed assets are for the most part depreciated using the straight-line method, with the exception of production licenses and plants in the Oil & Gas segment, which are primarily depreciated based on use in accordance with the unit of production method. The estimated useful lives and depreciation methods applied are based on historical values, plans and estimates. These estimates also consider the period and distribution of future cash inflows and outflows. The depreciation methods, useful lives and residual values are reviewed at each balance sheet date. The weighted average depreciation periods were as follows:

Weighted average depreciation in years

	2016	2015
Buildings and structural installations	22	23
Machinery and technical equipment	10	10
Long-distance natural gas pipelines	25	25
Miscellaneous equipment and fixtures	7	7

Impairments are recognized if the recoverable amount of the asset is lower than the carrying amount. The measurement is based on fair value less costs to sell or the value in use. The value in use is determined on the basis of future cash inflows and outflows, and the weighted average cost of capital after taxes, depending on tax rates and country-related risks. An impairment is recognized for the difference between the carrying amount and the recoverable amount. If the reasons for an impairment no longer exist, the write-downs are reversed up to the value of the asset, had an impairment not been recognized.

Investment properties held to realize capital gains or rental income are immaterial. They are valued at the lower of fair value or acquisition cost less depreciation.

Leases: A lease is an agreement whereby the lessor conveys to the lessee the right to use an asset for an agreed period of time in return for a payment or series of payments. Leasing contracts are classified as either finance or operating leases.

Assets subject to operating leases are not capitalized. Lease payments are recognized in the income statement in the period they are incurred.

A lease is classified as a finance lease if it substantially transfers all the risks and rewards related to the leased asset. Assets subject to a finance lease are capitalized at the lower of the fair value of the leased assets or the present value of the minimum lease payments. A leasing liability is recorded in the same amount. The periodic lease payments must be divided into principal and interest components. The principal component reduces the outstanding liability, while the interest component represents an interest expense. Depreciation takes place over the shorter of the useful life of the asset or the period of the lease.

Leases can be embedded within other contracts. If separation is required under IFRS, then the embedded lease is recorded separately from its host contract and each component of the contract is carried and measured in accordance with the applicable regulations.

Borrowing costs: Borrowing costs directly incurred as part of the acquisition, construction or production of a qualifying asset are capitalized as part of the acquisition or production cost of that asset. A qualifying asset is an asset for which the time period necessary to make it ready for its intended use or sale is longer than one year. Borrowing costs are capitalized up to the date the asset is ready for its intended use. The borrowing costs were calculated based on a rate of 2.5% (2015: 3.0%) and adjusted on a country-specific basis, if necessary. All other borrowing costs are recognized as an expense in the period in which they are incurred.

Government grants: Government grants related to the acquisition or construction of property, plant and equipment reduce the acquisition or construction cost of the respective assets. Other government grants or government assistance are recognized immediately as other operating income or treated as deferred income and reversed over the underlying period.

Investments accounted for using the equity method: The carrying amounts of these companies are adjusted annually based on the pro rata share of net income, dividends and other changes in equity. Should there be indications of a permanent reduction in the value of an investment, an impairment is recognized in the income statement.

Inventories are measured at acquisition cost or cost of conversion based on the weighted average method. If the market price or fair value of the sales product which forms the basis for the net realizable value is lower, then the sales products are written down to this lower value. The net realizable value is the estimated price in the ordinary course of business less the estimated costs of completion and the estimated selling costs.

In addition to direct costs, cost of conversion includes an appropriate allocation of production overhead costs based on normal utilization rates of the production plants, provided that they are related to the production process. Pensions, social services and voluntary social benefits are also included, as well as allocations for administrative costs, provided they relate to the production. Borrowing costs are not included in cost of conversion.

Inventories may be written down if the prices for the sales products decline, or in cases of a high rate of days sales of inventory (DSI). Write-downs on inventories are reversed if the reasons for them no longer apply.

The exception made by IAS 2 for traders is applied to the measurement of precious metal inventories. Accordingly, inventories held exclusively for trading purposes are to be measured at fair value less costs to sell. All changes in value are recognized in the income statement.

Deferred taxes: Deferred taxes are recorded for temporary differences between the carrying amount of assets and liabilities in the financial statements and the carrying amounts for tax purposes as well as for tax loss carryforwards and unused tax credits. This also comprises temporary differences arising from business combinations, with the exception of goodwill. Deferred tax assets and liabilities are calculated using the respective country-specific tax rates applicable for the period in which the asset or liability is realized or settled. Tax rate changes enacted or substantively enacted on or before the balance sheet date are taken into consideration.

Deferred tax assets are offset against deferred tax liabilities provided they are related to the same taxation authority and have the same maturities. Surpluses of deferred tax assets are only recognized provided that the tax benefits are likely to be realized. The valuation of deferred tax assets is based on the estimated probability of a reversal of the differences and the ability to utilize tax loss carryforwards and unused tax credits. This depends on whether future taxable profits will exist during the period in which temporary differences are reversed and in which tax loss carryforwards and unused tax credits can be claimed. Based on experience and the expected development of taxable income, it is assumed that the benefits of the recognized deferred tax assets will be realized. The valuation of deferred tax assets is based on internal projections of the future earnings of the particular Group company.

Changes in deferred taxes in the balance sheet are recorded as deferred tax expense or income if the underlying transaction is not to be recognized directly in equity or in income and expenses recognized in equity. For those effects which have been recognized in equity, changes to deferred tax assets and tax liabilities are also recognized directly in equity.

Deferred tax liabilities are recognized for differences between the proportional IFRS equity and the tax base of the investment in a consolidated subsidiary if a reversal of these differences is expected in the foreseeable future. Deferred tax liabilities are recognized for dividend distributions which are planned for the following year if these distributions lead to a reversal of temporary differences.

For more information, see Note 11 from page 185 onward

Financial instruments

Financial assets and financial liabilities are recognized in the balance sheet when the BASF Group becomes a party to a financial instrument. Financial assets are derecognized when the contractual rights to the cash flows from the financial asset expire or when the financial asset, with all risks and rewards of ownership, is transferred. Financial liabilities are derecognized when the contractual obligation expires, is discharged or cancelled. Regular-way purchases and sales of financial instruments are accounted for using the settlement date; in precious metals trading, the day of trading is used.

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When pricing on an active market is available, for example on a stock exchange, this price is used for the measurement. Otherwise, the measurement is based on internal measurement models using current market parameters or external measurements, for example, from banks. These internal measurements predominantly use the net present value method and option pricing models.

If there is objective evidence of a permanent impairment of a financial instrument that is not measured at fair value through profit or loss, an impairment loss is recognized. If the reason for the impairment of loans and receivables as well as held-to-maturity financial instruments no longer exists, the impairment is reversed up to the amortized cost and recognized in the income statement. Impairments on financial instruments are booked in separate accounts.

Financial assets and liabilities are divided into the following measurement categories:

– **Financial assets and liabilities at fair value recognized in the income statement** consist of derivatives and other trading instruments. At BASF, this measurement category only includes derivatives. Derivatives are reported in other receivables and miscellaneous assets or other liabilities. BASF does not make use of the fair value option under IAS 39. The calculation of fair values is based on market parameters or measurement models based on such parameters. In some exceptional cases, the fair value is calculated using parameters which are not observable on the market.

– **Loans and receivables** comprise financial assets with fixed or determinable payments, which are not quoted on an active market and are not derivatives or classified as available-for-sale. This measurement category includes trade accounts receivable as well as other receivables and loans reported under other receivables and miscellaneous assets. Initial measurement is done at fair value, which generally matches the nominal value of the receivable or loan. Interest-free and low-interest long-term loans and receivables are recorded at present value. Subsequent measurement recognized in income is generally made at amortized cost using the effective interest method.

  If there is objective evidence for an impairment of a receivable or loan, an individual valuation allowance is made. When assessing the need for a valuation allowance, regional and sector-specific conditions are considered. In addition, use is made of internal and external ratings as well as the assessments of debt collection agencies and credit insurers, when available. A portion of receivables is covered by credit insurance. Bank guarantees and letters of credit are used to an insignificant extent. Valuation allowances are only recognized for those receivables which are not covered by insurance or other collateral. The valuation allowances for receivables whose insurance includes a deductible are not recognized in excess of the amount of the deductible. Write-downs are based on historical values relating to customer solvency and the age, period overdue, insurance policies and customer-specific risks. In addition, a valuation allowance must be recognized when the contractual conditions which form the basis for the receivable are changed through renegotiation in such a way that the present value of the future cash flows decreases.

  Furthermore, valuation allowances are made on receivables based on transfer risks for certain countries.

  If, in a subsequent period, the amount of the valuation allowance decreases and the decrease can be related objectively to an event occurring after the valuation allowance was made, then it must be reversed in the income statement. Reversals of valuation allowances may not exceed amortized cost. Loans and receivables are derecognized when they are definitively found to be uncollectible.
– **Held-to-maturity financial assets** consist of nonderivative financial assets with fixed or determinable payments and a fixed term, for which there is the ability and intent to hold until maturity, and which do not fall under other valuation categories. Initial measurement is done at fair value, which matches the nominal value in most cases. Subsequent measurement is carried out at amortized cost, using the effective interest method.

  For BASF, there are no material financial assets that fall under this category.
– **Available-for-sale financial assets** comprise financial assets which are not derivatives and do not fall under any of the previously stated valuation categories. This measurement category comprises shareholdings reported under the item other financial assets which are not accounted for using the equity method as well as short and long-term securities.

  The measurement is carried out at fair value. Changes in fair value are recognized directly in equity under the item other comprehensive income and are only recognized in the income statement when the assets are disposed of or have been impaired. Subsequent reversals are recognized directly in equity (other comprehensive income). Only in the case of debt instruments are reversals recognized up to the amount of the original impairment in the income statement; reversals above this amount are recognized directly in equity. If the fair value of available-for-sale financial assets drops below acquisition costs, the assets are impaired if the decline in value is significant and can be considered lasting. The fair values are determined using market prices. Shareholdings whose fair value cannot be reliably determined are carried at acquisition cost and are written down in the case of an impairment. When determining the value of these shareholdings, the acquisition costs constitute the best estimate of their fair value. This category of shareholdings includes investments in other shareholdings, provided that these shares are not publicly traded. There are no plans to sell significant stakes in these shareholdings.
– **Financial liabilities which are not derivatives** are initially measured at fair value, which normally corresponds to the amount received. Subsequent measurement is carried out at amortized cost, using the effective interest method.
– **Cash and cash equivalents** consist primarily of cash on hand and bank balances with maturities of less than three months.

There were no reclassifications from one measurement category to another in 2016 and 2015. The same applies for transfers between levels in the fair value hierarchy.

Revenue from interest-bearing assets is recognized on the outstanding receivables on the balance sheet date using interest rates calculated by means of the effective interest method. Dividends from shareholdings not accounted for using the equity method are recognized when the shareholders' right to receive payment is established.

Derivative financial instruments can be embedded within other contracts. If IFRS requires separation, then the embedded derivative is accounted for separately from its host contract and measured at fair value.

Financial guarantees of the BASF Group are contracts that require compensation payments to be made to the guarantee holder if a debtor fails to make payment when due under the terms of the financial guarantee. Financial guarantees given by BASF are measured at fair value upon initial recognition. In subsequent periods, financial guarantees are carried at the higher of amortized cost or the best estimate of the present obligation on the financial reporting date.

Cash flow hedge accounting is applied for selected deals to hedge future transactions. The effective portion of the change in fair value of the derivative is thereby recognized directly in equity under other comprehensive income, taking deferred taxes into account. The ineffective portion is recognized immediately in the income statement. In the case of future transactions that will lead to a nonfinancial asset or a nonfinancial debt, the cumulative fair value changes in equity are either charged against the acquisition costs on initial recognition or recognized in profit or loss in the reporting period in which the hedged item is recorded in the income statement. For hedges based on financial assets or debts, the cumulative fair value changes of the hedges are transferred from equity to the income statement in the reporting period in which the hedged item is recognized in the income statement. The maturity of the hedging instrument is determined based on the effective date of the future transaction.

When **fair value hedges** are used, the asset or liability is hedged against the risk of a change in fair value. Here, changes in the market value of the derivative financial instruments are recognized in the income statement. Furthermore, the carrying amount of the underlying transaction is adjusted by the profit or loss resulting from the hedged risk, offsetting the effect in the income statement.

Other comprehensive income

The income and expenses shown in other comprehensive income are divided into two categories. Items that will be recognized in the income statement in the future (known as “recycling”) and items that will not be reclassified to the income statement in the future. The first category includes translation adjustments, the measurement of securities at fair value, and changes in the fair value of derivatives held to hedge future cash flows and net investments in a foreign operation. Items in other comprehensive income that will not be reclassified to the income statement at a future date include effects from the remeasurement of defined benefit plans.

Debt

Provisions for pensions and similar obligations: Provisions for pensions are based on actuarial computations made according to the projected unit credit method, which applies for valuation parameters that include: future developments in compensation, pensions and inflation, employee turnover and the life expectancy of beneficiaries. The resulting obligations are discounted on the balance sheet date using the market yields on high-quality corporate fixed-rate bonds with a minimum of one AA rating.

Similar obligations, especially those arising from commitments by North American Group companies to pay the healthcare costs and life insurance premiums of retired staff and their dependents, are reported under provisions for similar obligations.

The calculation of pension provisions is based on actuarial reports.

Actuarial gains and losses from changed estimations with regard to the actuarial assumptions used for calculating defined benefit obligations, the difference between standardized and actual returns on plan assets as well as the effects of the asset ceiling are recognized directly in equity as other comprehensive income.

For more information on provisions for pensions and similar obligations, see Note 22 from page 198 onward

Other provisions: Other provisions are recognized when there is a present obligation as a result of a past event and when there is a probable outflow of resources whose amount can be reliably estimated. Provisions are recognized at the probable settlement value.

Provisions for German trade income tax, German corporate income tax and similar income taxes are determined and recognized in the amount necessary to meet the expected payment obligations less any prepayments that have been made. Other taxes to be assessed are considered accordingly.

Provisions are established for certain environmental protection measures and risks if there exist present legal or constructive obligations arising from a past event, and the expected cash outflow can be estimated with sufficient reliability. Provisions for restoration obligations primarily concern the filling of wells and the removal of production facilities upon the termination of production in the Oil & Gas segment. When the obligation arises, the provision is measured at the present value of the future restoration costs. An asset is capitalized for the same amount as part of the carrying amount of the plant concerned and is depreciated along with the plant. The discount on the provision is unwound annually until the time of the planned restoration.

In addition, other provisions also cover expected costs for rehabilitating contaminated sites, recultivating landfills, removal of environmental contamination from existing production or storage sites and similar measures. If BASF is the only responsible party that can be identified, the provision covers the entire expected claim. At sites operated together with one or more partners, the provision generally covers only BASF's share of the expected claim. The determination of the amount of the provision is based on the available technical information on the site, the technology used, legal regulations, and official obligations.

Provisions are recognized for expected severance payments or similar personnel expenses as well as for demolition expenses and other charges related to restructuring measures that have been planned and publicly announced by management.

Provisions for long-service and anniversary bonuses are predominantly calculated based on actuarial principles. For contracts signed under the early retirement programs, approved supplemental payments are accrued in installments until the end of the exemption phase at the latest. Accounting and measurement follow the German Accounting Standards Committee e.V.'s Application Note 1 (IFRS) of December 2012.

Other provisions also cover risks resulting from legal disputes and proceedings, provided the criteria for recognizing a provision are fulfilled. In order to determine the amount of the provisions, the Company takes into consideration the facts related to each case, the size of the claim, claims awarded in similar cases and independent expert advice as well as assumptions regarding the probability of a successful claim and the range of possible claims. The actual costs can deviate from these estimates.

For more information, see Note 26 on page 207

The probable amount required to settle noncurrent provisions is discounted if the effect of discounting is material. In this case, the provision is recognized at present value. Assumptions must be made in determining the discount rate used for calculating noncurrent provisions. Financing costs related to unwinding the discount on provisions in subsequent periods are shown in other financial result.

Other accounting policies

Business combinations: In business combinations, the acquired assets and liabilities are recognized at fair value on the date the acquirer effectively obtains control. The fair value of acquired assets and assumed liabilities at the date of exchange, as well as the useful lives of the acquired assets, are determined on the basis of assumptions. The measurement is largely based on projected cash flows. The actual cash flows can differ significantly from the cash flows used to determine the fair values. Independent external appraisals are used for the purchase price allocation of business combinations. Valuations in the course of business combinations are based on existing information as of the acquisition date.

Oil and gas production: Exploration and development expenditures are accounted for using the successful efforts method. Under this method, costs of successful exploratory drilling as well as successful and dry development wells are capitalized.

An exploration well is a well located outside of an area with proven oil and gas reserves. A development well is a well which is drilled to the depth of a reservoir of oil or gas within an area with proven reserves.

Exploratory drilling is generally reported under construction in progress until its success can be determined. When the presence of hydrocarbons is proven such that the economic development of the field is probable, the costs remain capitalized as suspended well costs. At least once a year, all suspended wells are assessed from an economic, technical and strategic viewpoint to see if development is still intended. If this is not the case, the capitalized costs for the well in question are impaired. When reserves are proven, the exploration wells are reclassified as machinery and technical equipment when production begins.

Production costs include all costs incurred to operate, repair and maintain the wells as well as the associated plant and ancillary production equipment, including the associated depreciation.

The unit of production method is used to depreciate assets from oil and gas production at the field or reservoir level. Depreciation is generally calculated on the basis of the production of the period in relation to the proven, developed reserves.

Exploration expenses pertain exclusively to the Oil & Gas segment and include all costs related to areas with unproven oil or gas deposits. These include costs for the exploration of areas with possible oil or gas deposits, among others. Costs for geological and geophysical investigations are always reported under exploration expenses. In addition, this item includes valuation allowances for capitalized expenses for exploration wells which did not encounter proven reserves. Depreciation of successful exploratory drilling is reported under cost of sales.

An Exploration and Production Sharing Agreement is a type of contract in crude oil and gas concessions whereby the expenses and profits from the exploration, development and production phases are divided between the state and one or more exploration and production companies using defined keys. The revenue BASF is entitled to under such contracts is reported as sales.

The intangible asset from the marketing contract for natural gas from the Yuzhno Russkoye natural gas field is amortized based on BASF's share of the produced and distributed volumes.

Intangible assets in the Oil & Gas segment relate primarily to exploration and production rights. During the exploration phase, these are not subject to amortization but are tested for impairment annually. When economic success is determined, the rights are amortized in accordance with the unit of production method.

Use of estimates and assumptions in preparing the Consolidated Financial Statements

The carrying amount of assets, liabilities and provisions, contingent liabilities and other financial obligations in the Consolidated Financial Statements depends on the use of estimates, assumptions and use of discretionary scope. Specific estimates or assumptions used in individual accounting or valuation methods are disclosed in their respective sections. They are based on the circumstances and estimates on the balance sheet date and affect the reported amounts of income and expenses during the reporting periods. These assumptions particularly concern discounted cash flows in the context of impairment tests and purchase price allocations; the determination of useful lives of property, plant and equipment and intangible assets; the carrying amount of investments; and the measurement of provisions for such things as employee benefits, warranties, trade discounts, environmental protection and taxes. Although uncertainty is appropriately incorporated in the valuation factors, actual results can differ from these estimates.

The assumptions for oil and gas prices concern internal company projections. The projections are based on an empirical analysis of the global oil and gas supply and demand. Short-term estimates up to three years consider the current prices on active markets or forward transactions. In long-term estimates, assumptions are made regarding factors such as inflation, production quantities and costs as well as energy efficiency and the substitution of energy sources. Using external sources and reports, the oil and gas price estimates are regularly checked for plausibility.

Impairment tests on assets are carried out whenever certain triggering events indicate that an impairment may be necessary. External triggering events include, for example, changes in customer industries, technologies used and economic downturns. Internal triggering events for an impairment test include lower product profitability, planned restructuring measures or physical damage to assets.

Impairment tests are based on a comparison of the carrying amount and the recoverable amount. The recoverable amount is the higher of fair value less costs to sell and the value in use. As a rule, value in use is determined using the discounted cash flow method. The estimation of cash flows and the assumptions used consider all information available on the respective balance sheet date on the future development of the operating business. Actual future developments may vary. Impairment testing relies upon the cash-generating unit's long-term earnings forecasts, which are based on economic trends. The weighted average cost of capital (WACC) based on the Capital Asset Pricing Model plays an important role in impairment testing. It comprises a risk-free rate, the market risk premium and the spread for the credit risk. Additional important assumptions are the forecasts for the detailed planning period and the terminal growth rates used.

For more information, see Note 14 from page 189 onward

An impairment is recognized if the recoverable amount of the asset is lower than the carrying amount. The impairment of the asset (excluding goodwill) is made in the amount of the difference between these amounts.

The goodwill impairment test is based on cash-generating units. At BASF, the cash-generating units are predominantly the business units, or in certain cases, the divisions. If there is a need for a valuation allowance, the existing goodwill is, if necessary, completely written off as a first step. If there is further need for a valuation allowance, this is allocated to the remaining assets of the cash-generating unit. Goodwill impairments are reported under other operating expenses. Impairment reversals are not conducted for goodwill.

2 Scope of consolidation

2.1 Changes in scope of consolidation

In 2016, the scope of consolidation for the Consolidated Financial Statements encompassed 294 companies (2015: 258). Of this number, 46 companies were first-time consolidations (2015: five). Since the beginning of 2016, a total of ten companies (2015: 28) were deconsolidated due to divestiture, merger, liquidation or immateriality.

First-time consolidations in 2016 comprised:
– 33 companies in connection with the acquisition of Chemetall registered in all regions
– Two newly established companies with headquarters in the regions Asia-Pacific and North America
– 11 companies headquartered in all regions which had not been consolidated at the time of the first inclusion in the Consolidated Financial Statements. Thereof eight were newly established in 2016.

First-time consolidations in 2015 comprised:
– one newly acquired company headquartered in Japan
– four companies which had previously not been consolidated, headquartered in Germany, China, India and Pakistan

While BASF does not hold majority shares in ZAO Gazprom YRGM Trading, BASF is entitled to the earnings of the company due to profit distribution arrangements, so that the company is fully consolidated in the Group Consolidated Financial Statements.

A list of companies included in the Consolidated Financial Statements and a list of all companies in which BASF SE has a shareholding as required by Section 313(2) of the German Commercial Code is provided in the List of Shares Held.

For more information, see Note 3 on page 178
For more information, see basf.com/en/governance

Scope of consolidation

	Europe	Thereof Germany	North America	Asia Pacific	South America, Africa, Middle East	2016	2015
As of January 1	**141**	**55**	**37**	**57**	**23**	**258**	**281**
Thereof proportionally consolidated	6	–	–	1	–	7	7
First-time consolidations	21	4	5	16	4	46	5
Thereof proportionally consolidated	–	–	–	1	–	1	–
Deconsolidations	8	2	–	2	–	10	28
Thereof proportionally consolidated	–	–	–	–	–	–	–
As of December 31	**154**	**57**	**42**	**71**	**27**	**294**	**258**
Thereof proportionally consolidated	6	–	–	2	–	8	7

Overview of impact of changes to the scope of consolidation (excluding acquisitions and divestitures)[1]

	2016		2015	
	Million €	%	Million €	%
Sales	**.**	**0.0**	**48**	**0.1**
Noncurrent assets	5	0.0	29	0.1
Thereof property, plant and equipment	1	0.0	15	0.1
Current assets	(3)	0.0	41	0.2
Thereof cash and cash equivalents	1	0.1	4	0.2
Assets	**2**	**0.0**	**70**	**0.1**
Equity	(2)	0.0	(7)	0.0
Noncurrent liabilities	.	0.0	(3)	0.0
Thereof financial indebtedness	–	–	–	–
Current liabilities	4	0.0	80	0.6
Thereof financial indebtedness	2	0.1	9	0.2
Total equity and liabilities	**2**	**0.0**	**70**	**0.1**
Other financial obligations	–	–	41	0.1

[1] The amounts from the deconsolidation of Wintershall Noordzee B.V. in connection with the asset swap with Gazprom are not shown in this table, but included in the table of assets and liabilities transferred as a result of the asset swap with Gazprom in Note 2.4 on page 177.

2.2 Joint operations

Proportionally consolidated joint operations particularly comprise:

– Ellba C.V., Rotterdam, Netherlands, which is operated jointly with Shell and produces propylene oxide and styrene monomer
– AO Achimgaz, Novy Urengoy, Russia, which is jointly operated with Gazprom for the production of natural gas and condensate
– BASF DOW HPPO Production B.V.B.A., Antwerp, Belgium, which is operated jointly with The Dow Chemical Company to produce propylene oxide

BASF holds a 50% share in each of these companies and controls them jointly with the respective partner. The companies sell their products directly to the partners. The partners ensure the ongoing financing of the companies by purchasing the production. They were therefore classified as joint operations in accordance with IFRS 11.

2.3 Joint ventures and associated companies

The only material joint venture accounted for using the equity method is BASF-YPC Company Ltd., Nanjing, China, which operates the Verbund site in Nanjing together with Sinopec. BASF's stake comprises 50%.

Financial information on BASF-YPC Company Ltd., Nanjing, China (Million €)

	2016	2015
Balance sheet		
Noncurrent assets	1,515	1,779
Current assets	842	741
Thereof marketable securities, cash and cash equivalents	190	69
Assets	**2,357**	**2,520**
Equity	1,760	1,533
Noncurrent liabilities	204	441
Thereof financial indebtedness	190	372
Current liabilities	393	546
Thereof financial indebtedness	107	270
Total equity and liabilities	**2,357**	**2,520**
Statement of income		
Sales	2,358	2,212
Depreciation, amortization and impairments	214	282
Interest income	3	4
Interest expenses	23	34
Income taxes	110	22
Net income	332	64
Carrying amount according to the equity method as of the beginning of the year	**768**	**757**
Proportional net income	166	32
Proportional change of other comprehensive income	(26)	52
Total comprehensive income	**140**	**84**
Capital measures/dividends/changes in the scope of consolidation/other adjustments	(27)	(73)
Other adjustments of income and expenses	–	–
Carrying amount according to the equity method as of the end of the year	**881**	**768**

Non-material joint ventures accounted for using the equity method particularly comprise:

– Wintershall Noordzee B.V., Rijswijk, Netherlands, which is operated jointly with Gazprom (BASF stake: 50%)
– N.E. Chemcat Corporation, Tokyo, Japan, which is operated jointly with Sumitomo Metal Mining Co. Ltd. (BASF stake: 50%)
– Heesung Catalysts Corporation, Seoul, South Korea, which is operated jointly with Heesung (BASF stake: 50 %)

Non-material joint ventures accounted for using the equity method (BASF stake) (million €)

	2016	2015
Carrying amount accounted for using the equity method as of the beginning of the year	**825**	**506**
Proportional net income	(9)	(7)
Proportional change of other comprehensive income	19	28
Total comprehensive income	**10**	**21**
Capital measures/dividends/changes in the scope of consolidation/other adjustments	(8)	333
Other adjustments of income and expense	(4)	(35)
Carrying amount accounted for using the equity method as of the end of the year	**823**	**825**

Material associated companies accounted for using the equity method particularly comprise:

– Joint Stock Company Achim Trading, Moscow, Russia (BASF stake: 18.01%, economic share: 25.01%), which together with Gazprom, will market the output from blocks IV and V of the Achimov formation. The investment value in the amount of €768 million remained unchanged in comparison with the previous year and arose from the fair value measurement as a result of the asset swap with Gazprom on September 30, 2015. The company's economic activities will commence in 2018 with the scheduled start of production in blocks IV and V. Therefore, there is no relevant financial information to report according to IFRS 12 in 2016
– GASCADE Gastransport GmbH, Kassel, Germany (BASF stake: 49.97%, voting rights: 50.02%)

Financial information on GASCADE Gastransport GmbH, Kassel, Germany (million €)

	2016	2015
Balance sheet		
Noncurrent assets	670	750
Current assets	39	62
Thereof marketable securities, cash and cash equivalents	15	4
Assets	**709**	**812**
Equity	370	398
Noncurrent liabilities	292	400
Thereof financial indebtedness	–	–
Current liabilities	47	14
Thereof financial indebtedness	–	–
Total equity and liabilities	**709**	**812**
Statement of income		
Sales	368	442
Depreciation, amortization and impairments	126	131
Interest income	–	–
Interest expenses	2	5
Income taxes	20	17
Net income	101	92
Carrying amount according to the equity method as of the beginning of the year	**641**	**639**
Proportional net income	51	46
Proportional change of other comprehensive income	–	–
Total comprehensive income	**51**	**46**
Capital measures/dividends/changes in the scope of consolidation/other adjustments	(64)	(44)
Other adjustments of income and expense	(7)	–
Carrying amount according to the equity method as of the end of the year	**621**	**641**

Non-material accounted for using the equity method associated companies particularly comprise:

– OAO Severneftegazprom, Krasnoselkup, Russia (BASF stake: 25%, economic share: 35%)
– Nord Stream AG, Zug, Switzerland, was classified as an associated company even though BASF only has a 15.5% share, as it exercises significant influence over the company due to the fact that its approval is required for relevant board resolutions
– NEL Gastransport GmbH, Kassel, Germany (BASF stake: 49.97%, voting rights: 50.02%)
– Wintershall AG, Kassel, Germany, which operates Libyan exploration and production activities together with Gazprom Libyen Verwaltungs GmbH (BASF stake: 51%). Despite an investment of 51%, BASF does not exercise control according to IFRS 10, as contractual arrangements with the Libyan government strictly limit influence on variable returns after income taxes

Non-material associated companies accounted for using the equity method (BASF stake) (million €)

	2016	2015
Carrying amount according to the equity method as of the beginning of the year	**1,434**	**1,343**
Proportional net income	109	204
Proportional change of other comprehensive income	100	(21)
Total comprehensive income	**209**	**183**
Capital measures/dividends/changes in the scope of consolidation/other adjustments	(90)	(103)
Other adjustments of income and expense	1	11
Carrying amount according to the equity method as of the end of the year	**1,554**	**1,434**

Due to the corporate governance structure of NEL Gastransport GmbH and GASCADE Gastransport GmbH – both based in Kassel, Germany – in connection with requirements of Section 10 of the Energy Management Act (EnWG), BASF only exercises significant influence over both companies, despite voting rights of over 50%.

2.4 Acquisitions and divestitures

Acquisitions

In 2016, BASF acquired the following activities:

– On September 26, 2016, BASF concluded the acquisition of Guangdong Yinfan Chemistry (“Yinfan”), Jiangmen, China, and integrated the activities in the Coatings division. This acquisition enabled BASF to add the Yinfan product range to its portfolio of automotive refinish coatings in Asia Pacific and gain access to a state-of-the-art production plant for automotive refinish coatings in China
– On December 14, 2016, BASF concluded the acquisition of the global surface treatment provider Chemetall from Albemarle Corporation, Charlotte, North Carolina. The acquisition supplements the Coating division’s portfolio in the area of customized technology and system solutions for the treatment of surfaces. The purchase price, subject to usual adjustments to the net financial debt and net working capital, amounted to $3.1 billion

The preliminary fair values of the assets and liabilities of Chemetall as of December 14, 2016, were as follows:

Preliminary purchase price allocation of the assets and liabilities of Chemetall as of December, 14, 2016
(Million €)

	Fair value at time of acquisition
Goodwill	1,545
Other intangible assets	1,223
Property, plant and equipment	139
Investments accounted for using the equity method	36
Other financial assets	9
Deferred taxes	5
Other receivables and miscellaneous assets	15
Noncurrent assets	**2,972**
Inventories	79
Accounts receivable, trade	156
Other receivables and miscellaneous assets	41
Marketable securities	–
Cash and cash equivalents	81
Current assets	**357**
Total assets	**3,329**
Provisions for pensions and similar obligations	88
Other provisions	26
Deferred taxes	229
Financial indebtedness	–
Other liabilities	13
Noncurrent liabilities	**356**
Accounts payable, trade	73
Provisions	23
Tax liabilities	11
Financial indebtedness	–
Other liabilities	30
Current liabilities	**137**
Liabilities	**493**
Total purchase price[1]	**2,836**

[1] To cover foreign currency risk, a part of the purchase price denominated in U.S. dollars was hedged.

For more information, see Note 27 from page 208 onward

Goodwill in the amount of €1,545 million resulted primarily from sales synergies, arising from the expansion of the portfolio as well as cost synergies to a minor extent. Chemetall contributed €32 million to sales in the fiscal year 2016 and minus €5 million to net income. With the consolidation of Chemetall in the Consolidated Financial Statements of BASF as of January 1, 2016, sales would have amounted to €768 million and net income €77 million. These proforma results are for comparison purposes and do not necessarily represent the results had the transaction taken place on January 1, 2016, and are not indicative of future developments and results.

The purchase prices for businesses acquired in 2016 totaled €2,872 million; as of December, 31, 2016, payments made for these amounted to €2,849 million. The purchase price allocations were based on valuations in accordance with IFRS 3. The resulting goodwill amounted to €1,552 million. The purchase price allocations consider all the facts and circumstances prevailing as of the respective dates of acquisition which were known prior to the preparation of the Consolidated Financial Statements. In accordance with IFRS 3, should further facts and circumstances become known within the 12-month measurement period, the purchase price allocation will be adjusted accordingly.

In 2015, BASF acquired the following activities:

- On February 12, 2015, BASF concluded the acquisition, announced on December 8, 2014, of the business from Taiwan Sheen Soon Co., Ltd. (TWSS), Lukang Town, Taiwan. TWSS is a leading manufacturer of precursors for adhesives based on thermoplastic polyurethanes (TPU). Following receipt of the official approval, BASF also took over TWSS's activities on the Chinese mainland, effective December 1, 2015. The takeover consolidated BASF's market position in the areas of TPU extrusion and injection molding for various industries. BASF can now offer its customers complete solutions for TPUs and TPU adhesives. At BASF, the activities have been integrated in the Performance Materials division
- On February 18, 2015, BASF took over technologies, patents and know-how for silver nanowires from Seashell Technology LLC, based in San Diego, California. Through this acquisition, BASF has extended its product portfolio for displays in the Electronic Materials business unit, which is part of the Monomers division
- On February 24, 2015, BASF acquired a 66% share from TODA KOGYO CORP., based in Hiroshima, Japan, in a company to which TODA had contributed its business with cathode materials for lithium-ion batteries, patents and production capacities in Japan. The transaction had been announced on October 30, 2014. The company focuses on the research, development, production, marketing and sales of a number of cathode materials. At BASF, the activities were assigned to the Catalysts division
- On March 31, 2015, BASF concluded the acquisition of the polyurethane (PU) business from Polioles, S.A. de C.V., based in Lerma, Mexico, that was announced on July 10, 2014. Polioles is a joint venture with the Alpek Group. BASF holds a 50% share, which is accounted for using the equity method. The acquisition comprised marketing and selling rights, current assets, and to a minor extent, production facilities. The business has been assigned to the Performance Materials division
- On April 23, 2015, BASF concluded an agreement with Lanxess Aktiengesellschaft, based in Cologne, Germany, on the acquisition and use of technologies and patents for the production of high-molecular-weight polyisobutene (HM PIB). The transaction furthermore included the acquisition of selling rights and current assets as well as a manufacturing agreement in which Lanxess will produce HM PIB exclusively for BASF. The activities were allocated to the Performance Chemicals division

The following overview shows the effects of the acquisitions conducted in 2016 and 2015 on the Consolidated Financial Statements. If acquisitions resulted in the transfer of assets or the assumption of additional liabilities, these are shown as a net impact.

Effects of acquisitions and changes in the preliminary purchase price allocations

	2016		2015	
	Million €	%	Million €	%
Goodwill	1,552	15.4	26	0.3
Other intangible assets	1,237	24.3	62	1.5
Property, plant and equipment	155	0.6	72	0.3
Financial assets	45	0.9	–	–
Other noncurrent assets	20	0.5	9	0.5
Noncurrent assets	**3,009**	**6.0**	**169**	**0.4**
Current assets	**358**	**1.4**	**74**	**0.3**
Thereof cash and cash equivalents	81	5.9	–	–
Total assets	**3,367**	**4.4**	**243**	**0.3**
Equity	**–**	**–**	**42**	**0.1**
Noncurrent liabilities	**356**	**1.2**	**(40)**	**(0.2)**
Thereof financial indebtedness	–	–	–	–
Current liabilities	**162**	**1.1**	**95**	**0.7**
Thereof financial indebtedness	–	–	–	–
Total equity and liabilities	**518**	**0.7**	**97**	**0.1**
Payments made for acquisitions	**2,849**		**146**	

Divestitures

In 2016, BASF sold the following activities:

– On June 30, 2016, BASF concluded the sale of its global polyolefin catalysts business to W. R. Grace & Co., Columbia, Maryland. The transaction involved technologies, patents, brands and the transfer of production plants in Pasadena, Texas, and Tarragona, Spain. Around 170 employees transferred to Grace. These activities had been assigned to the Catalysts division

– On August 26, 2016, BASF sold its worldwide photoinitiator business to IGM Resins B.V., Waalwijk, Netherlands. The transaction included technologies, patents, brands, customer relations, business-related contracts, inventories, and a production site in Mortara, Italy. The sale affected 120 employees worldwide

– On December 14, 2016, BASF sold the Coatings division's industrial coatings business to the AkzoNobel Group. The transaction included technologies, patents and trademarks, customer relations, inventories as well as the transfer of two production sites in England and in South Africa. BASF generated around €300 million in sales in the industrial coatings business in 2015

In 2015, BASF divested the following activities:

– On March 31, 2015, BASF sold its white expandable polystyrene (EPS) business in North and South America to Alpek S.A.B. de C.V., based in Monterrey, Mexico. The sale comprised customer lists and current assets in addition to production facilities in Canada, Brazil, Argentina and the United States. The disposed activities had been part of BASF's Performance Materials division. The shares in Aislapol S.A., based in Santiago de Chile, Chile, were also sold. Polioles, a joint venture accounted for using the equity method, transferred its white EPS business to Alpek

– On June 30, 2015, BASF concluded the divestiture of its global textile chemicals business to Archroma Textiles S.à r.l., Luxembourg. The portfolio comprised products for pretreatment, printing and coating. The transaction furthermore involved the transfer of the subsidiary BASF Pakistan (Private) Ltd., based in Karachi, Pakistan, completed in the third quarter of 2015. The textile chemicals business had been part of the Performance Chemicals division

– Effective July 1, 2015, BASF sold its 25% share in SolVin to its partner, Solvay. SolVin was established in 1999 by Solvay and BASF for the production of polyvinylchloride (PVC). At BASF, the SolVin investment and the income associated with it had been allocated to the Monomers division

– On September 30, 2015, BASF concluded the agreed-upon sale of portions of its pharmaceutical ingredients and services business to Siegfried Holding AG, based in Zofingen, Switzerland. This involved the custom synthesis business and parts of the active pharmaceutical ingredients portfolio. The transaction comprised the divestiture of the production sites in Minden, Germany; Evionnaz, Switzerland; and Saint-Vulbas, France. At BASF, the activities had been allocated to the Nutrition & Health division
– On November 1, 2015, BASF divested its global paper hydrous kaolin business to Imerys Kaolin, Inc., Roswell, Georgia. The divestiture included the kaolin processing production site in Wilkinson County, Georgia. The activities at BASF had been allocated to the Performance Chemicals division

Asset swap with Gazprom

In its Oil & Gas segment, BASF concluded the swap of assets of equal value with Gazprom on September 30, 2015, with retroactive economic effect to April 1, 2013. As a result of the transaction, BASF received an economic share of 25.01% in blocks IV and V of the Achimov formation of the Urengoy natural gas and condensate field in western Siberia. According to the development plan originally confirmed by Russian authorities, blocks IV and V have total hydrocarbon resources of 274 billion cubic meters of natural gas and 74 million metric tons of condensate. Production is scheduled to start up in 2018.

In return, BASF transferred its shares in the previously jointly run natural gas trading and storage business to Gazprom. This included the 50.02% shares in the following: the natural gas trading company WINGAS GmbH, Kassel, Germany; the storage company astora GmbH & Co. KG, Kassel, Germany, which operates natural gas storage facilities in Rehden and Jemgum, Germany; and WINGAS Holding GmbH, Kassel, Germany, including its share in the natural gas storage facility in Haidach, Austria. BASF also transferred its 50% share in each of the natural gas trading companies Wintershall Erdgas Handelshaus GmbH & Co. KG, Berlin, Germany, and Wintershall Erdgas Handelshaus Zug AG, Zug, Switzerland. Gazprom furthermore became a 50% shareholder in Wintershall Noordzee B.V. in Rijswijk, Netherlands, which is active in the exploration and production of natural gas and crude oil deposits in the North Sea.

The following overview shows the individual components of BASF's profit realization from the asset swap with Gazprom and the transfer of Wintershall Noordzee B.V.: The final purchase price allocation resulted in an adjustment of the fair value of the shareholding in Wintershall Noordzee B.V. and the compensation payment, and reduced disposal gains by €17 million to €297 million.

Profit realization from asset swap with Gazprom and transfer of Wintershall Noordzee B.V.
(Million €)

	Dec. 31, 2016	Dec. 31, 2015
Fair value 25.01% Achimov IV/V	779	779
Fair value 50% Wintershall Noordzee B.V.	392	407
Disposed share of net assets	(808)	(808)
Expected compensation payment and other expenses	(66)	(64)
Income from swap and reclassification	**297**	**314**

The following overview shows the effects of the divestitures conducted in 2016 and 2015 in the Consolidated Financial Statements. The previous year includes the effects of the asset swap with Gazprom. The line item sales reflects the year-on-year decline resulting from divestitures. The impact on equity relates mainly to gains and losses from divestitures.

Effects of divestitures and the change in the preliminary purchase price allocation for the asset swap with Gazprom

	2016		2015	
	Million €	%	Million €	%
Sales	**(10,718)**	**(15.2)**	**(3,948)**	**(5.6)**
Noncurrent assets	**(234)**	**(0.5)**	**(408)**	**(0.9)**
Thereof property, plant and equipment	(97)	(0.4)	(1,276)	(5.1)
Current assets	**(64)**	**(0.3)**	**(2,199)**	**(9.0)**
Thereof cash and cash equivalents	–	–	(285)	(12.7)
Total assets	**(298)**	**(0.4)**	**(2,607)**	**(3.7)**
Equity	**467**	**1.4**	**185**	**0.6**
Noncurrent liabilities	**(63)**	**(0.2)**	**(942)**	**(3.8)**
Thereof financial indebtedness	–	–	–	–
Current liabilities	**(1)**	**.**	**(1,148)**	**(8.1)**
Thereof financial indebtedness	–	–	(1)	0.0
Total equity and liabilities	**403**	**0.5**	**(1,905)**	**(2.7)**
Payments received from divestitures	**701**		**702**	

3 BASF Group List of Shares Held in accordance with Section 313(2) of the German Commercial Code

The list of consolidated companies and the complete list of all companies in which BASF SE has a share as required by Section 313(2) of the German Commercial Code and information for exemption of subsidiaries from accounting and disclosure obligations are an integral component of the audited Consolidated Financial Statements submitted to the electronic Federal Gazette. The list of shares held is also published online.

For more information, see basf.com/en/governance

4 Reporting by segment and region

BASF's business is conducted by thirteen operating divisions aggregated into five segments for reporting purposes. The divisions are allocated to the segments based on their business models.

The Chemicals segment entails the classical chemicals business with basic chemicals and intermediates. It forms the core of BASF's Production Verbund and is the starting point for a majority of the value chains. In addition to supplying the chemical industry and numerous other sectors, Chemicals ensures that other BASF segments are supplied with chemicals for producing downstream products. The Chemicals segment comprises the Petrochemicals, Monomers and Intermediates divisions.

The Performance Products segment consists of the Dispersions & Pigments, Care Chemicals, Nutrition & Health and Performance Chemicals divisions. Customized products and solutions allow customers to make their production processes more efficient or to give their products improved application properties. As of January 1, 2017, the activities of the Monomers and Dispersions & Pigments divisions for the Electronic Industry will be merged in the global business unit Electronic Materials in the Dispersions & Pigments division within the Performance Products segment. BASF thereby strengthens its position as a strategic partner for the large electronic producers.

The Functional Materials & Solutions segment bundles system solutions, services and innovative products for specific sectors and customers, especially the automotive, electrical, chemical and construction industries, as well as applications for household, sports and leisure. It is made up of the Catalysts, Construction Chemicals, Coatings, and Performance Materials divisions.

The Agricultural Solutions segment includes the Crop Protection division. It provides innovative solutions in the areas of chemical and biological crop protection, seed treatment and water management as well as for nutrient supply and plant stress. Plant biotechnology research is not assigned to this segment; it is reported in Other.

The Oil & Gas segment comprises the division of the same name. As part of an asset swap at the end of the third quarter of 2015, BASF transferred to Gazprom the natural gas trading and storage business previously operated together with Gazprom. Since October 1, 2015, the segment has concentrated on the exploration and production of oil and gas-rich regions in Europe, North Africa, Russia, South America and the Middle East as well as on the transport of natural gas together with partner Gazprom.

Activities not assigned to a particular division are reported under Other. These include the sale of raw materials, engineering and other services, rental income and leases, the production of precursors not assigned to a particular segment, the steering of the BASF Group by corporate headquarters, and cross-divisional corporate research. Cross-divisional corporate research, which has been restructured in the context of the newly developed innovation approach, works on long-term topics of strategic importance to the BASF Group. Furthermore, it focuses on the development of specific key technologies, which are of central importance for the divisions. Plant biotechnology research is also part of cross-divisional corporate research.

Earnings from currency conversion that are not allocated to the segments are also reported under Other, as are earnings from the hedging of raw material prices and foreign currency exchange risks. Furthermore, income and expenses from the long-term incentive (LTI) program are shown here.

Transfers between the segments are generally executed at adjusted market-based prices which take into account the higher cost efficiency and lower risk of Group-internal transactions. Assets, as well as their depreciation and amortization, are allocated to the segments based on economic control. Assets used by more than one segment are allocated based on the percentage of usage.

Income from operations (EBIT) of Other (million €)

	2016	2015
Costs for cross-divisional corporate research	(395)	(402)
Costs of corporate headquarters	(222)	(233)
Other businesses	39	170
Foreign currency results, hedging and other measurement effects	(331)	(220)
Miscellaneous income and expenses	(182)	(300)
Income from operations of Other	**(1,091)**	**(985)**

Income from operations of Other decreased by €106 million year-on-year to minus €1,091 million. Income from **other businesses** fell by €131 million to €39 million. The line item **foreign currency results, hedging and other measurement effects** decreased by €111 million to minus €331 million. Higher additions to provisions in comparison with the previous year for the long-term incentive (LTI) program were partially compensated by lower currency losses. The **costs for cross-divisional corporate research** as well as **costs of corporate headquarters** decreased by €7 million and €11 million, respectively. The line item **miscellaneous income and expenses** amounted to minus €182 million compared with minus €300 million in the previous year, which included expenses for BASF's 150th anniversary celebrations among other things.

Assets of Other (million €)

	December 31, 2016	December 31, 2015
Assets of businesses included in Other	1,959	2,097
Financial assets	605	526
Deferred tax assets	2,513	1,791
Cash and cash equivalents/marketable securities	1,911	2,262
Defined benefit assets	66	133
Other receivables/prepaid expenses	2,320	2,823
Assets of Other	**9,374**	**9,632**

Reconciliation reporting Oil & Gas (million €)

	2016	2015
Income from operations	**499**	**1,072**
Net income from shareholdings	6	(6)
Other income	(74)	267
Income before taxes and minority interests	**431**	**1,333**
Income taxes	7	(168)
Income before minority interests	**438**	**1,165**
Minority interests	(76)	(115)
Net income	**362**	**1,050**

The reconciliation reporting Oil & Gas reconciles the income from operations in the Oil & Gas segment with the contribution of the segment to the net income of the BASF Group.

Income from operations in 2016 declined significantly in comparison with the previous year. This was essentially a result of lower oil and gas prices in the first three quarters of 2016 compared with the same period of the previous year as well as the asset swap with Gazprom on September 30, 2015. This resulted in a lack of earnings contributions from the divested gas trading and storage business and the 50% share in Wintershall Noordzee B.V., Rijswijk, Netherlands, beginning in the fourth quarter of 2015. Furthermore, the transaction led to earnings of €314 million in the previous year. The share in the Yuzhno Russkoye natural gas field contributed lower income from operations, as the excess amounts received over the last ten years were compensated in 2016, as contractually agreed with our partner, Gazprom.

Impairments for exploration and production licenses in the Oil & Gas segment dampened income from operations by €609 million in 2015.

The Oil & Gas segment's **other income** relates to income and expenses not included in the segment's income from operations, interest result and other financial result. As in the previous year, other income largely consisted of currency effects from Group loans.

Positive income taxes in 2016 were primarily a result of the calculation of taxable income in Norway.

Segments 2016 (million €)

	Chemicals	Performance Products	Functional Materials & Solutions	Agricultural Solutions	Oil & Gas	Other	BASF Group
Sales	13,461	15,002	18,732	5,569	2,768	2,018	57,550
Intersegmental transfers	4,836	465	736	33	331	1	6,402
Sales including intersegmental transfers	18,297	15,467	19,468	5,602	3,099	2,019	63,952
Income from operations	1,983	1,648	2,199	1,037	499	(1,091)	6,275
Assets	13,486	14,549	17,359	8,899	12,829	9,374	76,496
Thereof goodwill	62	2,227	3,909	2,093	1,712	70	10,073
other intangible assets	144	1,219	2,305	263	1,121	37	5,089
property, plant and equipment	8,111	5,183	4,065	1,543	6,678	833	26,413
investments accounted for using the equity method	1,027	193	423	–	2,581	423	4,647
Debt	4,720	5,652	4,328	1,853	2,190	25,185	43,928
Research and development expenses	182	362	393	489	39	398	1,863
Additions to property, plant and equipment and intangible assets	1,213	864	3,679	266	1,115	121	7,258
Amortization of intangible assets and depreciation of property, plant and equipment	1,186	874	707	268	1,097	119	4,251
Thereof impairments	86	26	152	31	4	16	315

Segments 2015 (million €)

	Chemicals	Performance Products	Functional Materials & Solutions	Agricultural Solutions	Oil & Gas	Other	BASF Group
Sales	14,670	15,648	18,523	5,820	12,998	2,790	70,449
Intersegmental transfers	5,300	463	873	28	766	(3)	7,427
Sales including intersegmental transfers	19,970	16,111	19,396	5,848	13,764	2,787	77,876
Income from operations	2,131	1,340	1,607	1,083	1,072	(985)	6,248
Assets	12,823	14,232	13,341	8,435	12,373	9,632	70,836
Thereof goodwill	58	2,201	2,326	2,048	1,660	70	8,363
other intangible assets	155	1,428	1,181	342	1,030	38	4,174
property, plant and equipment	7,933	4,958	3,645	1,488	6,421	815	25,260
investments accounted for using the equity method	840	195	387	–	2,589	425	4,436
Debt	3,550	4,639	3,511	1,628	2,214	23,749	39,291
Research and development expenses	207	383	392	514	50	407	1,953
Additions to property, plant and equipment and intangible assets	1,859	964	854	402	1,823	111	6,013
Amortization of intangible assets and depreciation of property, plant and equipment	959	949	621	238	1,515	119	4,401
Thereof impairments	24	86	67	10	500	3	690

Regions 2016 (million €)

	Europe	Thereof Germany	North America	Asia Pacific	South America, Africa, Middle East	BASF Group
Location of customers						
Sales	26,039	7,412	14,042	12,165	5,304	57,550
Share %	45.3	12.9	24.4	21.1	9.2	100.0
Location of companies						
Sales	27,221	17,540	14,682	11,512	4,135	57,550
Sales including interregional transfers[1]	34,234	23,241	17,060	12,269	4,361	67,924
Income from operations	3,632	1,582	1,113	1,098	432	6,275
Assets	40,086	21,120	17,714	12,869	5,827	76,496
Thereof intangible assets	7,925	3,249	5,048	1,661	528	15,162
property, plant and equipment	13,990	6,915	6,055	4,421	1,947	26,413
investments accounted for using the equity method	3,052	1,120	119	1,476	–	4,647
Additions to property, plant and equipment and intangible assets	4,114	2,912	1,424	1,437	283	7,258
Amortization of intangible assets and depreciation of property, plant and equipment	2,526	1,224	1,018	463	244	4,251

Regions 2015 (million €)

	Europe	Thereof Germany	North America	Asia Pacific	South America, Africa, Middle East	BASF Group
Location of customers						
Sales	36,897	13,483	15,390	12,334	5,828	70,449
Share %	52.4	19.1	21.8	17.5	8.3	100.0
Location of companies						
Sales	38,675	28,229	15,665	11,712	4,397	70,449
Sales including interregional transfers[1]	46,056	34,297	18,311	12,384	4,623	81,374
Income from operations	4,174	2,303	1,295	445	334	6,248
Assets	38,993	20,307	15,968	11,002	4,873	70,836
Thereof intangible assets	6,845	2,467	4,406	839	447	12,537
property, plant and equipment	13,877	6,942	5,613	4,053	1,717	25,260
investments accounted for using the equity method	3,009	1,182	113	1,314	–	4,436
Additions to property, plant and equipment and intangible assets	3,162	1,446	1,263	986	602	6,013
Amortization of intangible assets and depreciation of property, plant and equipment	2,889	1,081	911	422	179	4,401

[1] The sum of sales including interregional transfers for all the regions can differ from the sum of sales including intersegmental transfers for all the segments, as the segments are viewed globally, and therefore shipments and services between regions within the same segment are not classified as transfers.

In the United States, sales to third parties in 2016 amounted to €12,831 million (2015: €13,831 million) according to location of companies and €11,985 million (2015: €13,302 million) according to location of customers. In the United States, intangible assets, property, plant and equipment, and investments accounted for using the equity method amounted to €10,342 million compared with €9,262 million in the previous year.

Notes on statement of income

5 Earnings per share

Earnings per share

		2016	2015
Net income	million €	4,056	3,987
Weighted-average number of outstanding shares	1,000	918,479	918,479
Earnings per share	**€**	**4.42**	**4.34**
Diluted earnings per share	€	4.41	4.33

In accordance with IAS 33, a potential dilutive effect must be considered in the diluted earnings per share for those BASF shares which will be granted in the future as a part of the BASF share program "*plus*." This applies regardless of the fact that the necessary shares are acquired by third parties on the market on behalf of BASF, and the fact that there are no plans for the issuance of new shares. The dilutive effect of the issue of "*plus*" shares amounted to €0.01 in 2016 (2015: €0.01).

6 Functional costs

Under the cost-of-sales method, functional costs incurred by the operating functions are determined on the basis of cost center accounting. The functional costs particularly contain the personnel costs, depreciation and amortization accumulated on the underlying final cost centers as well as allocated costs within the cost accounting cycle. Operating expenses that cannot be allocated to the functional costs are reported as other operating expenses.

For more on other operating expenses, see Note 8 from page 183 onward

Cost of sales

Cost of sales includes all production and purchase costs of the company's own products as well as merchandise which has been sold in the period, particularly plant, energy and personnel costs.

Selling expenses

Selling expenses particularly include marketing and advertising costs, freight costs, packaging costs, distribution management costs, commissions, and licensing costs.

General and administrative expenses

General and administrative expenses primarily include the costs of the central units, the costs of managing business units and divisions, and costs of general management, the Board of Executive Directors and the Supervisory Board.

Research and development expenses

Research and development expenses include the costs resulting from research projects as well as the necessary license fees for research activities.

For more on research and development expenses by segment, see Note 4 on page 180

7 Other operating income

Million €	2016	2015
Income from the adjustment and reversal of provisions recognized in other operating expenses	80	118
Revenue from miscellaneous revenue-generating activities	191	179
Income from foreign currency and hedging transactions	32	305
Income from the translation of financial statements in foreign currencies	57	101
Gains on divestitures and the disposal of fixed assets	667	525
Income on the reversal of valuation allowances for business-related receivables	35	41
Other	718	735
Other operating income	**1,780**	**2,004**

Income from the adjustment and reversal of provisions that had been recognized in other operating expenses was largely related to closures and restructuring measures, employee obligations, risks from lawsuits and damage claims, and various other items as part of the normal course of business. Provisions were reversed or adjusted if the circumstances on the balance sheet date were such that utilization was no longer expected, or expected to a lesser extent.

For more information, see Note 8 from page 183 onward

Revenue from miscellaneous revenue-generating activities primarily included income from rentals, catering operations, cultural events and logistics services.

Income from foreign currency and hedging transactions pertained to the foreign currency translation of receivables and payables as well as of currency derivatives and other hedging transactions. The decline compared with the previous year was attributable to the cessation of crude oil swaps to hedge price risks from gas purchase and sales contracts due to the completion of the asset swap with Gazprom.

Income from the translation of financial statements in foreign currencies contained gains from the translation of companies whose local currency is different from the functional currency.

Gains on divestitures and the disposal of fixed assets in the amount of €349 million resulted from the sale of the industrial coatings business to AkzoNobel, Amsterdam, Netherlands. Income of €93 million arose from the sale of the global polyolefin catalysts business to W.R. Grace & Co., Columbia, Maryland. Further income of €83 million resulted from the disposal of BASF's OLED intellectual property assets to UDC Ireland Limited, Dublin, Ireland. Income of €72 million pertained to real estate divestitures in several countries. The previous year had particularly contained income in the amount of €314 million from the asset swap with Gazprom. In addition, the sale of the global textile chemicals business to Archroma Textiles S.à r.l., Luxembourg, resulted in income of €71 million. Additional income of €39 million was attributable to the sale of the white expandable polystyrene (EPS) business to Alpek S.A.B. de C.V., Monterrey, Mexico. Furthermore, income in the

amount of €37 million arose from the sale of buildings in China and India as well as income in the amount of €29 million from the sale of the custom synthesis business and parts of the active pharmaceutical ingredients portfolio to Siegfried Holding AG, Zofingen, Switzerland.

Income from the reversal of valuation allowances for business-related receivables resulted mainly from the settlement of customer-related receivables for which a valuation allowance had been recorded.

Income under **Other** included government grants and government assistance from several countries amounting to €156 million in 2016 and €135 million in 2015. In both years, these were primarily attributable to price compensation from the Argentinian government for gas producers, which was introduced in connection with the New Gas Price Scheme (NGPS) in response to the lower, partly locally regulated gas prices.

Further income resulted from refunds and compensation payments in the amount of €291 million in 2016 and €254 million in 2015. These were predominantly due in both years to insurance refunds arising from a plant outage at the Ellba C.V. joint operation in Moerdijk, Netherlands. The previous year had also included income from a one-off payment for a price revision relating to 2014 in the Oil & Gas segment as well as a one-off payment from Tellus Petroleum AS, Oslo, Norway, in connection with the intended sale of selected assets on the Norwegian continental shelf, which was not completed.

Moreover, income in both years was related to gains from precious metal trading, the reversal of impairments on property, plant and equipment, tax refunds, income from the adjustment of pension plans, and a number of additional items.

8 Other operating expenses

Million €	2016	2015
Restructuring measures	482	306
Environmental protection and safety measures, costs of demolition and removal, and planning expenses related to capital expenditures that are not subject to mandatory capitalization	464	457
Amortization, depreciation and impairments of intangible assets and property, plant and equipment	337	675
Costs from miscellaneous revenue-generating activities	179	179
Expenses from foreign-currency and hedging transactions as well as from the measurement of LTI options	530	639
Losses from the translation of financial statements in foreign currencies	17	92
Losses from the disposal of fixed assets and divestitures	43	40
Oil and gas exploration expenses	94	195
Expenses from the addition of valuation allowances for business-related receivables	106	81
Expenses from the consumption of inventories measured at market value and the derecognition of obsolete inventory	277	259
Other	604	717
Other operating expenses	**3,133**	**3,640**

Expenses for **restructuring measures** were primarily related to severance payments amounting to €190 million in 2016 and €69 million in 2015. Further expenses for restructuring measures arose in the Petrochemicals division at several sites in the United States; these amounted to €37 million in 2016 and €15 million in 2015. In the Dispersions & Pigments division, expenses of €25 million in 2016 and €16 million in 2015 concerned several sites worldwide. In addition, expenses of €39 million in 2016 and €15 million in 2015 were incurred for the outsourcing of the computer centers as well as for a regional restructuring project in South America.

Expenses arose from **environmental protection and safety measures, demolition and removal, and planning expenses related to capital expenditures** insofar as these are not subject to mandatory capitalization according to IFRS. Expenses for demolition, removal and project planning totaled €375 million in 2016 and €376 million in 2015. These especially pertained to the Ludwigshafen site in both years. Further expenses of €61 million in 2016 and €37 million in 2015 arose from the addition to environmental provisions. In both years, these concerned several discontinued sites in North America. In 2016, expenses were also incurred for landfills in Germany. Moreover, the previous year had contained expenses for several discontinued sites in Switzerland.

Amortization, depreciation and impairments of intangible assets and property, plant and equipment arose from impairments in the Functional Materials & Solutions segment in the amount of €124 million in 2016 compared with €57 million in 2015. The Chemicals segment posted impairments of €67 million in 2016 and €18 million in 2015. Further impairments of €24 million concerned the Agricultural Solutions segment in 2016. The previous year had recorded €500 million in impairments in the Oil & Gas segment and €53 million in the Performance Products segment.

Costs from miscellaneous revenue-generating activities concerned the respective item presented in other operating income.

For more information, see Note 7 from page 182 onward

Expenses from foreign-currency and hedging transactions as well as from the measurement of LTI options were related to foreign currency translations of receivables and payables as well as changes in the fair value of currency derivatives and other hedging transactions. Compared with the previous year, lower expenses were particularly the result of the appreciation of the U.S. dollar against various currencies. Countering this was an additional expense in 2016 for the long-term incentive (LTI) program of €267 million (2015: €53 million).

Losses from the disposal of fixed assets and divestitures amounted to €17 million in 2016 from the reduction in disposal gains from the asset swap with Gazprom as part of the final purchase price allocation. In 2015, losses mainly stemmed from the sale of the global paper hydrous kaolin business to Imerys Kaolin, Inc., Roswell, Georgia.

Expenses from the addition of valuation allowances for business-related receivables rose by €25 million compared with the previous year. This was predominantly due to higher additions in the region South America, Africa, Middle East as compared with the prior year.

In both years, expenses under **Other** included expenses from attorneys' fees for litigation cases as well as from REACH, the provision of services, and conducting additional projects. Moreover, 2016 contained expenses of €27 million from the fire damage at the Ludwigshafen North Harbor. In addition to expenses for onerous contracts at several companies, 2015 also contained expenses of €121 million for BASF's 150th anniversary.

9 Income from companies accounted for using the equity method

Million €	2016	2015
Proportional net income	317	275
Thereof joint ventures	157	25
associated companies	160	250
Other adjustments of income and expense	(10)	(24)
Thereof joint ventures	(4)	(35)
associated companies	(6)	11
Income from companies accounted for using the equity method	**307**	**251**

Income from companies accounted for using the equity method increased in 2016 primarily due to higher earnings of BASF-YPC Company Ltd., Nanjing, China. Countering this were lower earnings at Lucura Versicherungs AG, Ludwigshafen, Germany, which was largely attributable to building of provisions in connection with the fire at the North Harbor in October 2016.

In 2016, earnings from companies in the Oil and Gas segment which are accounted for using the equity method remained at the prior year level. Nord Stream AG, Zug, Switzerland, OAO Severneftegazprom, Krasnoselkup, Russia, as well as GASCADE Gastransport GmbH, Kassel, Germany, contributed most to these earnings.

10 Financial result

Million €	2016	2015
Dividends and similar income	39	47
Income from the disposal of shareholdings	9	31
Income from profit transfer agreements	6	2
Income from tax allocation to participating interests	–	–
Income from other shareholdings	**54**	**80**
Losses from loss transfer agreements	(18)	(16)
Write-downs on/losses from the sale of shareholdings	(53)	(55)
Expenses from other shareholdings	**(71)**	**(71)**
Net income from shareholdings	**(17)**	**9**
Interest income from cash and cash equivalents	159	184
Interest and dividend income from securities and loans	20	29
Interest income	**179**	**213**
Interest expenses	**(661)**	**(638)**
Interest result	**(482)**	**(425)**
Net interest income from overfunded pension plans and similar obligations	5	3
Income from the capitalization of borrowing costs	92	149
Miscellaneous financial income	–	–
Other financial income	**97**	**152**
Write-downs on/losses from the disposal of securities and loans	(10)	(18)
Net interest expense from underfunded pension plans and similar obligations	(183)	(196)
Net interest expense from other long-term personnel obligations	(7)	(3)
Unwinding the discount on other noncurrent liabilities	(47)	(68)
Miscellaneous financial expenses	(231)	(151)
Other financial expenses	**(478)**	**(436)**
Other financial result	**(381)**	**(284)**
Financial result	**(880)**	**(700)**

Net income from shareholdings was €26 million lower in 2016 than in the previous year. In 2015, higher **income from the disposal of shareholdings** was reported, particularly from the disposal of the share in Indaver N.V., Antwerp, Belgium.

The **interest result** declined by €57 million compared with the previous year from minus €425 million to minus €482 million. This was due to lower interest income particularly from liquid funds and higher interest expenses arising from bank loans outside of the eurozone.

Net interest expenses of the respective financial year is based on the discount rate and the defined benefit obligation at the beginning of the year. The **net interest expense from underfunded pension plans and similar obligations** decreased compared with the previous year, as a result of the reduced net defined benefit liability as of December 31, 2015.

In comparison with 2015, **income from the capitalization of borrowing costs** declined due to the start up of larger investment projects.

The rise in **other financial expenses** was largely attributable to hedging of loans in U.S. dollars.

11 Income taxes

In Germany, a uniform corporate income tax rate of 15.0% as well as a solidarity surcharge of 5.5% thereon is levied on all paid out and retained earnings. In addition to corporate income tax, income generated in Germany is subject to a trade tax that varies depending on the municipality in which the company is represented. Due to a constant rate of assessment for Ludwigshafen, Germany, in 2016, the weighted average trade tax rate was 14.1% (2015: 14.1%). The 30% rate used to calculate deferred taxes for German Group companies remained unchanged in 2016. The profits of foreign Group companies are assessed using the tax rates applicable in their respective countries. These are also generally used to calculate deferred taxes to the extent that tax rate adjustments for the future have not yet been enacted.

Tax expense

Million €	2016	2015
Current tax expense	**1,654**	**1,610**
Corporate income tax, solidarity surcharge and trade taxes (Germany)	589	514
Foreign income tax	1,184	1,231
Taxes for prior years	(119)	(135)
Deferred tax expense (+) / income (–)	**(514)**	**(363)**
From changes in temporary differences	(473)	(314)
From changes in tax loss carryforwards / unused tax credits	(43)	(59)
From changes in the tax rate	(6)	7
From valuation allowances on deferred tax assets	8	3
Income taxes	**1,140**	**1,247**
Other taxes as well as sales and consumption taxes	272	302
Tax expense	**1,412**	**1,549**

Changes in valuation allowances on deferred tax assets for tax loss carryforwards resulted in expenses of €7 million in 2016 and expenses of €4 million in 2015.

Other taxes included real estate taxes and other comparable taxes totaling €109 million in 2016 and €106 million in 2015.

Reconciliation of the effective tax rate and the tax rate in Germany

	2016		2015	
	Million €	%	Million €	%
Income before taxes and minority interests	5,395	–	5,548	–
Expected tax based on German corporate income tax (15%)	810	15.0	832	15.0
Solidarity surcharge	13	0.2	11	0.2
German trade tax	236	4.4	234	4.2
Foreign tax-rate differential	402	7.5	225	4.1
Tax-exempt income	(46)	(0.9)	(103)	(1.9)
Nondeductible expenses	76	1.4	239	4.3
Income after taxes of companies accounted for using the equity method	(46)	(0.9)	(38)	(0.7)
Taxes for prior years	(119)	(2.2)	(135)	(2.4)
Deferred tax liabilities for the future reversal of temporary differences associated with shares in participating interests	(2)	0.0	(28)	(0.5)
Other	(184)	(3.4)	10	0.2
Income taxes / effective tax rate	**1,140**	**21.1**	**1,247**	**22.5**

The BASF Group tax rate amounted to 21.1% in 2016 (2015: 22.5%). The lower tax rate was mainly due to deferred tax income arising from the valuation of the differences to the tax values as a result of foreign currency translation. Taxes for prior years primarily contained reversals of long-term tax provisions.

The foreign tax-rate differential increased due to improvement in earnings in the Exploration & Production business sector in countries with a high tax rate, particularly in Norway. In the previous year, nondeductible expenses particularly included an impairment of the goodwill of the Exploration & Production business sector. In Other, currency driven valuation of the differences to the tax values as well as additional tax depreciation on oil and gas production facilities in Norway led to tax income.

Future reversals of temporary differences for shares in investments that are assumed to have a planning horizon of one year led to deferred tax income of €2 million in 2016 (2015: €28 million).

Deferred taxes

Deferred tax assets and liabilities (million €)

	Deferred tax assets		Deferred tax liabilities	
	2016	2015	2016	2015
Intangible assets	90	90	1,719	1,553
Property, plant and equipment	180	182	3,336	3,322
Financial assets	51	12	84	106
Inventories and accounts receivable	348	251	498	517
Provisions for pensions	3,028	2,410	431	472
Other provisions and liabilities	1,446	1,346	170	177
Tax loss carryforwards	309	271	–	–
Other	157	164	95	107
Netting	(3,016)	(2,873)	(3,016)	(2,873)
Valuation allowances for deferred tax assets	(80)	(62)	–	–
Thereof for tax loss carryforwards	(30)	(25)	–	–
Total	**2,513**	**1,791**	**3,317**	**3,381**
Thereof current	595	439	179	256

Deferred taxes result from temporary differences between tax balances and the measurement of assets and liabilities according to IFRS as well as from tax loss carryforwards and unused tax credits. The remeasurement of all the assets and liabilities associated with acquisitions according to IFRS 3 has resulted in significant deviations between fair values and the values in the tax accounts. This leads primarily to deferred tax liabilities.

Undistributed earnings of subsidiaries resulted in temporary differences of €8,905 million in 2016 (2015: €9,241 million) for which deferred tax liabilities were not recognized, as they are either not subject to taxation on payout or they are expected to be reinvested for indefinite periods of time.

Tax loss carryforwards

The regional distribution of tax loss carryforwards is as follows:

Tax loss carryforwards (million €)

	Tax loss carryforwards		Deferred tax assets	
	2016	2015	2016	2015
Germany	1	1	–	–
Foreign	2,383	2,490	279	246
Total	**2,384**	**2,491**	**279**	**246**

Tax loss carryforwards exist in all regions, especially in Europe and Asia. German tax losses may be carried forward indefinitely. In foreign countries, tax loss carryforwards are in some cases only possible for a limited period of time. The bulk of the tax loss carryforwards will expire in Europe by 2019 and in Asia by 2021. No deferred tax assets were recognized for tax loss carryforwards of €1,478 million in 2016 (2015: €1,767 million).

Tax obligations

Tax obligations primarily include assessed income taxes and other taxes as well as estimated income taxes not yet assessed for the current year. Tax obligations amounted to €1,288 million in 2016 (2015: €1,082 million).

12 Minority interests

Million €	2016	2015
Minority interests in profits	229	343
Minority interests in losses	(30)	(29)
Total	**199**	**314**

In 2016, lower **minority interests in profits** in comparison with the previous year were mainly the result of the disposal of shares in companies active in the gas storage business in connection with the asset swap completed with Gazprom on September 30, 2015. Also responsible were decreased margins and lower sales volumes from the reduced capacity utilization of BASF TOTAL Petrochemicals LLC's condensate splitter in Port Arthur, Texas.

Higher **minority interests in profits** compared with the previous year were predominantly attributable to W & G Transport Holding GmbH, Kassel, Germany, and Shanghai BASF Polyurethane Company Ltd., Shanghai, China.

For more information on minority interests in consolidated companies, see Note 21 on page 197

13 Personnel expenses and employees

Personnel expenses

The BASF Group spent €10,165 million for wages and salaries, social security contributions and expenses for pensions and assistance in 2016 (2015: €9,982 million). This represented an increase in personnel expenses of 1.8%. This was particularly due to higher expenses for the long-term incentive (LTI) program in addition to wage and salary increases. Countering this was the lower average number of employees (2016: 111,975 employees; 2015: 113,249 employees) as well as currency effects.

Personnel expenses (million €)

	2016	2015
Wages and salaries	8,170	7,943
Social security contributions and expenses for pensions and assistance	1,995	2,039
Thereof for pension benefits	627	658
Personnel expenses	**10,165**	**9,982**

Number of employees

As of December 31, 2016, the number of employees increased to 113,830 employees due to the acquisition of Chemetall compared with 112,435 employees as of December 31, 2015.

It was distributed over the regions as follows:

Number of employees as of December 31

		2016	2015
Europe		70,784	70,079
	Thereof Germany	53,318	52,837
North America		17,583	17,471
Asia Pacific		18,156	17,562
South America, Africa, Middle East		7,307	7,323
BASF Group		**113,830**	**112,435**
Thereof	apprentices and trainees	3,120	3,240
	temporary staff	2,334	2,294

Employees from joint operations are included in the number of employees at year end relative to BASF's share in the respective company. In total, this included 432 employees in 2016 (2015: 392 employees).

The average number of employees was distributed over the regions as follows:

Average number of employees

		2016	2015
Europe		69,873	70,922
	Thereof Germany	52,608	52,987
North America		17,308	17,342
Asia Pacific		17,473	17,428
South America, Africa, Middle East		7,321	7,557
BASF Group		**111,975**	**113,249**
Thereof	apprentices and trainees	2,838	2,942
	temporary staff	2,365	2,574

Employees from joint operations are included in the average number of employees relative to BASF's share in the company. This comprised a total of 404 employees (2015: 398 employees).

Notes on balance sheet

14 Intangible assets

The **goodwill** of BASF is allocated to 22 cash-generating units (2015: 21), which are defined either on the basis of business units or on a higher level.

Annual impairment testing took place in the fourth quarter of the year on the basis of the cash-generating units. Recoverable amounts were determined in most cases using the value in use. This was done using plans approved by company management and their respective cash flows, generally for the next five years. Thereafter, a terminal value was calculated using a forward projection from the last detailed planning year as a perpetual annuity. The planning is based on experience, current performance and management's best possible estimates on the future development of individual parameters, such as raw material prices and profit margins. The oil price is also among the main input parameters that provide the basis for the forecast of cash flows in the current financial plans. Market assumptions regarding, for example, economic development and market growth are included based on external macroeconomic sources as well as sources specific to the industry.

The weighted average cost of capital rate after tax required for impairment testing is determined using the Capital Asset Pricing Model. It comprises a risk-free rate, a market risk premium, and a spread for credit risk based on the respective industry-specific peer group. The calculation also takes into account capital structure and the beta factor of the respective peer group as well as the average tax rate of each cash-generating unit. Impairment tests of the units (excluding Exploration & Production in the Oil & Gas segment) were conducted assuming a weighted average cost of capital rate after taxes between 5.07% and 8.01% (2015: between 6.04% and 7.67%). This represents a weighted average cost of capital rate before taxes between 6.43% and 10.77% (2015: between 7.77% and 10.81%). In the financial year 2016, a refined valuation model based on a field-related valuation approach was introduced, which considers the expected cash flows as well as the tax payments in the individual countries. The period under consideration now includes the planned license terms and the production profiles of the included oil and gas fields. Furthermore, instead of using a single weighted average cost of capital rate, the country risk and the specific tax rate is considered in each case: this leads to a more precise calculation of the recoverable amount. Considering these parameters, the capital rate after taxes varied between 7.5% and 13.76% and before taxes between 10.96% and 37.68%.

In determining the recoverable amount for the great majority of cash-generating units, BASF generally anticipates that a reasonably possible deviation from the key assumptions will not lead to the carrying amount of the units exceeding their respective recoverable amounts. For the goodwill of the Construction Chemicals division and the cash-generating units Pigments (in the Dispersions & Pigments division), as well as Catalysts (excluding battery materials), this is not the case.

In the 2016 business year, the recoverable amount of the Construction Chemicals unit exceeded the carrying amount by around €282 million. The weighted average cost of capital rate after taxes used for impairment testing was 8.01% (2015: 7.67%). The recoverable amount would equal the unit's carrying amount if the weighted average cost of capital rate increased by 0.69 percentage points (2015: by 0.96 percentage points) or if income from operations of the last detailed planning year – as the basis for the terminal value – were lower by 12.0% (2015: by 16.65%).

In 2016, the recoverable amount of Pigments exceeded the carrying amount by €242 million. The weighted average cost of capital rate after taxes used for impairment testing was 5.09% (2015: 6.07%). The recoverable amount would equal the unit's carrying amount if the weighted average cost of capital rate increased by 0.51 percentage points (2015: by 0.04 percentage points) or if income from operations of the last detailed planning year – as the basis for the terminal value – were lower by 13.78% (2015: by 0.92%).

In 2016, the recoverable amount of Catalysts (excluding battery materials) exceeded the carrying amount by €705 million. The weighted average cost of capital rate after taxes used for the impairment testing of this unit was 8.01% (2015: 7.66%). The recoverable amount would equal the unit's carrying amount if the weighted average cost of capital rate increased by 0.82 percentage points (2015: by 0.73 percentage points) or if income from operations of the last detailed planning year – as the basis for the terminal value – were lower by 13.75% (2015: by 14.52%).

For impairment testing in the Exploration & Production business sector in the Oil & Gas segment, BASF assumes an average oil price of $55 per barrel of Brent crude oil in 2017. In comparison with the previous year, the long-term outlook for oil prices remained unchanged. The recoverable amount of the cash-generating unit Exploration & Production improved significantly compared against the impairment test of the previous year. This was mainly due to the expenditure and production profiles that were adapted to the price development.

Goodwill of cash-generating units (million €)

Cash-generating unit	2016 Goodwill	2016 Growth rate[1]	2015 Goodwill	2015 Growth rate[1]
Crop Protection division	2,093	2.0%	2,048	2.0%
Exploration & Production in the Oil & Gas segment	1,712	–[2]	1,660	(2.0%)
Catalysts division (excluding battery materials)	1,390	2.0%	1,411	2.0%
Construction Chemicals division	735	1.5%	700	1.5%
Personal care ingredients in the Care Chemicals division	531	2.0%	537	2.0%
Pigments in the Dispersions & Pigments division	431	2.0%	484	2.0%
Surface Treatment in the Coatings division	1,555	–[3]	–	–
Other cash-generating units	1,626	0.0–2.0%	1,523	0.0–2.0%
Goodwill as of December 31	**10,073**		**8,363**	

[1] Growth rates used in impairment tests to determine terminal values in accordance with IAS 36

[2] For impairment testing of the cash-generating unit Exploration & Production, a field-related valuation method considering the expected term and production profile of the included oil and gas fields as well as the tax payments in the specific countries is used instead of a general growth rate, as of the 2016 financial year.

[3] No impairment testing for the acquisition in December 2016

Development of intangible assets 2016 (million €)

	Distribution, supply and similar rights	Product rights, licenses and trademarks	Know-how, patents and production technologies	Internally generated intangible assets	Other rights and values[4]	Goodwill	Total
Cost							
Balance as of January 1, 2016	4,063	1,318	1,951	91	450	8,500	16,373
Changes in scope of consolidation	–	–	–	–	–	2	2
Additions	–	18	39	10	25	–	92
Additions from acquisitions	1,082	44	108	–	3	1,552	2,789
Disposals	(343)	(39)	(149)	(9)	(60)	(64)	(664)
Transfers	(2)	(16)	(12)	–	13	–	(17)
Currency effects	251	14	21	–	4	224	514
Balance as of December 31, 2016	5,051	1,339	1,958	92	435	10,214	19,089
Accumulated amortization							
Balance as of January 1, 2016	2,160	411	865	67	196	137	3,836
Changes in scope of consolidation							
Additions	260	47	153	14	86	–	560
Disposals	(339)	(24)	(146)	(9)	(55)	–	(573)
Transfers	(1)	–	–	–	–	–	(1)
Currency effects	88	1	10	–	2	4	105
Balance as of December 31, 2016	2,168	435	882	72	229	141	3,927
Net carrying amount as of December 31, 2016	**2,883**	**904**	**1,076**	**20**	**206**	**10,073**	**15,162**

[4] Including licenses to such rights and values

Besides goodwill, **intangible assets** also include acquired intangible assets as well as internally generated intangible assets. In addition, they include rights belonging to the Oil & Gas segment, which are amortized in accordance with the unit of production method. As of December 31, 2016, their acquisition costs amounted to €1,029 million and accumulated amortization to €328 million; amortization in 2016 amounted to €19 million.

Additions from acquisitions amounted to €2,789 million in 2016. Significant acquisitions comprising the purchase of the global surface treatment provider Chemetall from Albemarle Corp., Charlotte, North Carolina, and the automotive refinishing business from Guangdong Yinfan Chemistry, Jiangmen, China, led to an increase of goodwill in the amount of €1,552 million. In connection with these transactions, additions to intangible assets amounted to €1,237 million. These were primarily related to customer relationships and production technologies.

Disposals of intangible assets in the amount of €21 million were largely attributable to the sale of the 25% share in the Byrding field to Statoil and the divestiture of the global photoinitiator business as well as the global polyolefin catalysts business. Related to this, goodwill of €64 million was derecognized.

Concessions for oil and gas production under the category **product rights, licenses and trademarks** with a net carrying amount of €466 million in 2016 authorize the exploration and production of oil and gas in certain areas. At the end of the term of a concession, the rights are returned.

In 2016, additions to **accumulated amortization** included impairments of €61 million. This primarily affected impairments relating to production technologies and marketing and selling rights in the Functional Materials & Solutions segment in the amount of €51 million.

Development of intangible assets 2015 (million €)

	Distribution, supply and similar rights	Product rights, licenses and trademarks	Know-how, patents and production technologies	Internally generated intangible assets	Other rights and values[1]	Goodwill	Total
Cost							
Balance as of January 1, 2015	4,014	1,410	2,000	86	674	8,141	16,325
Changes in scope of consolidation	5	–	(53)	–	(1)	–	(49)
Additions	–	56	23	11	45	–	135
Additions from acquisitions	47	–	38	–	32	19	136
Disposals	(94)	(43)	(137)	(7)	(147)	(149)	(577)
Transfers	(2)	(167)	34	1	(170)	(24)	(328)
Currency effects	93	62	46	–	17	513	731
Balance as of December 31, 2015	4,063	1,318	1,951	91	450	8,500	16,373
Accumulated amortization							
Balance as of January 1, 2015	1,879	379	809	59	232	–	3,358
Changes in scope of consolidation	3	–	(38)	–	(1)	–	(36)
Additions	302	71	193	14	84	137	801
Disposals	(92)	(43)	(125)	(6)	(123)	–	(389)
Transfers	–	(1)	8	–	(7)	–	–
Currency effects	68	5	18	–	11	–	102
Balance as of December 31, 2015	2,160	411	865	67	196	137	3,836
Net carrying amount as of December 31, 2015	**1,903**	**907**	**1,086**	**24**	**254**	**8,363**	**12,537**

[1] Including licenses to such rights and values

Besides goodwill, **intangible assets** also include acquired intangible assets as well as internally generated intangible assets. In addition, they include rights belonging to the Oil & Gas segment, which are amortized in accordance with the unit of production method. As of December 31, 2015, their acquisition costs amounted to €835 million and accumulated amortization to €246 million; amortization in 2015 amounted to €41 million.

Additions from acquisitions amounted to €136 million in 2015. Significant acquisitions concerned the purchase of a 66% share in a company to which TODA KOGYO CORP., Hiroshima, Japan, contributed its business, and the purchase of the polyurethane (PU) business from Polioles, S.A. de C.V., Lerma, Mexico. In connection with these transactions, additions to intangible assets amounted to €87 million. Moreover, BASF concluded an agreement with Lanxess on the acquisition and use of technologies and patents for the production of high-molecular-weight polyisobutene (HM PIB), which added €23 million to intangible assets.

Concessions for oil and gas production under the category **product rights, licenses and trademarks** with a net carrying amount of €480 million in 2015 authorize the exploration and production of oil and gas in certain areas. At the end of the term of a concession, the rights are returned. Aside from transfers to property, plant and equipment, transfers in 2015 included €54 million from the subsequent adjustments of the purchase price allocation for the acquisition of assets from Statoil.

Other rights and values under transfers also included derecognitions of €153 million resulting from the change in accounting to the net method for emission right certificates granted free of charge in 2015. Disposals of €17 million were attributable to the asset swap with Gazprom.

Related to this, **goodwill** of €173 million was derecognized, €32 million of which was reported under transfers.

In 2015, additions to **accumulated amortization** included impairments of €205 million. These primarily concerned the Oil & Gas segment. The revised assumptions for oil and gas prices led to €137 million in goodwill impairments as well as €27 million in impairments on a license in Norway. Furthermore, under the category know-how, patents and production technologies, a once-advantageous supply contract of €36 million in the Functional Materials & Solutions segment was fully impaired due to lower market prices.

In 2015, additions to accumulated amortization included write-ups of €2 million.

15 Property, plant and equipment

Machinery and technical equipment contain oil and gas deposits, including related wells, production facilities and further infrastructure, which are depreciated according to the unit of production method.

Development of property, plant and equipment 2016 (million €)

	Land, land rights and buildings	Machinery and technical equipment	Thereof depreciation according to the unit of production method	Miscellaneous equipment and fixtures	Construction in progress	Total
Cost						
Balance as of January 1, 2016	10,711	45,805	5,972	4,216	6,502	67,234
Changes in scope of consolidation	(1)	–	–	2	–	1
Additions	183	1,300	309	203	2,536	4,222
Additions from acquisitions	77	54	–	18	6	155
Disposals	(194)	(760)	(30)	(213)	(88)	(1,255)
Transfers	322	2,796	716	165	(3,145)	138
Currency effects	159	698	213	46	178	1,081
Balance as of December 31, 2016	11,257	49,893	7,180	4,437	5,989	71,576
Accumulated depreciation						
Balance as of January 1, 2016	5,637	32,965	2,827	3,152	220	41,974
Changes in scope of consolidation	(1)	–	–	–	–	(1)
Additions	376	2,930	939	307	78	3,691
Disposals	(100)	(658)	(28)	(182)	(73)	(1,013)
Transfers	(1)	1	–	1	–	1
Currency effects	58	417	(27)	30	6	511
Balance as of December 31, 2016	5,969	35,655	3,711	3,308	231	45,163
Net carrying amount as of December 31, 2016	**5,288**	**14,238**	**3,469**	**1,129**	**5,758**	**26,413**

Additions to property, plant and equipment arising from investment projects amounted to €4,222 million in 2016. Material investments were primarily related to the construction of an integrated aroma ingredients complex in Kuantan, Malaysia, the TDI complex in Ludwigshafen, Germany, and the expansion of the dicamba plant in Beaumont, Texas, which were partially started up in 2016. Further material asset additions included the construction of an ammonia plant in Freeport, Texas, and oil and gas production facilities and wells in Europe and South America.

In addition, investments for expansion purposes were particularly made at the sites in Ludwigshafen, Germany; Geismar, Louisiana; Port Arthur, Texas; and Antwerp, Belgium.

Government grants of €1 million were deducted from asset additions.

Due to acquisitions, property, plant and equipment rose by €155 million primarily from the acquisition of the global surface treatment provider Chemetall from Albemarle Corp., Charlotte, North Carolina.

In 2016, impairments of €254 million were included in **accumulated depreciation**. These pertained largely to impairments of €133 million on machinery and technical equipment as well as buildings due to the new strategic direction of individual businesses in the Chemicals and Functional Materials & Solutions segments. The recoverable amount of these assets equals their value in use amounting to €72 million. The weighted average cost of capital rate before taxes applied ranged between 9.4% and 12.8%.

In 2016, additions to accumulated depreciation contained write-ups of €2 million.

Disposals of property, plant and equipment were largely attributable to the sale of assets of the global polyolefin catalysts business to W. R. Grace & Co., Columbia, Maryland; the sale of the worldwide photoinitiator business to IGM Resins B.V., Waalwijk, the Netherlands; the sale of the 25% share in the Byrding field to Statoil; and the sale of industrial coatings business to the AkzoNobel Group.

Currency effects arose particularly from the appreciation of the U.S. dollar as well as the Brazilian real relative to the euro.

Development of property, plant and equipment 2015 (million €)

	Land, land rights and buildings	Machinery and technical equipment	Thereof depreciation according to the unit of production method	Miscellaneous equipment and fixtures	Construction in progress	Total
Cost						
Balance as of January 1, 2015	9,635	43,410	5,729	3,688	7,681	64,414
Changes in scope of consolidation	(32)	(12)	–	–	4	(40)
Additions	396	1,474	492	226	3,555	5,651
Additions from acquisitions	25	46	–	1	19	91
Disposals	(263)	(2,974)	(977)	(184)	(606)	(4,027)
Transfers	734	2,529	483	391	(4,518)	(864)
Currency effects	216	1,332	245	94	367	2,009
Balance as of December 31, 2015	10,711	45,805	5,972	4,216	6,502	67,234
Accumulated depreciation						
Balance as of January 1, 2015	5,391	32,463	3,203	2,774	290	40,918
Changes in scope of consolidation	(36)	(19)	–	–	–	(55)
Additions	329	2,707	959	303	261	3,600
Disposals	(156)	(2,250)	(866)	(165)	(348)	(2,919)
Transfers	7	(935)	(595)	176	19	(733)
Currency effects	102	999	126	64	(2)	1,163
Balance as of December 31, 2015	5,637	32,965	2,827	3,152	220	41,974
Net carrying amount as of December 31, 2015	**5,074**	**12,840**	**3,145**	**1,064**	**6,282**	**25,260**

Additions to property, plant and equipment arising from investment projects amounted to €5,651 million in 2015. Significant investments were primarily related to the construction of a TDI complex in Ludwigshafen, Germany; a production complex for acrylic acid and superabsorbents in Camaçari, Brazil; and an MDI plant in Chongqing, China. Each of these started up either fully or partly in 2015. Further significant investments included the construction of an integrated aroma ingredients complex in Kuantan, Malaysia, and oil and gas production facilities and wells in Europe and South America. Investments for expansion purposes were particularly made at the sites in Ludwigshafen, Germany; Freeport, Texas; Geismar, Louisiana; and Antwerp, Belgium. Government grants of €10 million related to tangible assets were deducted. Due to acquisitions, property, plant and equipment rose by €91 million primarily from the acquisition of BASF TODA Battery Materials LLC, Tokyo, Japan.

In 2015, impairments of €485 million were included in **accumulated depreciation**. Of this amount, €336 million pertained to impairments on oil and gas fields in Norway, Libya and Germany in the Oil & Gas segment. These impairments arose particularly from the ongoing low oil and gas price levels and the resulting revision of planning assumptions. These fields were written down to their recoverable amount, totaling €1,338 million. The weighted average cost of capital rate before taxes used ranged between 9.13% and 88.83%. The high cost of capital rates were due to the special income tax for the oil and gas industry in Norway. The recoverable amount for impaired property, plant and equipment equals their value in use. In 2015, additions to accumulated depreciation contained write-ups of €5 million.

Disposals of property, plant and equipment were primarily attributable to the asset swap with Gazprom and related primarily to the transferred natural gas trading and storage business. Furthermore, BASF's share in Wintershall Noordzee B.V., Rijswijk, Netherlands, was reduced to 50%. With this loss of control, the company was reclassified as an investment accounted for using the equity method. 50% of the property, plant and equipment was reported in disposals and the remaining 50% in transfers.

Currency effects arose particularly from the appreciation of the U.S. dollar relative to the euro.

16 Investments accounted for using the equity method and other financial assets

Investments accounted for using the equity method (million €)

	2016	2015
Balance as of January 1	4,436	3,245
Changes in scope of consolidation	–	–
Additions	152	847
Disposals	(1)	(107)
Transfers	(27)	398
Currency effects	87	53
Net carrying amount as of December 31	**4,647**	**4,436**

Other financial assets (million €)

	December 31, 2016	December 31, 2015
Other shareholdings	468	420
Long-term securities	137	106
Other financial assets	**605**	**526**

Additions of €152 million to investments accounted for using the equity method were primarily attributable to the joint venture Synvina C.V., Amsterdam, the Netherlands, established with Avantium in 2016. Furthermore, additions included Chongqing Chemetall Surface Treatment Co., Ltd, Chongqing, China; and the Changchun Chemetall Chemicals Co. Ltd., Changchun, China. Both companies were acquired in connection with the acquisition of Chemetall on December 14, 2016. The capital increase at Markor Meiou Chemical (Xinjiang) Co., Ltd., Korla, China, had an effect of €8 million on additions.

Disposals totaling €107 million in the previous year were primarily attributable to the sale of the 25% share in SolVin to our partner Solvay, effective July 1, 2015.

Transfers include dividend distributions and other comprehensive income of the companies as well as the net income of investments accounted for using the equity method. The previous year's figure was made up primarily of the first-time use of the equity method to account for Wintershall Noordzee B.V., Rijswijk, the Netherlands. The company is operated together by BASF and Gazprom since the sale of BASF's 50% share to Gazprom in September 2015. Wintershall Noordzee B.V. is accounted for as a joint venture using the equity method in the Consolidated Financial Statements since then. In 2016, the final purchase price allocation resulted in an adjustment of the fair value of Wintershall Noordzee B.V. in the amount of minus €15 million, which is included in transfers.

For a detailed overview of income from companies accounted for using the equity method, see Note 9 on page 184

The change in **other shareholdings** resulted from additions of €107 million, primarily attributable to Gullfaks AS, Stavanger, Norway, and disposals of €12 million. Impairments amounted to €41 million. Other shareholdings decreased by €12 million as a result of reclassifications and transfers. **Currency effects** resulted in an increase of €6 million in other shareholdings.

17 Inventories

Million €	December 31, 2016	December 31, 2015
Raw materials and factory supplies	3,107	2,944
Work-in-process, finished goods and merchandise	6,808	6,680
Advance payments and services-in-process	90	69
Inventories	**10,005**	**9,693**

Work-in-process, finished goods and **merchandise** are combined into one item due to the production conditions in the chemical industry. Services-in-process primarily relate to services not invoiced as of the balance sheet date.

Cost of sales included inventories recognized as an expense amounting to €26,048 million in 2016, and €38,199 million in 2015.

A write-down of inventory was recognized in the amount of €43 million in 2016 and a write-up in the amount of €22 million in 2015. Changes in valuation allowances on inventory were largely due to lower net realizable value.

Of total **inventories**, €836 million was measured at net realizable value in 2016 and €770 million in 2015.

18 Receivables and miscellaneous assets

Other receivables and miscellaneous assets (million €)

	December 31, 2016		December 31, 2015	
	Noncurrent	Current	Noncurrent	Current
Loans and interest receivables	568	250	811	194
Derivatives with positive fair values	176	342	384	474
Receivables from finance leases	29	5	33	8
Insurance compensation receivables	6	14	–	16
Miscellaneous	126	406	130	357
Other receivables and assets which qualify as financial instruments	**905**	**1,017**	**1,358**	**1,049**
Prepaid expenses	62	258	61	176
Defined benefit assets	66	–	133	–
Tax refund claims	114	747	102	875
Employee receivables	–	10	–	21
Precious metal trading items	–	690	–	663
Miscellaneous	63	356	66	311
Other receivables and assets which do not qualify as financial instruments	**305**	**2,061**	**362**	**2,046**
Other receivables and miscellaneous assets	**1,210**	**3,078**	**1,720**	**3,095**

The decline in noncurrent **loans and interest receivables** in 2016 was predominantly due to the reduction of loans granted by WIGA Transport Beteiligungs-GmbH & Co. KG, Kassel, Germany, to NEL Gastransport GmbH, Kassel, Germany, and GASCADE Gastransport GmbH, Kassel, Germany, by €139 million to €259 million to finance the pipeline network. Furthermore, loans granted by BASF Belgium Coordination Center Comm. V., Antwerp, Belgium, mainly to finance the business expansion of Asian companies, were reduced by €72 million to €144 million in 2016. As in the previous year, this item also included receivables in favor of BASF SE from the BASF Pensionskasse arising from an agreement regarding the granting of profit participation capital in the amount of €80 million.

The reduction of noncurrent **derivatives positive fair market values** primarily affected the market valuation of combined interest rate and currency swaps. The change in current derivatives with positive fair market values was largely attributable to the lower fair values of precious metal and foreign currency derivatives.

Prepaid expenses in 2016 included prepayments of €64 million related to operating activities compared with €41 million in 2015, as well as €54 million in prepayments for insurance in 2016 compared with €30 million in 2015. Prepayments for license costs increased from €36 million to €48 million in 2016.

The reduction in current **tax refund claims** can largely be traced back to the settlement of open tax income receivables.

Precious metal trading items primarily comprise physical items and precious metal accounts as well as long positions in precious metals, which are largely hedged through sales or derivatives.

Valuation allowances for receivables 2016 (million €)

	Balance as of January 1, 2016	Additions recognized in income	Reversals recognized in income	Additions not recognized in income	Reversals not recognized in income	Balance as of December 31, 2016
Accounts receivable, trade	298	106	35	40	39	370
Other receivables	75	27	1	24	7	118
Total	**373**	**133**	**36**	**64**	**46**	**488**

Valuation allowances for receivables 2015 (million €)

	Balance as of January 1, 2015	Additions recognized in income	Reversals recognized in income	Additions not recognized in income	Reversals not recognized in income	Balance as of December 31, 2015
Accounts receivable, trade	337	80	41	33	111	298
Other receivables	108	18	–	19	70	75
Total	**445**	**98**	**41**	**52**	**181**	**373**

Changes recognized in income contained individual valuation allowances, group-wise individual valuation allowances and valuation allowances due to transfer risks.

Changes not recognized in income were primarily related to changes in the scope of consolidation, translation adjustments and derecognition of uncollectible receivables.

Even in the current economic environment, BASF has not observed any material changes in the credit quality of its receivables. In 2016, individual valuation allowances of €71 million were recognized for **accounts receivable, trade,** and valuation allowances of €22 million were reversed. In 2015, individual valuation allowances of €57 million were recognized for trade accounts receivable and valuation allowances of €17 million were reversed.

At BASF, a comprehensive, global credit insurance program covers trade accounts receivable incurred since January 1, 2015. As part of a global excess of loss policy, an essential part of future bad debts of the BASF Group are insured. No compensation claims were incurred in either 2016 or 2015.

In 2016, individual valuation allowances of €27 million were recognized for **other receivables** and €1 million reversed. In 2015, individual valuation allowances of €18 million were recognized for other receivables.

Aging analysis of accounts receivable, trade (million €)

	December 31, 2016		December 31, 2015	
	Gross value	Valuation allowances	Gross value	Valuation allowances
Not yet due	10,295	26	8,822	22
Past due less than 30 days	381	2	435	3
Past due between 30 and 89 days	159	8	135	8
Past due more than 90 days	487	334	422	265
Total	**11,322**	**370**	**9,814**	**298**

As of December 31, 2016, there were no material other receivables classified as financial instruments that were overdue and for which no valuation allowance was made.

19 Capital, reserves and retained earnings

Authorized capital

At the Annual Shareholders' Meeting on May 2, 2014, shareholders authorized the Board of Executive Directors, with the approval of the Supervisory Board, to increase the subscribed capital by issuing new registered shares up to a total of €500 million against cash or contributions in kind through May 1, 2019. The Board of Executive Directors is empowered, following the approval of the Supervisory Board, to decide on the exclusion of shareholders' subscription rights for these new shares in certain predefined cases covered by the enabling resolution. Until now, this option has not been exercised and no new shares have been issued.

BASF SE has only issued fully paid-up registered shares with no par value. There are no preferences or other restrictions. BASF SE does not hold any treasury shares.

Reserves and retained earnings

Capital surplus includes effects from BASF's share program, premiums from capital increases and consideration for warrants and negative goodwill from the capital consolidation resulting from acquisitions of subsidiaries in exchange for the issue of BASF SE shares at par value.

Million €	Dec. 31, 2016	Dec. 31, 2015
Legal reserves	625	594
Other retained earnings	30,890	29,526
Retained earnings	**31,515**	**30,120**

Transfers from **other retained earnings** increased **legal reserves** by €31 million in 2016 (2015: €60 million).

Due to the disposal of the 25% share in SolVin to our partner, Solvay, of parts of the pharmaceutical ingredient business to Siegfried Holding AG, Zofingen, Switzerland, and the asset swap with Gazprom, an amount of €68 million resulting from the remeasurement of defined benefit plans was transferred from other comprehensive income into retained earnings in 2015. There were no transfers in 2016.

The acquisition of shares in companies which BASF already controls or which are included as a joint arrangement in the Consolidated Financial Statements is treated as a transaction between shareholders, as long as this does not lead to a change in the consolidation method. There were no transactions of this type in 2016, as in the previous year.

Payment of dividends

In accordance with the resolution of the Annual Shareholders' Meeting on April 29, 2016, BASF SE paid a dividend of €2.90 per share from the retained profit of the 2015 fiscal year. With 918,478,694 shares entitled to dividends, this amounts to a total dividend payout of €2,663,588,212.60.

20 Other comprehensive income

Translation adjustments

The decline in the value of the euro, especially relative to the ruble and the U.S. dollar, in 2016 led to an increase of €824 million in the translation adjustment to €1,476 million.

Cash flow hedges

Hedging future cash flows at Nord Stream AG, Zug, Switzerland, a company accounted for using the equity method, resulted in a change of minus €7 million in 2016 and of €16 million in 2015.

The significant decline in the hedging of future cash flows in 2015 was primarily a result of the disposal of the negative fair values of commodity derivatives at WINGAS GmbH, Kassel, Germany, in connection with the asset swap with Gazprom.

For more information on cash flow hedge accounting, see Note 27.4 from page 213 onward

Remeasurement of defined benefit plans

Due to the disposal of the 25% share in SolVin to its partner, Solvay, of parts of the pharmaceutical ingredient business to Siegfried Holding AG, Zofingen, Switzerland, and the asset swap with Gazprom, an amount of €68 million resulting from the remeasurement of defined benefit plans was transferred from other comprehensive income into retained earnings in 2015. There were no transfers in 2016.

For more information on the remeasurement of defined benefit plans, see Note 22 from page 198 onward

21 Minority interests

		December 31, 2016		December 31, 2015	
		Equity stake		Equity stake	
Group company	Partner	%	Million €	%	Million €
WIGA Transport Beteiligungs-GmbH & Co. KG, W & G Transport Holding GmbH[1], OPAL Gastransport GmbH & Co. KG[1]	Gazprom Germania GmbH, Berlin, Germany	49.98[1]	(43)	49.98[1]	(128)
BASF India Ltd., Mumbai, India	Free float	26.67	36	26.67	35
BASF PETRONAS Chemicals Sdn. Bhd., Shah Alam, Malaysia	Petroliam Nasional Bhd., Kuala Lumpur, Malaysia	40.00	235	40.00	221
BASF TOTAL Petrochemicals LLC, Port Arthur, Texas	Total Petrochemicals Inc., Houston, Texas	40.00	260	40.00	249
Shanghai BASF Polyurethane Company Ltd., Shanghai, China	Shanghai Huayi (Group) Company, Shanghai, China, and Sinopec Shanghai Gaoqiao Petrochemical Corporation, Shanghai, China	30.00	95	30.00	62
BASF TODA Battery Materials, LLC, Tokyo, Japan	TODA KOGYO CORP., Hiroshima, Japan	34.00	34	34.00	39
BASF Shanghai Coatings Co. Ltd., Shanghai, China	Shanghai Huayi Fine Chemical Co., Ltd, Shanghai, China	40.00	56	40.00	49
Other			88		102
Total			**761**		**629**

[1] Equity stake in W & G Transportation Holding GmbH and OPAL Gastransport GmbH & Co. KG: 50.03%; voting rights and portion of earnings: 49.98%

22 Provisions for pensions and similar obligations

In addition to state pension plans, most employees are granted company pension benefits from either defined contribution or defined benefit plans. Benefits generally depend on years of service, contributions or compensation, and take into consideration the legal framework of labor, tax and social security laws of the countries where the companies are located. To limit the risks of changing financial market conditions as well as demographic developments, employees have been almost exclusively offered defined contribution plans for future years of service in recent years.

The Group Pension Committee monitors the risks of all pension plans of the Group. In this connection, it issues guidelines regarding the governance and risk management of pension plans, particularly with regard to the funding of the pension plans and the portfolio structure of the existing plan assets. The organization, responsibilities, strategy, implementation and reporting requirements are documented for the units involved.

Economic and legal environment of the plans

In some countries – especially in Germany, the United Kingdom, Switzerland and Belgium – there are pension obligations subject to government supervision or similar legal restrictions. For example, there are minimum funding requirements to cover pension obligations, which are based on actuarial assumptions that may differ from those in IAS 19. Furthermore, there are restrictions in qualitative and quantitative terms relating to parts of the plan assets for the investment in certain asset categories. This could result in fluctuating employer contributions, financing requirements and the assumption of obligations in favor of the pension funds to comply with the regulatory requirements.

The obligations and the plan assets used to fund the obligations are exposed to demographic, legal and economic risks. Economic risks are primarily due to unforeseen developments on commodity and capital markets. They affect, for example, pension adjustments based on the level of inflation in Germany and in the United Kingdom, as well as the impact of the discount rate on the amount of the defined benefit obligation. In previous years, measures taken to close plans with defined benefits for future service, especially benefits based on final pay promises and the assumption of healthcare costs for former employees, however, led to a reduction in risk with regard to future benefit levels.

The strategy of the BASF Group with regard to financing pension commitments is aligned with country-specific supervisory and tax regulations.

Description of the defined benefit plans

Germany

Description of the defined benefit plans Germany for BASF SE and German Group companies, a basic level of benefits is provided by BASF Pensionskasse VVaG, a legally independent funded plan, which is financed by contributions of employees and the employer as well as the return on plan assets. BASF SE ensures the necessary contributions to adequately finance the benefits promised by BASF Pensionskasse VVaG. Some of the benefits financed via the BASF Pensionskasse VVaG are subject to adjustments that must be borne by its member companies to the extent that these cannot be borne by BASF Pensionskasse VVaG due to the regulations imposed by the German supervisory authority. In 2004, the basic benefits plan at BASF was closed for newly hired employees at German BASF companies and replaced by a defined contribution plan. At BASF SE, occupational pension promises that exceed the basic level of benefits are financed under a contractual trust arrangement by BASF Pensionstreuhand e.V.; at German Group companies, these benefits are almost exclusively financed via pension provisions. The benefits are largely based on cash balance plans. Furthermore, employees are given the option of participating in various deferred compensation schemes.

United States

Employees are granted benefits based on defined contribution plans.

Since 2010, the existing defined benefit plans were closed to further increases in benefits based on future years of service, and benefits earned in the past have been frozen. There is no entitlement to pension adjustments to compensate for cost-of-living increases.

The legal and regulatory frameworks governing the plans are based on the U.S. Employee Retirement Income Security Act (ERISA), which requires the plan sponsor to ensure a minimum funding level. Any employer contributions necessary to meet the minimum funding level would be based on the results of an actuarial valuation. Furthermore, there are unfunded pension plans that are not subject to ERISA.

Additional similar obligations arise from plans which assume the healthcare costs and life insurance premiums of retired employees and their dependents. Such plans are closed to new entrants since 2007. In addition, the amount of the benefits for such plans is frozen.

Switzerland

The employees of the BASF Group in Switzerland receive a company pension, which is financed through a pension fund by employer and employee contributions as well as the return on assets. The pension plan is accounted for as a defined benefit plan, as the obligatory minimum pension guaranteed by law according to the Swiss law “Berufliche Vorsorge (BVG)” is included in the scheme. All benefits vest immediately.

According to government regulations, the employer is obligated to make contributions, so that the pension fund is able to grant minimum benefits guaranteed by law. The pension fund is managed by a board, where employer and employees are equally represented, that steers and monitors the benefit plan and assets.

United Kingdom

United Kingdom Employees are granted benefits based on a defined contribution plan.

A part of the workforce received benefit increases depending on service period in connection with a career average plan until December 31, 2015. The BASF Group maintains defined benefit plans in the United Kingdom, which were closed for further increases in benefit from future years of service. Adjustments to compensate for increases in the cost of living until the beginning of retirement are legally required for beneficiaries of defined benefit plans.

The financing of the pension plans is determined by the provisions of the regulatory authority for pensions and the relevant social and labor law requirements. The defined benefit plans are administered by a trust company, whose Board of Trustees, according to the trustee agreement and law, represents the interests of the beneficiaries and ensures that the benefits can be paid in the future. The required funding is determined using technical valuations according to local regulations every three years.

Other countries

In the case of subsidiaries in other countries, defined benefits are covered in some cases by pension provisions, but mainly by external insurance companies or pension funds.

Actuarial assumptions

The valuation of the defined benefit obligation is largely based on the following assumptions:

Assumptions used to determine the defined benefit obligation as of December 31

	Germany		United States		Switzerland		United Kingdom	
	2016	2015	2016	2015	2016	2015	2016	2015
Discount rate	1.80	2.50	4.00	4.20	0.60	0.80	2.80	4.00
Projected pension increase	1.50	1.50	–	–	–	–	3.10	2.90

Assumptions used to determine expenses for pension benefits in the respective business year

	Germany		United States		Switzerland		United Kingdom	
	2016	2015	2016	2015	2016	2015	2016	2015
Discount rate	2.50	2.40	4.20	3.90	0.80	1.00	4.00	3.70
Projected pension increase	1.50	1.75	–	–	–	–	2.90	2.90

The assumptions used to ascertain the defined benefit obligation as of December 31 are used in the following year to determine the expenses for pension plans.

A Group-wide, uniform procedure is used to determine the discount rates used for the valuation of material pension obligations of the BASF Group. Accordingly, the discount rates were derived from the yields on corporate bonds in the respective currency zones with an issuing volume of more than 100 million units of the respective currency with a minimum rating of AA– up to AA+ from one of the three rating agencies: Fitch, Moody's, or Standard & Poor's.

The valuation of the defined benefit obligation is generally made using the most recent actuarial mortality tables as of December 31 of the respective business year, which in Germany and the United States are derived from the BASF Group population and were last updated for the pension obligations in Germany in 2015 and for the pension obligations in the United States in 2014.

Actuarial mortality tables (significant countries) as of Dec. 31, 2016

Germany	Heubeck Richttafeln 2005G (modified)
United States	RP-2014 (modified) with MP-2014 generational projection
Switzerland	BVG 2015 generation
United Kingdom	S1PxA (standard actuarial mortality tables for self-administered plans (SAPS))

Sensitivity analysis

A change in the material actuarial assumptions would have the following effects on the defined benefit obligation:

Sensitivity of the defined benefit obligation as of December 31 (million €)

	Increase by 0.5 percentage points		Decrease by 0.5 percentage points	
	2016	2015	2016	2015
Discount rate	(1,990)	(1,750)	2,270	2,000
Projected pension increase	1,175	1,120	(1,110)	(930)

An alternative valuation of the defined benefit obligation was conducted in order to determine how changes in the underlying assumptions would influence the amount of the defined benefit obligation. A linear extrapolation of these amounts based on alternative changes in the assumptions as well as an addition of combined changes in the individual assumptions is not possible.

Explanation of the amounts in the statement of income and balance sheet

Composition of expenses for pension benefits (million €)

	2016	2015
Expenses for defined benefit plans	346	385
Expenses for defined contribution plans	281	273
Expenses for pension benefits (recognized in income from operations)	**627**	**658**
Net interest expenses from underfunded pension plans and similar obligations	183	196
Net interest income from overfunded pension plans	(5)	(3)
Interest cost for the asset ceiling	–	–
Expenses for pension benefits (recognized in the financial result)	**178**	**193**

The net interest on the defined benefit liability is recognized in the financial result. This results from the difference between the interest cost of the defined benefit obligation and the standardized return on plan assets as well as the interest cost for the asset ceiling. The expected contribution payments and benefits paid over the course of the business year are considered in the determination of net interest.

Net interest expense of the respective business year is based on the discount rate and the defined benefit obligation at the beginning of the year. The **net interest expense from underfunded pension plans and similar obligations** decreased compared with the previous year, as a result of the reduced net defined benefit liability as of December 31, 2015.

Development of defined benefit obligation (million €)

	2016	2015
Defined benefit obligation as of January 1	24,861	25,474
Current service cost	360	397
Interest cost	671	680
Benefits paid	(1,024)	(1,006)
Participants' contributions	49	53
Actuarial gains/losses		
for adjustments relating to financial assumptions	2,571	(868)
adjustments relating to demographic assumptions	(20)	(135)
experience adjustments	66	(103)
Effects from acquisitions and divestitures	148	(313)
Past service cost	(14)	(48)
Plan settlements	–	–
Other changes	(2)	(65)
Currency effects	(63)	795
Defined benefit obligation as of December 31	**27,603**	**24,861**

As of December 31, 2016, the weighted average duration of the defined benefit obligation amounted to 15.7 years (previous year: 15.3 years). The significant decline in the discount rate led to an increase in the weighted average duration of the defined benefit obligations.

Development of plan assets (million €)

	2016	2015
Plan assets as of January 1	18,681	18,252
Standardized return on plan assets	492	487
Deviation between actual and standardized return on plan assets	775	(145)
Employer contributions	207	284
Participants' contributions	49	53
Benefits paid	(627)	(630)
Effects from acquisitions and divestitures	64	(165)
Past service cost	–	(36)
Plan settlements	–	–
Other changes	(20)	(39)
Currency effects	(161)	620
Plan assets as of December 31	**19,460**	**18,681**

The standardized return on plan assets is calculated by multiplying plan assets at the beginning of the year with the discount rate used for existing defined benefit obligation at the beginning of the year, taking into account benefit and contribution payments expected to be made during the year.

The expected contribution payments for 2017 amount to approximately €700 million.

Development of the net defined benefit liability (million €)

		2016	2015
Net defined benefit liability as of January 1		(6,180)	(7,222)
Current service cost		(360)	(397)
Interest cost		(671)	(680)
Standardized return on plan assets		492	487
Deviation between actual and standardized return on plan assets		775	(145)
Actuarial gains/losses of the defined benefit obligation		(2,617)	1,106
Benefits paid by unfunded plans		397	376
Employer contributions		207	284
Effects from acquisitions and divestitures		(84)	148
Past service cost		14	12
Other changes		(18)	26
Currency effects		(98)	(175)
Net defined benefit liability as of December 31		**(8,143)**	**(6,180)**
Thereof	defined benefit assets	66	133
	provisions for pensions and similar obligations	(8,209)	(6,313)

Regional allocation of defined benefit plans as of December 31 (million €)

	Pension obligations		Plan assets		Net defined benefit liability	
	2016	2015	2016	2015	2016	2015
Germany	18,242	16,029	12,282	11,671	(5,960)	(4,358)
United States	4,524	4,356	2,806	2,717	(1,718)	(1,639)
Switzerland	2,272	2,108	1,974	1,939	(298)	(169)
United Kingdom	1,909	1,780	1,898	1,890	(11)	110
Other	656	588	500	464	(156)	(124)
Total	**27,603**	**24,861**	**19,460**	**18,681**	**(8,143)**	**(6,180)**

Explanations regarding plan assets

The target asset allocation has been defined by using asset liability studies and is reviewed regularly. Accordingly, plan assets are aligned with the long-term development of the obligations, taking into consideration the risks associated with the specific asset classes and the regulations relating to the investment of plan assets. The existing portfolio structure is oriented towards the target asset allocation. In addition, current market assessments are taken into consideration. In order to mitigate risks and maximize returns, a widely spread global portfolio of individual asset classes is held.

Liability-driven investment (LDI) techniques, such as hedging the risk of changes in interest rates and inflation, are used in some pension plans, especially in the U.K. and U.S. plans.

Structure of plan assets (%)

	2016	2015
Equities	28	26
Debt instruments	53	54
Thereof for government debtors	16	15
for other debtors	37	39
Real estate	4	4
Alternative investments	15	15
Cash and cash equivalents	–	1
Total	**100**	**100**

The asset class **debt instruments** comprises promissory notes and debentures (Pfandbriefe) in addition to corporate and government bonds. Government bonds primarily concern bonds from those countries enjoying the highest credit ratings, such as the United States, United Kingdom, Germany and Switzerland. Corporate bonds mainly comprise investment-grade bonds, whereby particular high-yield bonds are also held to a limited extent. In connection with the ongoing monitoring of default risk based on a given risk budget and on the continuous observation of the development of the creditworthiness of issuers, an adjustment of plan asset allocation to a revised market assessment may be made, if necessary. **Alternative investments** largely comprise investments in private equity, absolute return funds and senior secured loans.

Almost all of the **equities** are priced on active markets. The category **debt instruments** includes promissory notes and debentures (Pfandbriefe), which were acquired through private placements with a market value in the amount of €853 million as of December 31, 2016, and €1,072 million as of December 31, 2015. For such securities, especially those held by domestic pension plans, there is no active market. The capital market compensates for this lack of fungibility with yield premiums depending on the maturity. With only a few exceptions, there is no active market for plan assets in **real estate** and **alternative investments**.

Plan assets contained securities issued by BASF Group companies with a market value of €16 million on December 31, 2016 and €11 million on December 31, 2015. The market value of the properties of legally independent pension funds rented to BASF Group companies amounted to €117 million on December 31, 2016, and €151 million on December 31, 2015.

Since 2010 there has been an agreement between BASF SE and BASF Pensionskasse about the granting of profit participation capital with a nominal value of €80 million, which is used to strengthen the financing of the BASF Pensionskasse. No material transactions beyond this took place between the legally independent pension funds and BASF Group companies in 2016.

The funding of the plans was as follows:

Current funding situation of the pension plans as of December 31 (million €)

	2016		2015	
	Defined benefit obligation	Plan assets	Defined benefit obligation	Plan assets
Unfunded pension plans	2,869	–	2,611	–
Funded pension plans	24,734	19,460	22,250	18,681
Total	**27,603**	**19,460**	**24,861**	**18,681**

Defined contribution plans and government pensions

The contributions to defined-contribution plans contained in income from operations amounted to €281 million in 2016 and €273 million in 2015.

Contributions to government pension plans were €590 million in 2016 and €609 million in 2015.

23 Other provisions

Million €	December 31, 2016		December 31, 2015	
		Thereof current		Thereof current
Restoration obligations	1,297	29	1,266	72
Environmental protection and remediation costs	588	116	538	59
Employee obligations	1,933	1,217	1,569	1,150
Obligations from sales and purchase contracts	928	919	775	763
Restructuring measures	208	161	196	165
Litigation, damage claims, warranties and similar commitments	109	37	86	29
Other	1,406	323	1,479	302
Total	**6,469**	**2,802**	**5,909**	**2,540**

Restoration obligations primarily relate to the estimated costs for the filling of wells and the removal of production equipment after the end of production in the Oil & Gas segment.

Provisions for **environmental protection and remediation costs** cover expected costs for rehabilitating contaminated sites, recultivating landfills, removal of environmental contamination at existing production or storage sites and similar measures.

Provisions for **employee obligations** primarily include obligations for the granting of long-service bonuses and anniversary payments, variable compensation including associated social security contributions, as well as provisions for early retirement programs for employees nearing retirement. The increase was primarily attributable to higher accruals for the long-term Incentive (LTI) program.

For more information on provisions for the long-term incentive program, see Note 30 from page 216 onward

Obligations from sales and purchase contracts largely include obligations arising from rebates granted and other price discounts in the Agricultural Solutions segment, warranties and product liability, sales commissions, expected losses on contracts. The increase in provisions resulted from higher accruals for rebate programs.

The **restructuring measures** provisions include severance payments to departing employees as well as expected costs for site closures, including the costs for demolition and similar measures.

Provisions for **litigation, damage claims, warranties and similar commitments** contain anticipated expenses from lawsuits in which BASF is the defendant party, as well as obligations under damage claims against BASF and fines.

Other largely includes noncurrent tax provisions.

The following table shows the development of other provisions by category. Other changes include changes in the scope of consolidation, acquisitions, divestitures, currency effects and the reclassification of obligations to liabilities when the amount and timing of these obligations become known.

Development of other provisions in 2016 (million €)

	Jan. 1, 2016	Additions	Unwinding of the discount	Utilization	Reversals	Other changes	Dec. 31, 2016
Restoration obligations	1,266	118	27	(72)	(62)	20	1,297
Environmental protection and remediation costs	538	110	5	(65)	(10)	10	588
Employee obligations	1,569	1,561	3	(1,132)	(50)	(18)	1,933
Obligations from sales and purchase contracts	775	743	–	(575)	(59)	44	928
Restructuring measures	196	117	–	(84)	(27)	6	208
Litigation, damage claims, warranties and similar commitments	86	51	–	(30)	(13)	15	109
Other	1,479	317	1	(201)	(139)	(51)	1,406
Total	**5,909**	**3,017**	**36**	**(2,159)**	**(360)**	**26**	**6,469**

24 Liabilities

Financial indebtedness (million €)

		Currency	Nominal value (million, currency of issue)	Effective interest rate	Carrying amounts based on effective interest method	
					December 31, 2016	December 31, 2015
BASF SE						
Commercial paper		USD	1,089		1,033	1,714
4.5%	Bond 2006/2016	EUR	500	4.62%	–	500
Variable	Bond 2013/2016	EUR	200	variable	–	200
4.25%	Bond 2009/2016	EUR	200	4.40%	–	200
Variable	Bond 2014/2017	EUR	300	variable	300	300
5.875%	Bond 2009/2017	GBP	400	6.04%	467	544
4.625%	Bond 2009/2017	EUR	300	4.69%	300	300
1.375%	Bond 2014/2017	GBP	250	1.46%	292	340
Variable	Bond 2013/2018	EUR	300	variable	300	300
1.5%	Bond 2012/2018	EUR	1,000	1.51%	999	1,000
1.375%	Bond 2014/2019	EUR	750	1.44%	749	749
Variable	Bond 2013/2020	EUR	300	variable	300	300
1.875%	Bond 2013/2021	EUR	1,000	1.47%	1,016	698
2%	Bond 2012/2022	EUR	1,250	1.93%	1,255	1,256
0.875%	Bond 2016/2023	GBP	250	1.06%	289	–
2.5%	Bond 2014/2024	EUR	500	2.60%	497	496
3.675%	Bond 2013/2025	NOK	1,450	3.70%	159	151
1.5%	Bond 2016/2031	EUR	200	1.58%	198	–
0.875%	Bond 2016/2031	EUR	500	1.01%	491	–
2.37%	Bond 2016/2031	HKD	1,300	2.37%	159	–
3%	Bond 2013/2033	EUR	500	3.15%	491	490
2.875%	Bond 2013/2033	EUR	200	3.09%	198	198
3.25%	Bond 2013/2043	EUR	200	3.27%	199	199
3.89%	U.S. Private Placement Series A 2013/2025	USD	250	3.92%	237	229
4.09%	U.S. Private Placement Series B 2013/2028	USD	700	4.11%	663	641
4.43%	U.S. Private Placement Series C 2013/2034	USD	300	4.45%	284	275
BASF Finance Europe N.V.						
0.0%	Bond 2016/2020	EUR	1,000	0.14%	995	–
0.75%	Bond 2016/2026	EUR	500	0.88%	494	–
Ciba Specialty Chemicals Finance Luxembourg S.A.						
4.875%	Bond 2003/2018	EUR	477	4.88%	461	449
Other bonds					**631**	**672**
Bonds and other liabilities to the capital market					**13,457**	**12,201**
Liabilities to credit institutions					2,855	2,996
Financial indebtedness					**16,312**	**15,197**

On December 14, 2016, BASF SE issued a 2.67% NOK bond effective January 3, 2017, in the amount of NOK 1,600 million with an annual effective interest rate of 2.69% and term of 12 years.

Breakdown of financial indebtedness by currency (million €)

	December 31, 2016	December 31, 2015
Euro	10,897	9,499
U.S. dollar	3,346	3,659
British pound	1,048	884
Argentinian peso	194	167
Norwegian krone	159	151
Hong Kong dollar	159	–
Chinese renminbi	118	261
Brazilian real	113	268
Turkish lira	59	74
Ukrainian hryvnia	55	65
Indian rupee	34	81
Other currencies	130	88
Total	**16,312**	**15,197**

Maturities of financial indebtedness (million €)

	December 31, 2016	December 31, 2015
Following year 1	3,767	4,074
Following year 2	1,887	1,625
Following year 3	2,115	1,865
Following year 4	1,304	2,099
Following year 5	1,049	303
Following year 6 and maturities beyond this year	6,190	5,231
Total	**16,312**	**15,197**

Other bonds

Other bonds consist primarily of industrial revenue and pollution control bonds of the BASF Corporation group that were used to finance investments in the United States. Both the weighted-average interest rate of these bonds as well as their weighted-average effective interest rate amounted to 2.1% in 2016 and 1.5% in 2015. The average residual term amounted to 195 months as of December 31, 2016 (December 31, 2015: 210 months).

Liabilities to credit institutions

In order to finance the natural gas transportation business, a €1,650 million loan was incurred with a 5-year term at an interest rate of 1.08% in 2014.

The weighted average interest rate on loans amounted to 4.5% in 2016 compared with 4.9% in 2015.

Unused credit lines

BASF SE had committed and unused credit lines with variable interest rates amounting to €6,000 million both as of December 31, 2016 and as of December 31, 2015.

Other liabilities (million €)

	December 31, 2016		December 31, 2015	
	Current	Noncurrent	Current	Noncurrent
Derivative instruments with negative fair values	571	78	288	75
Liabilities from finance leases	22	84	22	60
Loans and interest liabilities	199	280	331	265
Miscellaneous liabilities	791	97	732	43
Other liabilities which qualify as financial instruments	**1,583**	**539**	**1,373**	**443**
Advances received on orders	556	–	447	–
Liabilities related to social security	68	95	73	95
Employee liabilities	310	45	218	147
Liabilities from precious metal trading positions	13	–	73	–
Deferred income	66	171	71	163
Miscellaneous liabilities	254	23	265	21
Other liabilities which do not qualify as financial instruments	**1,267**	**334**	**1,147**	**426**
Other liabilities	**2,850**	**873**	**2,520**	**869**

Other liabilities

The increase in **other liabilities** mainly related to higher, current negative fair market values arising from the hedging of combined interest and currency swaps on the U.S. dollar and Brazilian real as well as foreign currency forward contracts for U.S. dollar and Brazilian real as well as euro and U.S. dollar.

For more information on financial risks and derivative instruments, see Note 27 from page 208 onward

For more information on liabilities arising from leasing contracts, see Note 28 from page 214 onward

Secured liabilities (million €)

	Dec. 31, 2016	Dec. 31, 2015
Liabilities to credit institutions	24	26
Other liabilities	69	24
Secured liabilities	**93**	**50**

Liabilities to credit institutions were secured primarily with registered land charges. The increase in secured **other liabilities** compared with December 31, 2015, is primarily attributable to higher collateral for derivative instruments with negative fair values. As in the previous year, there were no secured contingent liabilities in 2016.

25 Other financial obligations

The figures listed below are stated at nominal value:

Million €	December 31, 2016	December 31, 2015
Bills of exchange	9	6
Guarantees	12	49
Warranties	43	87
Collateral granted on behalf of third-party liabilities	1	–
Initiated investment projects	5,394	4,672
Thereof purchase commitments	1,391	1,429
for the purchase of intangible assets	7	10
Payment and loan commitments and other financial obligations	25	80

BASF provides unlimited guarantees, particularly to the Danish government as well as the state-owned company Nordsøfonden, as a precondition for the exploration for and production of hydrocarbons in the Danish concession area by the joint venture Wintershall Noordzee B.V., Rjswijk, the Netherlands. Partially countering the possible 100% liability of BASF arising from these guarantees are the 50% guarantees of the joint-venture partner in favor of BASF. Drawing on these guarantees was not forseeable as of December 31, 2016.

Assets used under long-term leases

Assets used under long-term leases primarily concerned buildings and IT infrastructure.

For more information on liabilities arising from leasing contracts, see Note 28 from page 214 onward

Obligations arising from long-term leases (excluding finance leases) (million €)

2017	360
2018	279
2019	202
2020	151
2021	125
2022 and maturities beyond this year	396
Total	**1,513**

Obligations arising from purchase contracts

Obligations arising from purchase contracts resulted primarily from long-term purchase obligations for raw materials. Firm purchase obligations as of December 31, 2016, were as follows:

Obligations arising from purchase contracts (million €)

2017	7,805
2018	4,499
2019	3,764
2020	2,632
2021	2,540
2022 and maturities beyond this year	8,590
Total	**29,830**

26 Risks from litigation and claims

In the arbitration proceedings initiated in May 2013, Metrogas S.A., Chile, claims damages valued in an amount of €227 million as a result of insufficient gas deliveries against Wintershall Energía S.A., Argentina (WIAR), Total Austral S.A., Argentina, and Pan American Energy LLC, Argentina. The defendants, as sellers, concluded a natural gas supply contract with Metrogas in 1997. WIAR's share of supply in the contract is 37.5%. After the resignation of the chairman of the Arbitral Tribunal in mid-2016, the International Chamber of Commerce (ICC) nominated a new Arbitral Tribunal that will be pursuing the arbitration proceedings during 2017. The defendants are of the opinion that Metrogas does not have any claim for damages

BASF Corporation has potential liability under the Comprehensive Response, Compensation and Liability Act of 1980, as amended, and related state laws for investigation and cleanup at certain sites. The Lower Passaic River Study Area (LPRSA) is one such site comprising the lower 17 miles of the Passaic River in New Jersey. In 2016, the United States Environmental Protection Agency selected a final remedy for the lower 8 miles of the River. BASF Corporation and more than 60 other companies (collectively, the Lower Passaic River Study Area Cooperating Parties Group or CPG) are conducting a remedial investigation / feasibility study (RI/FS) of the entire 17 miles of the River. A decision on the remedy for the upper portion of the River will be made following completion of the RI/FS.

In November 2014, a putative class action lawsuit was filed in the United States District Court of the Southern District of New York against BASF Metals Limited (BML) along with other defendants, alleging violations of antitrust and commodities laws stemming from the price discovery process for platinum and palladium. BML, based in the United Kingdom, and the other defendants are accused of improper conduct concerning the calculation of the market prices of platinum and palladium. Four additional lawsuits were filed between November 2014 and March 2015. The lawsuits were consolidated, and a Second Consolidated Amended Class Action Complaint was eventually filed in July 2015. This Complaint also names as a defendant, among others, BASF Corporation. On September 21, 2015, defendants filed a Joint Motion to Dismiss the Second Consolidated Amended Class Action Complaint, and BML and BASF Corporation filed individual motions to dismiss. In addition, a pro se complaint with similar allegations was filed in the same court in September 2015. Motions to dismiss the pro se complaint have also been filed. Pre-trial discovery is stayed pending resolution of the motions to dismiss. In April 2015, BML received from the European Commission written requests for information regarding platinum and palladium trading BML provided responsive information to the European Commission most recently in the spring of 2016. Since then, BML has not received any requests for further information or follow up.

Furthermore, BASF SE and its affiliated companies are defendants in or parties to a variety of judicial, arbitrational or regulatory proceedings on a recurring basis. To our current knowledge, none of these proceedings will have a material effect on the economic situation of BASF.

27 Supplementary information on financial instruments

27.1 Financial risks

Market risks

Foreign currency risks: Changes in exchange rates could lead to negative changes in the value of financial instruments and adverse changes in future cash flows from planned transactions. Foreign currency risks from financial instruments result from the translation at the closing rate of financial receivables, loans, securities, cash and financial liabilities into the functional currency of the respective Group company. Foreign currency contracts in a variety of currencies are used to hedge foreign exchange risks from primary financial instruments and planned transactions.

The foreign currency risk exposure corresponds to the net amount of the nominal volume of the primary and the derivative financial instruments which are exposed to currency risks. In addition, planned purchase and sales transactions of the respective following year are included, if they fall under the currency risk management system. Long and short positions in the same currency are offset against each other.

The sensitivity analysis is conducted by simulating a 10% appreciation of the respective functional currency against the other currencies. The effect on BASF's income before taxes and minority interests would have been minus €300 million as of December 31, 2016, and minus €340 million as of December 31, 2015. The effect from the items designated under hedge accounting would have increased the equity of the shareholders of BASF SE before income taxes by €24 million as of December 31, 2016 (2015: increase of €52 million). This only refers to transactions in U.S. dollars. The foreign currency risk exposure amounted to €2,113 million as of December 31, 2016 and €2,201 million as of December 31, 2015.

Exposure and sensitivity by currency (million €)

	December 31, 2016		December 31, 2015	
	Exposure	Sensitivity	Exposure	Sensitivity
USD	1,849	(241)	2,057	(260)
Other	264	(35)	144	(28)
Total	**2,113**	**(276)**	**2,201**	**(288)**

Due to the use of options to hedge currency risks, the sensitivity analysis is not a linear function of the assumed changes in exchange rates.

Interest rate risks: Interest rate risks result from changes in prevailing market interest rates, which can cause a change in the fair value of fixed-rate instruments, and changes in the interest payments of variable-rate instruments. To hedge these risks, interest rate swaps and combined interest rate and currency derivatives are used. While these risks are relevant to the financing activities of BASF, they are not of material significance for BASF's operating activities.

The variable interest exposure, which also includes fixed rate bonds set to mature in the following year, amounted to minus €2,447 million (2015: minus €2,786 million). An increase in all relevant interest rates by one percentage point would have raised income before taxes and minority interests by €1 million as of December 31, 2016, and raised income before taxes and minority interests by €7 million as of December 31, 2015. The effect from the items designated under hedge accounting would have increased the equity of the shareholders of BASF SE before income taxes by €16 million as of December 31, 2016 (2015: increase of €20 million).

Carrying amount of nonderivative interest-bearing financial instruments (million €)

	December 31, 2016		December 31, 2015	
	Fixed interest rate	Variable interest rate	Fixed interest rate	Variable interest rate
Loans	208	610	258	744
Securities	105	568	69	58
Financial indebtedness	12,564	3,748	11,114	4,083

Nominal and fair values of interest rate swaps and combined interest and cross-currency swaps (million €)

	December 31, 2016		December 31, 2015	
	Nominal value	Fair value	Nominal value	Fair value
Interest rate swaps	**1,700**	**(27)**	**1,900**	**(31)**
Thereof payer swaps	1,700	(27)	1,900	(31)
Combined interest and cross-currency swaps	**2,745**	**45**	**2,047**	**315**
Thereof fixed rate	2,476	121	1,856	297

Commodity price risks: Some of BASF's divisions are exposed to strong fluctuations in raw material prices. These result primarily from raw materials (for example, naphtha, propylene, benzene, lauric oils, cyclohexane, methanol, natural gas, butadiene, LPG condensate and ammonia) as well as from precious metals. BASF takes the following measures to reduce price risks associated with the purchase of raw materials:

- BASF uses commodity derivatives to hedge the risks from the volatility of raw material prices. These are primarily options and swaps on crude oil, oil products and natural gas.
- In order to secure margins, the Oil & Gas segment used commodity derivatives, primarily swaps on oil products, up to the completion of the asset swap with Gazprom in 2015. Risks to margins arise in volatile markets when purchase and sales contracts are priced differently.
- The Catalysts division enters into both short-term and long-term purchase contracts with precious metal producers. It also buys precious metals on spot markets from a variety of business partners. The price risk from precious metals purchased to be sold on to third parties, or for use in the production of catalysts, is hedged using derivative instruments. This is mainly done using forward contracts which are settled by either entering into offsetting contracts or by delivering the precious metals.
- In the Crop Protection division, the sales prices of products are sometimes coupled to the price of certain agricultural commodities. To hedge the resulting risks, derivatives on agricultural commodities are concluded.

In addition, BASF holds limited unhedged precious metal and oil product positions, which can also include derivatives, for trading on its own account. The value of these positions is exposed to market price volatility and is subject to constant monitoring.

In connection with CO_2 emissions trading, various types of CO_2 certificates are purchased and sold using forward contracts. The goal of these transactions is to benefit from market price differences. These deals are settled by physical delivery. As of December 31, 2016 as well as of December 31, 2015, there were no deals outstanding.

By holding commodity derivatives and precious metal trading positions, BASF is exposed to price risks. The valuation of commodity derivatives and precious metal trading positions at fair value means that adverse changes in market prices could negatively affect the earnings and equity of BASF.

BASF performs value-at-risk analyses for all commodity derivatives and precious metals trading positions. Using the value-at-risk analysis, we continually quantify market risk and forecast the maximum possible loss within a given confidence interval over a defined period. The value-at-risk calculation is based on a confidence interval of 95% and a holding period of one day. The value-at-risk calculation for precious metals is based on a confidence interval of 99%. BASF uses the variance-covariance approach.

BASF uses value at risk as a supplement to other risk management tools. Besides value at risk, BASF sets volume-based limits as well as exposure and stop-loss limits.

Exposure to commodity derivatives (million €)

	December 31, 2016		December 31, 2015	
	Exposure	Value at Risk	Exposure	Value at Risk
Crude oil, oil products and natural gas	6	1	58	2
Precious metals	5	1	23	1
Emission certificates	–	–	10	1
Agricultural commodities	(40)	0	0	0
Total	**(29)**	**2**	**91**	**4**

The exposure corresponds to the net amount of all long and short positions of the respective commodity category.

For more information regarding financial risks and BASF's risk management, see the chapter "Opportunities and risks report" in the Management's Report from page 111 onward

Default and credit risk

Default and credit risks arise when counterparties do not fulfill their contractual obligations. BASF regularly analyzes the creditworthiness of each significant debtor and grants credit limits on the basis of this analysis. Due to the global activities and diversified customer structure of the BASF Group, there is no significant concentration of default risk. The carrying amount of all receivables, loans and interest-bearing securities plus the nominal value of other financial obligations subject to default risk represents the maximum default risk for BASF.

For more information on credit risks, see Note 18 from page 195 onward

Liquidity risks

BASF promptly recognizes any risks from cash flow fluctuations as part of the liquidity planning. BASF has ready access to sufficient liquid funds from our ongoing commercial paper program and confirmed lines of credit from banks.

27.2 Maturity analysis

The interest and principal payments as well as other payments for derivative financial instruments are relevant for the presentation of the maturities of the contractual cash flows from financial liabilities. Future cash flows are not discounted here.

Derivatives are included using their net cash flows, provided they have a negative fair value and therefore represent a liability. Derivatives with positive fair values are assets and are therefore not considered.

Trade accounts payable are generally interest-free and due within one year. Therefore, the carrying amount of trade accounts payable equals the sum of future cash flows.

Maturities of contractual cash flows from financial liabilities as of December 31, 2016 (million €)

	Bonds and other liabilities to the capital market	Liabilities to credit institutions	Liabilities resulting from derivative financial instruments	Miscellaneous liabilities	Total
2017	2,687	1,356	561	1,097	5,701
2018	2,025	128	15	88	2,256
2019	936	1,368	11	47	2,362
2020	1,475	10	13	53	1,551
2021	1,163	5	–	81	1,249
2022 and thereafter	7,269	4	60	305	7,638
Total	**15,555**	**2,871**	**660**	**1,671**	**20,757**

Maturities of contractual cash flows from financial liabilities as of December 31, 2015 (million €)

	Bonds and other liabilities to the capital market	Liabilities to credit institutions	Liabilities resulting from derivative financial instruments	Miscellaneous liabilities	Total
2016	2,979	1,414	339	1,258	5,990
2017	1,738	145	8	47	1,938
2018	2,001	119	13	28	2,161
2019	910	1,351	8	18	2,287
2020	449	3	14	14	480
2021 and thereafter	6,497	8	43	315	6,863
Total	**14,574**	**3,040**	**425**	**1,680**	**19,719**

27.3 Classes and categories of financial instruments

For trade accounts receivable, other receivables and miscellaneous assets, loans, cash and cash equivalents, as well as trade accounts payable and other liabilities, the carrying amount approximates the fair value. Shareholdings which are not traded on an active market and whose fair value could not be reliably determined are recognized at amortized cost and are reported under other financial assets.

The fair value of financial indebtedness is determined on the basis of interbank interest rates. The difference between carrying amounts and fair values results primarily from changes in market interest rates.

Carrying amounts and fair values of financial instruments as of December 31, 2016 (million €)

	Carrying amount	Total carrying amount within scope of application of IFRS 7	Valuation category in accordance with IAS 39[2]	Fair value	Thereof fair value level 1[3]	Thereof fair value level 2[4]	Thereof fair value level 3[5]
Shareholdings[1]	468	468	Afs	–	–	–	–
Receivables from finance leases	34	34	n.a.	34	–	–	–
Accounts receivable, trade	10,952	10,952	LaR	10,952	–	–	–
Derivatives – no hedge accounting	346	346	aFVtPL	346	14	332	–
Derivatives – with hedge accounting	172	172	n.a.	172	–	172	–
Other receivables and other assets[6]	3,736	1,370	LaR	1,370	–	–	–
Securities	672	672	Afs	672	672	–	–
Securities	1	1	Htm	–	–	–	–
Cash and cash equivalents	1,375	1,375	LaR	1,375	1,375	–	–
Total assets	**17,756**	**15,390**		**14,921**	**2,061**	**504**	**–**
Bonds	12,424	12,424	AmC	13,144	–	–	–
Commercial paper	1,033	1,033	AmC	1,033	–	–	–
Liabilities to credit institutions	2,855	2,855	AmC	2,855	–	–	–
Liabilities from finance leases	106	106	n.a.	106	–	–	–
Accounts payable, trade	4,610	4,610	AmC	4,610	–	–	–
Derivatives – no hedge accounting	623	623	aFVtPL	623	0	623	–
Derivatives – with hedge accounting	26	26	n.a.	26	–	26	–
Other liabilities[6]	2,968	1,367	AmC	1,367	–	–	–
Total liabilities	**24,645**	**23,044**		**23,764**	**0**	**649**	**–**

Carrying amounts and fair values of financial instruments as of December 31, 2015 (million €)

	Carrying amount	Total carrying amount within scope of application of IFRS 7	Valuation category in accordance with IAS 39[2]	Fair value	Thereof fair value level 1[3]	Thereof fair value level 2[4]	Thereof fair value level 3[5]
Shareholdings[1]	420	420	Afs	0	0	–	–
Receivables from finance leases	41	41	n.a.	41	–	–	–
Accounts receivable, trade	9,516	9,516	LaR	9,516	–	–	–
Derivatives – no hedge accounting	650	650	aFVtPL	650	42	608	–
Derivatives – with hedge accounting	208	208	n.a.	208	–	208	–
Other receivables and other assets[6]	3,916	1,508	LaR	1,508	–	–	–
Securities	127	127	Afs	127	127	–	–
Securities	–	–	Htm	–	–	–	–
Cash and cash equivalents	2,241	2,241	LaR	2,241	2,241	–	–
Total assets	**17,119**	**14,711**		**14,291**	**2,410**	**816**	**–**
Bonds	10,487	10,487	AmC	11,109	–	–	–
Commercial paper	1,714	1,714	AmC	1,714	–	–	–
Liabilities to credit institutions	2,996	2,996	AmC	2,996	–	–	–
Liabilities from finance leases	82	82	n.a.	82	–	–	–
Accounts payable, trade	4,020	4,020	AmC	4,020	–	–	–
Derivatives – no hedge accounting	334	334	aFVtPL	334	22	312	–
Derivatives – with hedge accounting	29	29	n.a.	29	–	29	–
Other liabilities[6]	2,944	1,371	AmC	1,371	–	–	–
Total liabilities	**22,606**	**21,033**		**21,655**	**22**	**341**	**–**

[1] The difference between carrying amount and fair value results from shareholdings measured at acquisition cost, for which the fair value could not be reliably determined (2016: €468 million; 2015: €420 million).

[2] Afs: available-for-sale (category: available-for-sale financial assets); LaR: loans and receivables (category: loans and receivables); aFVtPL: at-fair-value-through-profit-or-loss (category: financial assets and liabilities at fair value recognized in the income statement); AmC: amortized cost (category: financial liabilities which are not derivatives); Htm: Held-to-maturity (category: financial assets held to maturity); a more detailed description of the categories can be found in Note 1 from page 160 onward.

[3] Determination of the fair value based on quoted, unadjusted prices on active markets

[4] Determination of the fair value based on parameters for which directly or indirectly quoted prices on active markets are available

[5] Determination of the fair value based on parameters for which there is no observable market data

[6] Not including separately shown derivatives as well as receivables and liabilities from finance leases

Offsetting of financial assets and financial liabilities as of December 31, 2016 (million €)

	Amounts which can be offset			Amounts which cannot be offset		
	Gross amount	Amount offset	Net amount	Due to global netting agreements	Relating to financial collateral	Potential net amount
Derivatives with positive fair values	491	(46)	445	(101)	(124)	220
Derivatives with negative fair values	515	(46)	469	(101)	(47)	321

Offsetting of financial assets and financial liabilities as of December 31, 2015 (million €)

	Amounts which can be offset			Amounts which cannot be offset		
	Gross amount	Amount offset	Net amount	Due to global netting agreements	Relating to financial collateral	Potential net amount
Derivatives with positive fair values	710	(22)	688	(134)	(296)	258
Derivatives with negative fair values	348	(22)	326	(134)	(7)	185

The table “Offsetting of financial assets and financial liabilities” shows the extent to which financial assets and financial liabilities are offset in the balance sheet, as well as potential effects from the offsetting of instruments subject to a legally enforceable global netting agreement or similar agreement. For positive fair values of combined interest and cross-currency swaps, the respective counterparties provided cash collaterals in corresponding amounts to the outstanding fair values.

Deviations from the derivatives with positive fair values and derivatives with negative fair values reported in other receivables and other liabilities at the end of 2016 and 2015 arose from derivatives not subject to any netting agreements as well as embedded derivatives and are therefore not included in the table above.

Net gains and losses from financial instruments comprise the results of valuations, the amortization of discounts, the recognition and reversal of impairments, results from the translation of foreign currencies as well as interest, dividends and all other effects on the earnings resulting from financial instruments. The line item financial instruments at fair value through profit or loss contains only those gains and losses from instruments which are not designated as hedging instruments as defined by IAS 39. Net gains or net losses from available-for-sale financial assets contain income and expenses from write-downs/write-ups, interest, dividends and the reclassification of valuation effects from equity on the sale of the securities and shareholdings.

Net gains and losses from financial instruments (million €)

	2016	2015
Loans and receivables	(166)	(31)
Thereof interest result	74	105
Available-for-sale financial assets	22	10
Thereof interest result	2	0
Financial liabilities measured at amortized cost	(124)	(1,127)
Thereof interest result	(390)	(375)
Financial instruments at fair value through profit or loss	(558)	595

The decrease in net losses from financial liabilities measured at amortized cost primarily related to currency translation of financing-related liabilities denominated in foreign currencies, which resulted in a translation gain in 2016 and a translation loss in 2015. Countering this was a net loss in 2016 from financial instruments measured at fair value through profit or loss. This development is primarily due to realized and unrealized results from derivatives to hedge the liabilities previously stated.

The gains and losses from the valuation of securities and shareholdings recognized in the equity of the shareholders of BASF SE are shown in the Statement of income and expense recognized in equity on page 156

27.4 Derivative instruments and hedge accounting

The use of derivative instruments

BASF is exposed to foreign-currency, interest-rate and commodity-price risks during the normal course of business. These risks are hedged through a centrally determined strategy employing derivative instruments. Hedging is only employed for underlying items from the operating business, cash investments, and financing as well as for planned sales, raw material purchases and capital measures. The risks from the underlying transactions and the derivatives are constantly monitored. Where derivatives have a positive market value, BASF is exposed to credit risks from derivative transactions in the event of nonperformance of the other party. To minimize the default risk on derivatives with positive market values, transactions are exclusively conducted with creditworthy banks and partners and are subject to predefined credit limits.

To ensure effective risk management, risk positions are centralized at BASF SE and certain Group companies. The contracting and execution of derivative financial instruments for hedging purposes are conducted according to internal guidelines, and subject to strict control mechanisms.

The fair values of derivative financial instruments are calculated using valuation models which use input parameters observable on the market. Exceptions to this are some commodity derivatives, whose valuation is based directly on market prices.

Fair value of derivative instruments (million €)

	December 31, 2016	December 31, 2015
Foreign currency forward contracts	(163)	56
Foreign currency options	15	53
Foreign currency derivatives	**(148)**	**109**
Thereof designated hedging instruments as defined by IAS 39 (hedge accounting)	3	8
Interest rate swaps	(27)	(31)
Thereof designated hedging instruments as defined by IAS 39 (hedge accounting)	(21)	(27)
Combined interest and cross-currency swaps	45	315
Thereof designated hedging instruments as defined by IAS 39 (hedge accounting)	163	197
Interest derivatives	**18**	**284**
Commodity derivatives	**(1)**	**102**
Thereof designated hedging instruments as defined by IAS 39 (hedge accounting)	1	1
Derivative financial instruments	**(131)**	**495**

Cash flow hedge accounting

Some of the planned purchases of naphtha are hedged using swaps and options on oil and oil products. Some of these hedges were shown in the Consolidated Financial Statements of the BASF Group by means of cash flow hedge accounting, where gains and losses from hedges were initially recognized directly in equity. Gains and losses from hedges are included in cost of sales at the point in time at which the hedged item is recognized in the consolidated statement of income. Unlike the previous year, no hedging instruments were designated in 2016.

In the previous year up to the completion of the asset swap with Gazprom, cash flow hedge accounting was applied in the Natural Gas Trading business sector for crude oil swaps concluded in order to hedge price risks from purchase and sales contracts for natural gas. These contracts had variable prices and the price formula was coupled with the oil price.

Cash flow hedge accounting continued to be applied to a minor extent for natural gas purchases.

The planned transactions and their effect on earnings occur in the year following the balance sheet date. In 2016, effective changes in the fair value of hedging instruments of €1 million (2015: €35 million) was recognized in the equity of the shareholders of BASF SE. In 2016, effective changes in the fair value of hedging instruments of €1 million were derecognized from the equity of shareholders of BASF SE and recognized in other operating income. In 2015, this resulted in an expense of €174 million. The ineffective part in the change in value of the hedge amounted to minus €1 million in 2016 and minus €2 million in 2015. This amount was reported in the income statement in other operating expenses and in the previous year in cost of sales as well as in other operating income and in other operating expenses.

BASF applied cash flow hedge accounting for derivatives used to hedge foreign currency risks from gas purchase and sales contracts to the completion of the asset swap with Gazprom in 2015. In 2015 up to the completion date, the effective change in values of the hedges was minus €150 million, which was recognized in the equity of the shareholders of BASF SE. There were no ineffective parts. The amounts derecognized from the equity of shareholders of BASF SE increased cost of sales by €161 million to the completion date in 2015.

BASF also uses cash flow hedge accounting for some foreign currency derivatives to hedge planned sales denominated in U.S. dollars. The impact on earnings from the underlying transactions will occur in 2017. In 2016, the effective change in values of the hedges was €9 million (2015: minus €23 million), which was recognized in the equity of the shareholders of BASF SE. A total of €11 million (2015: expense of €29 million) was derecognized from the equity of shareholders of BASF SE and was recognized in income from foreign currency and hedging transactions. The hedge was entirely effective.

To hedge foreign currency risk which existed for a part of the US dollar-denominated purchase price for the acquisition of Chemetall, BASF used options and foreign currency forward contracts in 2016. These were designated as hedging instruments and led to effective changes in the amount of €97 million, which was recognized in the equity of the shareholders of BASF SE. Upon completion of the transaction in December 2016, this amount was derecognized from the equity of the shareholders of BASF SE reducing the purchase price accordingly and along with that the resulting goodwill arising from the transaction. The ineffective part of the fair value changes of the hedging instruments amounted to minus €10 million and was recognized in other operating expenses.

The interest rate risk of the floating rate notes issued by BASF SE in 2014 (€300 million variable-rate bond 2014/2017) as well as the floating rate notes issued in 2013 were hedged using interest rate swaps. The bonds and the interest rate swaps were designated in a hedging relationship. In 2016, the effective changes in the fair value of the hedging instruments amounting to €6 million (2015: €3 million) were recognized in the equity of the shareholders of BASF SE. There were no ineffective parts.

Furthermore, BASF SE's fixed-rate U.S. private placement of $1.25 billion, issued in 2013, was converted into euros using currency swaps. This hedge was designated as a cash flow hedge. The hedge was entirely effective. In 2016, this resulted in changes in fair value of minus €33 million, which were recognized in the equity of the shareholders of BASF SE (2015: €157 million). In 2016, €38 million was derecognized from other comprehensive income and recorded as income in the financial result (2015: €119 million income in financial result).

28 Leases

Leased assets

Property, plant and equipment include those assets which are considered to be economically owned through a finance lease. They primarily concern the following items:

Leased assets (million €)

	December 31, 2016		December 31, 2015	
	Acquisition cost	Net book value	Acquisition cost	Net book value
Land, land rights and buildings	46	26	45	25
Machinery and technical equipment	136	43	117	31
Miscellaneous equipment and fixtures	59	25	44	13
Total	**241**	**94**	**206**	**69**

Liabilities from finance leases (million €)

	December 31, 2016			December 31, 2015		
	Minimum lease payments	Interest portion	Leasing liability	Minimum lease payments	Interest portion	Leasing liability
Following year 1	28	5	23	28	5	23
Following year 2	30	4	26	21	5	16
Following year 3	19	4	15	16	3	13
Following year 4	17	3	14	11	3	8
Following year 5	12	3	9	10	3	7
More than 5 years	35	14	21	31	13	18
Total	**141**	**33**	**108**	**117**	**32**	**85**

In the current business year and in the previous year, no additional lease payments exceeding minimum lease payments due to contractual conditions for finance leases were recognized in the income statement. In 2016 and in the previous year, leasing liabilities were not offset by any significant future minimum lease payments from subleases.

In addition, BASF is a lessee under operating lease contracts. The lease commitments totaling €1,513 million in 2016 (2015: €1,554 million) are due in the following years:

Commitments from operating lease contracts (million €)

	Nominal value of the future minimum lease payments	
	Dec. 31, 2016	Dec. 31, 2015
Less than 1 year	360	413
1-5 years	757	784
More than 5 years	396	357
Total	**1,513**	**1,554**

Future minimum lease payments from subleasing contracts based on existing agreements amounted to €12 million in 2016 (2015: €11 million).

In 2016, minimum lease payments of €446 million (2015: €474 million) were included in income from operations. In 2016, conditional lease payments of €1 million (2015: €1 million) were also included in income from operations. Furthermore, sublease payments of €4 million were included in income from operations in 2016 (2015: €4 million).

BASF as lessor

BASF acts as a lessor for finance leases to a minor extent only. Receivables on finance leases were €33 million in 2016 (2015: €41 million).

In 2016, claims arising from operating leases amounted to €89 million (2015: €83 million).

Future minimum lease payments to BASF from operating lease contracts (million €)

	Nominal value of the future minimum lease payments	
	Dec. 31, 2016	Dec. 31, 2015
Less than 1 year	17	17
1-5 years	49	43
More than 5 years	23	23
Total	**89**	**83**

Other explanatory notes

29 Statement of cash flows and capital structure management

Statement of cash flows

Cash provided by operating activities contained the following payments:

Million €	2016	2015
Income tax payments	1,495	1,550
Interest payments	459	458
Dividends received	225	219

Interest payments comprised interest payments received of €156 million (2015: €194 million) and interest paid of €615 million (2015: €652 million).

Cash provided by operating activities also included €262 million in benefits paid (2015: €248 million), which are covered by a contractual trust arrangement.

Cash used in investing activities included €2,828 million in payments made for acquisitions (2015: €215 million), especially for the acquisition of the global surface treatment provider Chemetall from Albemarle Corporation, Charlotte, North Carolina. In the previous year, payments had especially been made for the acquisition of a 66% share in a company into which TODA KOGYO CORP., Hiroshima, Japan, contributed its business with cathode materials for lithium-ion batteries, patents and production capacities.

Payments of €664 million were received for divestitures (2015: €651 million) primarily from the sale of the industrial coatings business to the AkzoNobel Group and from the sale of the global polyolefin catalysts business to W. R. Grace & Co., Columbia, Maryland. In the previous year, payments had been received from the sale of portions of the pharmaceutical ingredients and services business to Siegfried Holding AG, Zofingen, Switzerland, as well as the sale of the 50% share in Styrolution Holding GmbH, Frankfurt am Main, Germany, to the INEOS Group completed in 2014.

The payments made for property, plant and equipment, and intangible assets in the amount of €4,145 million included investments for 2016, to the extent that they already had an effect on cash.

Cash and cash equivalents were not subject to any utilization restrictions, as in the previous year.

For more information on cash flow from acquisitions and divestitures, see Note 2.4 from page 174 onward

Capital structure management

The aim of capital structure management is to maintain the financial flexibility needed to further develop BASF's business portfolio and take advantage of strategic opportunities. The objectives of the Company's financing policy are to secure solvency, limit financial risks and optimize the cost of capital.

Capital structure management focuses on meeting the requirements needed to ensure unrestricted access to capital markets and a solid A rating. BASF's capital structure is managed using selected financial ratios, such as dynamic debt ratios, as part of the company's financial planning.

As a part of risk management, activities in countries with transfer restrictions are continuously monitored. This includes, for example, regular analysis of the macroeconomic and legal environment, shareholders' equity and the business models of the operating units. The chief aim is the reduction of counterparty, transfer and currency risks for the BASF Group.

The equity of the BASF Group as reported in the balance sheet amounted to €32,568 million as of December 31, 2016 (December 31, 2015: €31,545 million); the equity ratio was 42.6% on December 31, 2016 (December 31, 2015: 44.5%).

BASF prefers to access external financing on the capital markets. A commercial paper program is used for short-term financing, while corporate bonds are used for financing in the medium and long term. These are issued in euros and other currencies with different maturities. The goal is to create a balanced maturity profile, achieve a diverse range of investors and optimize our debt capital financing conditions.

Currently, BASF has the following ratings:

Dec. 31, 2016	Noncurrent financial indebtedness	Current financial indebtedness	Outlook
Moody's	A1	P-1	stable
Standard & Poor's	A	A-1	stable
Scope	A	S-1	stable

Dec. 31, 2015	Noncurrent financial indebtedness	Current financial indebtedness	Outlook
Moody's	A1	P-1	stable
Standard & Poor's	A+	A-1	negative

Rating agency Moody's last confirmed their rating of "A1/P-1/outlook stable" on November 28, 2016. Standard & Poor's adjusted their BASF rating from "A+/A-1/outlook negative" to "A/A-1/outlook stable" on March 14, 2016, and confirmed it most recently on August 10, 2016. This adjustment was largely based on the weaker market environment, especially for basic and agricultural chemicals, limited overall volumes growth, and the considerable drop in the price of crude oil. Uncertainty with regard to economic development in China was taken into consideration, as well. Rating agency Scope has also been evaluating BASF's creditworthiness since September 2016. They rated BASF at "A/S-1/outlook stable."

BASF continues to strive for at least a solid A rating, which ensures unrestricted access to financial and capital markets.

For more information on financing policy and the Statement of Cash Flows, see the Management's Report from page 57 onward

30 Share-price-based compensation program and BASF incentive share program

Share-price-based compensation program

In 2016, BASF continued its share-price-based compensation program known as the long-term incentive (LTI) program for senior executives of the BASF Group. This program has been in place since 1999. Approximately 1,200 senior executives, including the Board of Executive Directors, are currently entitled to participate in this program. This program provides for the granting of virtual options, which are settled in cash when exercised.

Participation in the LTI program is voluntary. In order to take part in the program, a participant must make a personal investment: A participant must hold BASF shares amounting to 10% to 30% of his or her individual variable compensation for a two-year period from the granting of the option (holding period). The number of shares to be held is determined by the amount of variable compensation and the volume-weighted average market price for BASF shares on the first business day after the Annual Shareholders' Meeting, which was €69.93 on May 2, 2016.

The participant receives four option rights per invested share. Each option consists of two parts, right A and right B, which may be exercised if defined thresholds have been met: The threshold of right A is met if the price of the BASF share has increased by more than 30% in comparison with the base price (absolute threshold). The value of right A will be the difference between the market price of BASF shares on the exercise date and the base price; it is limited to 100% of the base price. Right B may be exercised if the cumulative percentage performance of BASF shares exceeds (relative threshold) the percentage performance of the MSCI World Chemicals Index℠ (MSCI Chemicals). The value of right B will be the base price of the option multiplied by twice the percentage outperformance of BASF shares compared with the MSCI Chemicals Index on the exercise date. It is limited to the closing price on the date of exercise minus the computed nominal value of BASF shares. Beginning with the 2013 LTI program, right B is only valuable if the price of BASF shares at least corresponds with the base price. The options of the LTI program 2016 were granted on July 1, 2016, and may be exercised following a two-year vesting period, between July 1, 2018, and June 30, 2024. During the exercise period, there are certain times (closed periods) during which the options may not be exercised. Each option can only be exercised in full. This means that one of the performance targets must be surpassed. If the other performance target is

not surpassed and the option is exercised, the other option right lapses. A participant's maximum gain from exercising an option is limited to five times the original individual investment starting with the 2013 LTI program. The maximum gain from exercising an option is limited to ten times the original individual investment for programs from previous years. Option rights are nontransferable and are forfeited if the option holders no longer work for BASF or have sold part of their individual investment before the expiry of the two-year vesting period. They remain valid in the case of retirement. For the members of the Board of Executive Directors, the long-term orientation of the program is significantly strengthened compared with the conditions applying to the other participants. The members of the Board of Executive Directors are required to participate in the LTI program with at least 10% of their gross bonus. In view of this binding personal investment (in the form of BASF shares), an extended holding period of four years applies. Members of the Board of Executive Directors may only exercise their options at least four years after they have been granted (vesting period).

The 2009 to 2015 programs were structured in a similar way to the LTI program 2016.

The models used in the valuation of the option plans are based on the arbitrage-free valuation model according to Black-Scholes. The fair values of the options are determined using the binomial model.

Fair value of options and parameters used as of December 31, 2016

		LTI program of the year	
		2016	2015
Fair value	€	46.74	38.67
Dividend yield	%	3.28	3.28
Risk-free interest rate	%	(0.11)	(0.26)
Volatility BASF share	%	25.03	24.69
Volatility MSCI Chemicals	%	15.73	15.07
Correlation BASF share price: MSCI Chemicals	%	73.90	73.66

The stated fair values and the valuation parameters relate to the LTI programs 2016 and 2015. The fair value calculation was based on the assumption that options will be exercised in a manner dependent on their potential gains. For the programs from preceding years, corresponding fair values were computed and valuation parameters were used.

Volatility was determined on the basis of the monthly closing prices over a historical period corresponding to the remaining term of the options.

The number of options granted amounted to 1,710,404 in 2016 (2015: 1,807,532).

As a result of a resolution by the Board of Executive Directors in 2002 to settle options in cash, options outstanding from the LTI programs 2009 to 2016 were valued with the fair value as of December 31, 2016. A proportionate provision is recorded for programs in the vesting period. The LTI provision increased from €222 million as of December 31, 2015, to €464 million as of December 31, 2016, due to higher fair values of the outstanding option rights as well as due to a higher number of outstanding options. The utilization of provisions amounted to €25 million in 2016 (2015: €34 million). Expenses arising from additions to the provision amounted to €267 million in 2016. The previous year had included an expense of €49 million.

The total intrinsic value of the exercisable options amounted to €167 million as of December 31, 2016 and €34 million as of December 31, 2015.

BASF incentive share program

All employees are entitled to participate in the "*plus*" incentive share program, with the exception of those entitled to participate in the LTI program. The "*plus*" incentive share program was introduced in 1999 and is currently offered in Germany, other European countries and Mexico. Each participant must make an individual investment in BASF shares from his or her variable compensation. For every ten BASF shares purchased in the program, a participant receives one BASF share at no cost after one, three, five, seven and ten years of holding the BASF shares. As a rule, the first and second block of ten shares entitle the participant to receive one BASF share at no extra cost in each of the next ten years.

The right to receive free BASF shares lapses if a participant sells the individual investment in BASF shares, if the participant stops working for the Company or one year after retirement. The number of free shares to be granted has developed as follows:

Number of free shares to be granted (shares)

	2016	2015
As of January 1	**2,829,521**	**2,905,048**
Newly acquired entitlements	637,610	533,825
Bonus shares issued	(519,984)	(509,168)
Lapsed entitlements	(97,424)	(100,184)
As of December 31	**2,849,723**	**2,829,521**

The free shares to be provided by the Company are measured at the fair value on the grant date. Fair value is determined on the basis of the stock price of BASF shares, taking into account the present value of dividends, which are not paid during the term of the program. The weighted-average fair value on the grant date amounted to €67.90 for the 2016 program, and €71.55 for the 2015 program.

The fair value of the free shares to be granted is recognized as an expense with a corresponding increase in capital surplus over the term of the program.

Personnel expenses of €28 million were recorded in 2016 for the BASF incentive share program "*plus*" and €27 million in 2015.

31 Compensation for the Board of Executive Directors and Supervisory Board

Million €	2016	2015
Performance-related and not performance-related cash compensation for the Board of Executive Directors	17.4	18.4
Fair value of options granted to the Board of Executive Directors in the fiscal year as of grant date	4.0	4.3
Total compensation for the Board of Executive Directors[1]	**21.4**	**22.7**
Service costs for members of the Board of Executive Directors	3.3	3.8
Compensation for the Supervisory Board	3.0	3.0
Total compensation for former members of the Board of Executive Directors and their surviving dependents	15.9	12.1
Pension provisions for former members of the Board of Executive Directors and their surviving dependents	150.4	144.7
Guarantees assumed for members of the Board of Executive Directors and the Supervisory Board	–	–

[1] The compensation for Dr. Andreas Kreimeyer, who left the Board of Executive Directors on April 30, 2015, is included in the 2015 figures.

Performance-related compensation for the Board of Executive Directors is based on the return on assets adjusted for special items, as well as the performance of the entire Board. Return on assets corresponds to income before taxes and minority interests plus interest expenses as a percentage of average assets.

The members of the Board of Executive Directors were granted 163,764 options under the long-term incentive (LTI) program in 2016.

The market valuation of the options of active and former members of the Board resulted in expenses of €30.7 million in 2016. In 2015, the market valuation of the options resulted in income of €6.6 million.

For more information on the compensation of members of the Board of Executive Directors, see the Compensation Report from page 138 onward

For more information on the members of the Supervisory Board and Board of Executive Directors, including their memberships on other boards, see page 136 onward

32 Related-party transactions

A related party is a natural person or legal entity which can exert influence on the BASF Group or over which the BASF Group exercises control or joint control or a significant influence. In particular, this comprises nonconsolidated subsidiaries, joint ventures and associated companies.

The following tables show the volume of business with related parties that are included at amortized cost or accounted for using the equity method.

Sales to related parties (million €)

	2016	2015
Nonconsolidated subsidiaries	395	389
Joint ventures	317	378
Associated companies	245	370

Trade accounts receivable from / trade accounts payable to related parties (million €)

	Accounts receivable, trade		Accounts payable, trade	
	December 31, 2016	December 31, 2015	December 31, 2016	December 31, 2015
Nonconsolidated subsidiaries	135	139	73	60
Joint ventures	76	71	92	54
Associated companies	55	34	44	44

Other receivables and liabilities with related parties (million €)

	Other receivables		Other liabilities	
	December 31, 2016	December 31, 2015	December 31, 2016	December 31, 2015
Nonconsolidated subsidiaries	176	161	178	180
Joint ventures	196	229	97	120
Associated companies	390	517	258	203

Sales and trade accounts receivable from and trade accounts payable to related parties mainly included business with own products and merchandise, agency and licensing businesses, and other operating business.

Other receivables and liabilities primarily arose from financing activities, outstanding dividend payments, profit-and-loss transfer agreements, and other finance-related and operating activities and events.

The decline of €127 million in other receivables from associated companies in 2016 was largely due to the repayment of long-term loans.

The outstanding balances toward related parties were generally not secured and settled in cash. As in the previous year, there were no significant valuation allowances in 2016 for trade accounts receivable from related parties. The balance of valuation allowances for other receivables from nonconsolidated subsidiaries rose from €39 million as of December 31, 2015, to €79 million as of December 31, 2016. Thereof €26 million in 2016 was recognized as an expense (2015: €17 million).

There were obligations from guarantees and other financial obligations at BASF in favor of nonconsolidated subsidiaries in the amount of €3 million on December 31, 2016 (December 31, 2015: €45 million) and in favor of associated companies in the amount of €21 million in 2016 (December 31, 2015: €37 million).

Obligations arising from purchase contracts with associated companies amounted to €26 million as of December 31, 2016 and €29 million as of December 31, 2015.

Effective December 31, 2016, the present value of the outstanding minimum rental payments for an office building including parking area payable by BASF SE to BASF Pensionskasse VVaG for the nonterminable basic rental period to 2029 amounted to €57 million.

There were no reportable related party transactions with members of the Board of Executive Directors or the Supervisory Board and their related parties in 2016.

For more information on subsidiaries, joint ventures and associated companies, see the List of Shares Held of the BASF Group 2016 on page 178

For more information on other financial obligations in favor of joint ventures, see Note 25: Other financial obligations from page 206 onward

For more information on defined benefit plans that share risks between the Group companies (including nonconsolidated subsidiaries), see Note 22: Provisions for pensions and similar obligations from page 198 onward

For more information on the Board of Executive Directors and the Supervisory Board, see Management and Supervisory Boards and Compensation Report from page 136 onward

33 Services provided by the external auditor

BASF Group companies have used the following services from KPMG:

Million €	2016	2015
Annual audit	17.5	21.0
Thereof domestic	6.4	7.2
Audit-related services	0.6	0.4
Thereof domestic	0.3	0.2
Tax consultation services	0.1	0.1
Thereof domestic	–	–
Other services	0.3	0.7
Thereof domestic	0.3	0.7
Total	**18.5**	**22.2**

The line item annual audit related to expenses for the audit of the Consolidated Financial Statements of the BASF Group as well as the legally required financial statements of BASF SE and its consolidated subsidiary companies and joint operations.

34 Declaration of Conformity with the German Corporate Governance Code

Declaration pursuant to Section 161 AktG (Stock Corporation Act)

The annual Declaration of Conformity with the German Governance Code according to Section 161 of the German Stock Corporation Act was signed by the Board of Executive Directors and the Supervisory Board of BASF SE in December 2016, and is published online.

For more information, see basf.com/en/governance

35 Nonadjusting events after the reporting period

Effective January 1, 2017, BASF took over the western European Construction Chemicals business from the Henkel Group with the trade names Thomsit® and Ceresit® for floor and tile-laying systems as well as sealants for professional users. This will strengthen BASF's portfolio in the construction chemicals business of the PCI Group, which belongs to the Construction Chemicals division. The initial accounting for the business combination will take place within a measurement period of one year.

On February 7, 2017, BASF acquired the private company Rolic AG headquartered in Allschwil, Switzerland. The company develops and sells ready-to-use formulations and functional film products for the display and security industry against forgery as well as barrier materials and films. With the acquisition, BASF broadens its technology know-how and product portfolio of display materials. The largest part of the activities will be integrated in the Dispersions Pigments division and a smaller part in the Coatings division.

5

To Our Shareholders 5
Management's Report 17
Corporate Governance 125
Consolidated Financial Statements 151

Supplementary Information on the Oil & Gas Segment

Overviews 231

Supplementary information on the Oil & Gas segment 223

Supplementary Information on the Oil & Gas Segment (Unaudited)

The following provides supplementary information on the Exploration & Production business sector of the Oil & Gas segment. In the absence of detailed disclosure rules in this area under the International Financial Reporting Standards (IFRS), the presentation is based on the FASB standard Extractive Activities – Oil and Gas (Topic 932), which is a further development of SFAS 69. In the following sections, the determination of the amounts complies with the metrics set out by IFRS that underlie the BASF Group Consolidated Financial Statements: Operating income from oil and gas-producing activities; Period expenditures for acquisition, exploration and development of oil and gas deposits; Capitalized costs relating to oil and gas producing activities; and Capitalized exploration drilling: suspended well costs. The definition of companies accounted for using the equity method also follows the approach of the Consolidated Financial Statements. These changes were introduced in 2016 to improve comparability between the Supplementary Information on the Oil & Gas Segment and the BASF Group Consolidated Financial Statements. The amounts for 2015 have been restated accordingly. The cash flow from the Yuzhno Russkoye project is shown in the fully consolidated company responsible for marketing the gas.

According to Topic 932, the current economic conditions were considered in the determination of oil and gas reserves as well as the standardized calculation of discounted net cash flows. The prices used are valued at the average price calculated from the prices on the first day of the month for the past 12 months. Expected proven reserves and the resulting future net cash flows can vary significantly from the current estimates. Furthermore, the realized prices and costs and the actual cash flows resulting therefrom may differ from the estimate in amount and distribution over time. Therefore, the values presented should not be interpreted as a prediction of future cash flows, nor in their sum as the current value of the company.

Furthermore, different prices, costs and volume estimates are used for operative decisions as well as for the preparation of the Consolidated Financial Statements. Therefore, the reserves and net cash flows shown are not comparable with statements and values in the Consolidated Financial Statements.

According to the requirements in Topic 932, regions with more than a 15% share of total reserves must be shown separately. Therefore, the regions in the supplementary information differ from those presented in the Group Consolidated Financial Statements. Aside from the countries Germany and Russia, this includes the regions: Rest of Europe; North Africa/ Middle East; as well as South America.

The regions include the following countries with operating activities:

Region	Exploration & Production	Exploration
Rest of Europe	United Kingdom, the Netherlands, Norway	Denmark
North Africa / Middle East	Libya	Abu Dhabi
South America	Argentina	

Oil and gas reserves

Proven oil and gas reserves are the volumes of crude oil, natural gas and condensate that, according to the geological, engineering and economic conditions prevailing at the balance sheet date, can be produced in future years. Accordingly, reserve estimates based on this data could be materially different from the volumes that are ultimately recovered. To reduce uncertainties, BASF works together with independent, internationally recognized reserve auditors to perform recurring reserves audits of its major crude oil and natural gas fields.

The tables on the following pages show the company's estimated proven and proven developed reserves as of December 31, 2015, and 2016, as well as changes attributable to production or other factors.

Oil 2016

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Proven developed and undeveloped oil reserves as of January 1, in million barrels (MMbbl)	**42**	**144**	**193**	**96**	**9**	**484**	**96**
Revisions and other changes	–	5	6	(7)	–	4	(3)
Extensions and discoveries	–	–	–	–	–	–	–
Purchase/sale of reserves	–	–	–	–	–	–	–
Production	6	22	15	3	2	48	4
Proven reserves as of December 31	**36**	**127**	**184**	**86**	**7**	**440**	**89**
Thereof equity-accounted companies	–	1	6	82	–	89	89
Proven developed reserves as of December 31	**32**	**60**	**144**	**77**	**7**	**320**	**80**
Thereof equity-accounted companies	–	–	6	74	–	80	80

Gas 2016

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Developed and undeveloped gas reserves as of January 1, in million barrels of oil equivalent (MMBOE)	**24**	**118**	**940**	**11**	**167**	**1,260**	**572**
Revisions and other changes	3	8	19	(2)	11	39	6
Extensions and discoveries	–	–	–	–	–	–	–
Purchase/sale of reserves	–	–	–	–	–	–	–
Production	4	15	74	–	24	117	58
Proven reserves as of December 31	**23**	**111**	**885**	**9**	**154**	**1,182**	**520**
Thereof equity-accounted companies	–	6	505	9	–	520	520
Proven developed reserves as of December 31	**23**	**50**	**628**	**8**	**147**	**856**	**360**
Thereof equity-accounted companies	–	6	346	8	–	360	360

Oil 2015

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Proven developed and undeveloped oil reserves as of January 1, in million barrels (MMbbl)	**53**	**78**	**183**	**103**	**10**	**427**	**102**
Revisions and other changes	(5)	17	23	(3)	1	33	(3)
Extensions and discoveries	–	65	–	–	–	65	1
Purchase/sale of reserves	–	–	–	–	–	–	–
Production	6	16	13	4	2	41	4
Proven reserves as of December 31	**42**	**144**	**193**	**96**	**9**	**484**	**96**
Thereof equity-accounted companies	–	1	4	91	–	96	96
Proven developed reserves as of December 31	**36**	**62**	**141**	**83**	**8**	**330**	**83**
Thereof equity-accounted companies	–	–	4	79	–	83	83

Gas 2015

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Developed and undeveloped gas reserves as of January 1, in million barrels of oil equivalent (MMBOE)	**27**	**119**	**966**	**11**	**158**	**1,281**	**629**
Revisions and other changes	1	18	43	–	31	93	12
Extensions and discoveries	–	6	–	–	–	6	–
Purchase/sale of reserves	–	(8)	–	–	–	(8)	(8)
Production	4	17	69	–	22	112	61
Proven reserves as of December 31	**24**	**118**	**940**	**11**	**167**	**1,260**	**572**
Thereof equity-accounted companies	–	9	552	11	–	572	572
Proven developed reserves as of December 31	**18**	**49**	**669**	**9**	**127**	**872**	**416**
Thereof equity-accounted companies	–	9	398	9	–	416	416

Operating income from oil and gas-producing activities

Operating income represents only those revenues and expenses directly associated with oil, condensate and gas production. This partially results in significant differences to the figures shown for the Oil & Gas segment. Significant deviations exist in sales revenues that do not include sales from merchandise and services as well as the financing and corporate overhead costs not included there. Income taxes were computed using currently applicable local income tax rates.

2016 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Sales crude oil (including condensate and LPG)	202	680	74	56	94	1,106
Sales natural gas	75	291	166	–	413	945
Local duties (royalties, export, etc.)	40	–	–	–	91	131
Net revenue (less duties)	**237**	**971**	**240**	**56**	**416**	**1,920**
Production costs	108	264	33	13	145	563
Exploration expenses and technology	5	81	9	20	15	130
Depreciation, amortization and impairment	109	692	14	12	137	964
Other	4	43	18	6	(120)	(49)
Operating income before taxes	**11**	**(109)**	**166**	**5**	**239**	**312**
Income taxes	3	3	25	23	85	139
Operating income after taxes	**8**	**(112)**	**141**	**(18)**	**154**	**173**
Net income of equity-accounted companies	**–**	**(63)**	**77**	**(40)**	**–**	**(26)**

2015 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Sales crude oil (including condensate and LPG)	250	573	105	86	115	1,129
Sales natural gas	100	574	387	–	322	1,383
Local duties (royalties, export, etc.)	55	2	–	–	87	144
Net revenue (less duties)	**295**	**1,145**	**492**	**86**	**350**	**2,368**
Production costs	122	338	23	18	127	628
Exploration expenses and technology	8	192	1	37	16	254
Depreciation, amortization and impairment	99	984	13	107	72	1,275
Other	10	(313)	16	3	(98)	(382)
Operating income before taxes	**56**	**(56)**	**439**	**(79)**	**233**	**593**
Income taxes	16	17	79	27	83	222
Operating income after taxes	**40**	**(73)**	**360**	**(106)**	**150**	**371**
Net income of equity-accounted companies	**–**	**(3)**	**89**	**5**	**–**	**91**

Period expenditures for acquisition, exploration and development of oil and gas deposits

Period expenditures include all amounts incurred in connection with the acquisition, exploration or development of oil and gas deposits, regardless of whether these were capitalized or expensed.

2016 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Acquisition expenditures	–	–	–	–	8	8
For proven reserves	–	–	–	–	–	–
For unproven reserves	–	–	–	–	8	8
Exploration and technology expenditures	15	111	9	29	20	184
Development expenditures	66	629	73	1	194	963
Total expenditures	**81**	**740**	**82**	**30**	**222**	**1,155**
Total expenditures at equity-accounted companies	**–**	**87**	**19**	**–**	**–**	**106**

2015 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Acquisition expenditures	–	41	–	–	–	41
For proven reserves	–	41	–	–	–	41
For unproven reserves	–	–	–	–	–	–
Exploration and technology expenditures	12	190	1	54	79	336
Development expenditures	59	735	115	–	330	1,239
Total expenditures	**71**	**966**	**116**	**54**	**409**	**1,616**
Total expenditures at equity-accounted companies	**–**	**217**	**822**	**8**	**–**	**1,047**

Capitalized costs relating to oil and gas producing activities

Capitalized costs represent total expenditures on proven and unproven oil and gas deposits including the related accumulated depreciation and amortization.

2016 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Proven oil and gas reserves	978	6,023	1,577	156	1,733	10,467
Unproven oil and gas reserves	45	525	–	126	297	993
Equipment and miscellaneous	858	47	–	–	–	905
Total gross assets	**1,881**	**6,595**	**1,577**	**282**	**2,030**	**12,365**
Accumulated depreciation, amortization and impairments	(1,335)	(2,429)	(364)	(209)	(1,044)	(5,381)
Total net assets	**546**	**4,166**	**1,213**	**73**	**986**	**6,984**
Investments in equity-accounted companies	**–**	**228**	**1,197**	**93**	**–**	**1,518**

2015 (million €)

Fully consolidated companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group
Proven oil and gas reserves	939	5,285	1,149	152	1,556	9,081
Unproven oil and gas reserves	52	435	–	114	267	868
Equipment and miscellaneous	800	74	–	–	–	874
Total gross assets	**1,791**	**5,794**	**1,149**	**266**	**1,823**	**10,823**
Accumulated depreciation, amortization and impairments	(1,280)	(1,646)	(265)	(190)	(910)	(4,291)
Total net assets	**511**	**4,148**	**884**	**76**	**913**	**6,532**
Investments in equity-accounted companies	**–**	**291**	**1,115**	**133**	**–**	**1,539**

Capitalized exploration drilling: Suspended well costs

Exploratory drilling costs are capitalized until the drilling of the well is complete. If hydrocarbon resources are found whose commercial development is likely, the costs continue to be capitalized as construction in progress, subject to further appraisal activity that may include the drilling of further wells. Management evaluates all such capitalized costs at least once a year from both a technical and economic perspective to confirm the continued intent to develop or otherwise extract value from the discovery. If this is no longer the case, the relevant costs are written off. If proven reserves of oil or natural gas are determined and development is sanctioned, however, the relevant expenses are transferred within property, plant and equipment to machinery and technical equipment. Impairments for unsuccessful exploration wells are recognized in exploration expenses.

The following table indicates the changes to the capitalized costs of exploration drilling. The determination of the amounts as well as the activities included were adjusted to the BASF Group Consolidated Financial Statements in 2016. The amounts for 2015 were accordingly restated.

The last row shows the year-end value for equity-accounted companies.

Capitalized exploration drilling (million €)

Fully consolidated companies	2016	2015
As of January 1	**423**	**479**
Additions to exploration drilling of the year	103	310
Capitalized exploration drilling charged to expense	(49)	(136)
Reclassification of successful exploration drilling	(75)	(105)
Changes in scope of consolidation	–	(150)
Translation effect	9	25
As of December 31	**411**	**423**
Equity-accounted companies as of December 31	**212**	**181**

The following table provides an overview of the capitalization period, amounts capitalized for exploration drilling, and the number of suspended exploration wells.

Capitalized exploration drilling (million €)

Fully consolidated companies	2016	2015
Wells for which drilling is not complete	**37**	**20**
Wells capitalized less than one year	71	152
Wells capitalized more than one year	303	251
Total	**411**	**423**
Number of exploration wells in construction in progress	**36**	**45**
Number of exploration wells in construction in progress at equity-accounted companies as of December 31	**27**	**29**

Standardized measure of discounted future net cash flows relating to proven oil and gas reserves

The following information was determined based on the regulations on Extractive Activities – Oil and Gas (Topic 932) published by FASB. Based on this, a standardized measure of discounted future net cash flows with the relevant revenues, costs and income tax rates is to be made. The proven reserves are valued at the average price calculated from the prices on the first day of the month for the past business year. The values thus determined are discounted at a 10% annual discount rate.

Standardized measure of discounted future net cash flows 2016 (million €)

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Future revenues	1,365	6,975	5,732	3,478	3,428	20,978	3,610
Future production/development costs	1,549	5,264	1,633	1,378	1,203	11,027	1,582
Future income taxes	(120)	164	690	1,937	570	3,241	1,933
Future net cash flows, not discounted	**(64)**	**1,547**	**3,409**	**163**	**1,655**	**6,710**	**95**
10% discount rate	(132)	527	1,278	59	508	2,240	13
Standardized measure of discounted future net cash flows	**68**	**1,020**	**2,131**	**104**	**1,147**	**4,470**	**82**
Thereof equity-accounted companies	–	(42)	25	99	–	82	82

Standardized measure of discounted future net cash flows 2015 (million €)

Consolidated and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
Future revenues	1,861	10,154	7,992	4,245	4,051	28,303	4,526
Future production/development costs	1,761	6,593	1,766	1,304	1,359	12,783	1,618
Future income taxes	(60)	1,413	1,092	2,494	702	5,641	2,458
Future net cash flows, not discounted	**160**	**2,148**	**5,134**	**447**	**1,990**	**9,879**	**450**
10% discount rate	(49)	743	2,109	143	639	3,585	104
Standardized measure of discounted future net cash flows	**209**	**1,405**	**3,025**	**304**	**1,351**	**6,294**	**346**
Thereof equity-accounted companies	–	28	53	265	–	346	346

Summary of changes in standardized measure of discounted future net cash flows 2016 (million €)

Consolidated companies and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
As of January 1	**209**	**1,405**	**3,025**	**304**	**1,351**	**6,294**	**346**
Sales of oil and gas produced, net of production costs in the current period	(130)	(747)	(380)	(97)	(280)	(1,634)	(105)
Net changes in prices and production costs at balance sheet date	(186)	(1,416)	(1,292)	(482)	(242)	(3,618)	(572)
Net changes from extensions, discoveries and improved recovery, less related costs	–	–	–	–	–	–	–
Revisions of previous reserves estimates	30	283	68	(175)	78	284	(172)
Investments in the period	67	702	87	–	144	1,000	79
Changes in estimated investments in future periods	2	(39)	63	24	(182)	(132)	(27)
Purchase/sale of reserves	–	–	–	–	–	–	–
Net change in income taxes	59	625	212	347	116	1,359	351
Accretion of discount	17	207	348	183	171	926	182
Other	–	–	–	–	(9)	(9)	–
Standardized measure of discounted future net cash flows as of December 31	**68**	**1,020**	**2,131**	**104**	**1,147**	**4,470**	**82**
Thereof equity-accounted companies	–	(42)	25	99	–	82	82

Summary of changes in standardized measure of discounted future net cash flows 2015 (million €)

Consolidated companies and equity-accounted companies	Germany	Rest of Europe	Russia	North Africa, Middle East	South America	Total Group	Thereof at equity
As of January 1	**734**	**1,338**	**4,355**	**923**	**678**	**8,028**	**794**
Sales of oil and gas produced, net of production costs in the current period	(174)	(835)	(631)	(98)	(222)	(1,960)	(185)
Net changes in prices and production costs at balance sheet date	(730)	(1,726)	(2,132)	(2,111)	730	(5,969)	(2,167)
Net changes from extensions, discoveries and improved recovery, less related costs	–	50	–	–	–	50	(17)
Revisions of previous reserves estimates	43	539	197	(55)	278	1,002	126
Investments in the period	72	898	133	8	289	1,400	171
Changes in estimated investments in future periods	(26)	(603)	313	20	(226)	(522)	(87)
Purchase/sale of reserves	–	(32)	–	–	–	(32)	(28)
Net change in income taxes	206	1,464	295	1,288	(262)	2,991	1,435
Accretion of discount	84	312	495	329	86	1,306	304
Other	–	–	–	–	–	–	–
Standardized measure of discounted future net cash flows as of December 31	**209**	**1,405**	**3,025**	**304**	**1,351**	**6,294**	**346**
Thereof equity-accounted companies	–	28	53	265	–	346	346

6

To Our Shareholders 5
Management's Report 17
Corporate Governance 125
Consolidated Financial Statements 151
Supplementary Information on the Oil & Gas Segment 221

Overviews

Ten-year summary 233

Trademarks 235

Glossary 236

Ten-year summary

Million €	2007	2008	2009	2010	2011	2012[1]	2013[2]	2014	2015	2016
Sales and earnings										
Sales	57,951	62,304	50,693	63,873	73,497	72,129	73,973	74,326	70,449	57,550
Income from operations (EBIT)	7,316	6,463	3,677	7,761	8,586	6,742	7,160	7,626	6,248	6,275
Income before taxes	6,935	5,976	3,079	7,373	8,970	5,977	6,600	7,203	5,548	5,395
Income before minority interests	4,325	3,305	1,655	5,074	6,603	5,067	5,113	5,492	4,301	4,255
Net income	4,065	2,912	1,410	4,557	6,188	4,819	4,792	5,155	3,987	4,056
Income from operations before depreciation and amortization (EBITDA)	10,225	9,562	7,388	11,131	11,993	10,009	10,432	11,043	10,649	10,526
EBIT before special items	7,614	6,856	4,852	8,138	8,447	6,647	7,077	7,357	6,739	6,309
EBIT after cost of capital	2,895	1,621	(226)	3,500	2,551	1,164	1,768	1,368	194	1,136
Capital expenditures, depreciation and amortization										
Additions to property, plant and equipment and intangible assets	4,425	3,634	5,972	5,304	3,646	5,263	7,726	7,285	6,013	7,258
Thereof property, plant and equipment	2,564	2,809	4,126	3,294	3,199	4,084	6,428	6,369	5,742	4,377
Depreciation and amortization of property, plant and equipment and intangible assets	2,909	3,099	3,711	3,370	3,407	3,267	3,272	3,417	4,401	4,251
Thereof property, plant and equipment	2,294	2,481	2,614	2,667	2,618	2,594	2,631	2,770	3,600	3,691
Number of employees										
At year-end	95,175	96,924	104,779	109,140	111,141	110,782	112,206	113,292	112,435	113,830
Annual average	94,893	95,885	103,612	104,043	110,403	109,969	111,844	112,644	113,249	111,975
Personnel expenses	**6,648**	**6,364**	**7,107**	**8,228**	**8,576**	**8,963**	**9,285**	**9,224**	**9,982**	**10,165**
Research and development expenses	**1,380**	**1,355**	**1,398**	**1,492**	**1,605**	**1,732**	**1,849**	**1,884**	**1,953**	**1,863**
Key data										
Earnings per share[3] €	4.16	3.13	1.54	4.96	6.74	5.25	5.22	5.61	4.34	4.42
Cash provided by operating activities[4]	5,807	5,023	5,693	6,460	7,105	6,602	8,100	6,958	9,446	7,717
EBITDA margin %	17.6	15.3	14.6	17.4	16.3	13.9	14.1	14.9	15.1	18.3
Return on assets %	16.4	13.5	7.5	14.7	16.1	11.0	11.5	11.7	8.7	8.2
Return on equity after tax %	22.4	17.0	8.9	24.6	27.5	19.9	19.2	19.7	14.4	13.3
Appropriation of profits										
Net income of BASF SE[5]	2,267	2,982	2,176	3,737	3,506	2,880	2,826	5,853	2,158	2,808
Dividend	1,831	1,791	1,561	2,021	2,296	2,388	2,480	2,572	2,664	2,755
Dividend per share[3] €	1.95	1.95	1.70	2.20	2.50	2.60	2.70	2.80	2.90	3.00
Number of shares as of December 31[3, 6] million	**956.4**	**918.5**	**918.5**	**918.5**	**918.5**	**918.5**	**918.5**	**918.5**	**918.5**	**918.5**

[1] We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

[2] Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

[3] We conducted a two-for-one stock split in the second quarter of 2008. The previous year's figures for earnings per share, dividend per share and number of shares have been adjusted accordingly for purposes of comparison.

[4] Includes the change in reporting from 2009 onward of the effects of regular extensions of U.S. dollar hedging transactions

[5] Calculated in accordance with German GAAP

[6] After deduction of repurchased shares earmarked for cancellation

Balance sheet (IFRS)

Million €	2007	2008	2009	2010	2011	2012[1]	2013[2]	2014	2015	2016
Intangible assets	9,559	9,889	10,449	12,245	11,919	12,193	12,324	12,967	12,537	15,162
Property, plant and equipment	14,215	15,032	16,285	17,241	17,966	16,610	19,229	23,496	25,260	26,413
Investments accounted for using the equity method	834	1,146	1,340	1,328	1,852	3,459	4,174	3,245	4,436	4,647
Other financial assets	1,952	1,947	1,619	1,953	848	613	643	540	526	605
Deferred taxes	679	930	1,042	1,112	941	1,473	1,006	2,193	1,791	2,513
Other receivables and miscellaneous noncurrent assets	655	642	946	653	561	911	877	1,498	1,720	1,210
Noncurrent assets	**27,894**	**29,586**	**31,681**	**34,532**	**34,087**	**35,259**	**38,253**	**43,939**	**46,270**	**50,550**
Inventories	6,578	6,763	6,776	8,688	10,059	9,581	10,160	11,266	9,693	10,005
Accounts receivable, trade	8,561	7,752	7,738	10,167	10,886	9,506	10,233	10,385	9,516	10,952
Other receivables and miscellaneous current assets	2,337	3,948	3,223	3,883	3,781	3,455	3,714	4,032	3,095	3,078
Marketable securities	51	35	15	16	19	14	17	19	21	536
Cash and cash equivalents	767	2,776	1,835	1,493	2,048	1,647	1,827	1,718	2,241	1,375
Assets of disposal groups	614	–	–	614	295	3,264	–	–	–	–
Current assets	**18,908**	**21,274**	**19,587**	**24,861**	**27,088**	**27,467**	**25,951**	**27,420**	**24,566**	**25,946**
Total assets	**46,802**	**50,860**	**51,268**	**59,393**	**61,175**	**62,726**	**64,204**	**71,359**	**70,836**	**76,496**
Subscribed capital	1,224	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176
Capital surplus	3,173	3,241	3,229	3,216	3,203	3,188	3,165	3,143	3,141	3,130
Retained earnings	14,556	13,250	12,916	15,817	19,446	23,708	26,102	28,777	30,120	31,515
Other comprehensive income	174	(96)	156	1,195	314	(3,461)	(3,400)	(5,482)	(3,521)	(4,014)
Minority interests	971	1,151	1,132	1,253	1,246	1,010	630	581	629	761
Equity	**20,098**	**18,722**	**18,609**	**22,657**	**25,385**	**25,621**	**27,673**	**28,195**	**31,545**	**32,568**
Provisions for pensions and similar obligations	1,292	1,712	2,255	2,778	3,189	5,421	3,727	7,313	6,313	8,209
Other provisions	3,015	2,757	3,289	3,352	3,335	2,925	3,226	3,502	3,369	3,667
Deferred taxes	2,060	2,167	2,093	2,467	2,628	2,234	2,894	3,420	3,381	3,317
Financial indebtedness	6,954	8,290	12,444	11,670	9,019	8,704	11,151	11,839	11,123	12,545
Other liabilities	901	917	898	901	1,142	1,111	1,194	1,197	869	873
Noncurrent liabilities	**14,222**	**15,843**	**20,979**	**21,168**	**19,313**	**20,395**	**22,192**	**27,271**	**25,055**	**28,611**
Accounts payable, trade	3,763	2,734	2,786	4,738	5,121	4,502	5,153	4,861	4,020	4,610
Provisions	2,697	3,043	3,276	3,324	3,210	2,628	2,670	2,844	2,540	2,802
Tax liabilities	881	860	1,003	1,140	1,038	870	968	1,079	1,082	1,288
Financial indebtedness	3,148	6,224	2,375	3,369	3,985	4,094	3,256	3,545	4,074	3,767
Other liabilities	1,976	3,434	2,240	2,802	3,036	2,623	2,292	3,564	2,520	2,850
Liabilities of disposal groups	17	–	–	195	87	1,993	–	–	–	–
Current liabilities	**12,482**	**16,295**	**11,680**	**15,568**	**16,477**	**16,710**	**14,339**	**15,893**	**14,236**	**15,317**
Total equity and liabilities	**46,802**	**50,860**	**51,268**	**59,393**	**61,175**	**62,726**	**64,204**	**71,359**	**70,836**	**76,496**

[1] We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

[2] Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

Trademarks[1]

ACRODUR® reg. trademark of BASF Group
AgCelence® reg. trademark of BASF Group
AMASIL® reg. trademark of BASF Group
BASONAT® reg. trademark of BASF Group
CELLASTO® reg. trademark of BASF Group
CERESIT® reg. trademark of BASF Group
CLEARFIELD® reg. trademark of BASF Group
CREATOR SPACE® reg. trademark of BASF Group
DINCH® reg. trademark of BASF Group
ECOVIO® reg. trademark of BASF Group
EMPRO® reg. trademark of BASF Group
ENGENIA® reg. trademark of BASF Group
EPOTAL® reg. trademark of BASF Group
ESPAÇO ECO® reg. trademark of BASF Group
F 500® reg. trademark of BASF Group
FLO RITE® reg. trademark of BASF Group
FSC® reg. trademark of Forest Stewardship Council
Glasurit® reg. trademark of BASF Group
GREEN SENSE® reg. trademark of BASF Group
HEXAMOLL® reg. trademark of BASF Group
HYDROBLUE® reg. trademark of BASF Group
INITIUM® reg. trademark of BASF Group
INSCALIS® reg. trademark of BASF Group
INTEGRAL® reg. trademark of BASF Group
INTERCEPTOR® reg. trademark of BASF Group
JONCRYL® reg. trademark of BASF Group
KEROPUR® reg. trademark of BASF Group
KIXOR® reg. trademark of BASF Group
LAROMER® reg. trademark of BASF Group
Lavergy® reg. trademark of BASF Group
LIMUS® reg. trademark of BASF Group
LUPRO-MIX® reg. trademark of BASF Group
MAGLIS® reg. trademark of BASF Group
natuphos® reg. trademark of BASF Group
NEALTA® reg. trademark of BASF Group
NODULATOR® reg. trademark of BASF Group
PALATINOL® reg. trademark of BASF Group
PALIOCROM® reg. trademark of BASF Group
POLYTHF® reg. trademark of BASF Group
Responsible Care® reg trademark of Conseil Européen de l'Industrie Chimique
REVYSOL® reg. trademark of BASF Group
R-M® reg. trademark of BASF Group
SERIFEL® reg. trademark of BASF Group
SOKALAN® reg. trademark of BASF Group
Sustainable Solution Steering® reg. trademark of BASF Group
SYSTIVA® reg. trademark of BASF Group
TERMIDOR® reg. trademark of BASF Group
THOMSIT® reg. trademark of BASF Group
TINUVIN® reg. trademark of BASF Group
TRILON® reg. trademark of BASF Group
ULTRADUR® reg. trademark of BASF Group
ULTRAFORM® reg. trademark of BASF Group
ULTRAMID® reg. trademark of BASF Group
ULTRASON® reg. trademark of BASF Group
VIZURA® reg. trademark of BASF Group
VAULT® reg. trademark of BASF Group
XEMIUM® reg. trademark of BASF Group

[1] Trademarks are not registered in all countries.

Glossary

A

Associated companies
Associated companies are entities in which significant influence can be exercised over their operating and financial policies and which are not subsidiaries, joint ventures or joint operations. In general, this applies to companies in which BASF has an investment of between 20% and 50%.

Audits
Audits are a strategic tool for monitoring and directing standards. During a site or plant audit, clearly defined criteria are used to create a profile on topics such as environment, safety or health.

B

Backup line
A backup line is a confirmed line of credit that can be drawn upon in connection with the issue of commercial paper if market liquidity is not sufficient, or for the purpose of general corporate financing. It is one of the instruments BASF uses to ensure it is able to make payments at all times.

Barrel of oil equivalent (BOE)
A barrel of oil equivalent (BOE) is an international unit of measurement for comparing the energy content of different fuels. It is equal to one barrel of crude oil, or 6,000 cubic feet (169 cubic meters) of natural gas.

Biotechnology
Biotechnology includes all processes and products that make use of living organisms, such as bacteria and yeasts, or their cellular constituents.

BDO
BDO stands for 1,4-Butanediol and is a BASF intermediate. BDO and its derivatives are used for producing plastics, solvents, electronic chemicals and elastic fibers.

C

CDP
The international nonprofit organization CDP (formerly the Carbon Disclosure Project) analyzes environmental data of companies. The CDP's indexes serve as assessment tools for investors.

CO_2 equivalents
CO_2 equivalents are units for measuring the impact of greenhouse gas emissions on the greenhouse effect. A factor known as the global warming potential (GWP) shows the impact of the individual gases compared with CO_2 as the reference value.

Commercial paper program
The commercial paper program is a framework agreement between BASF and banks regarding the issuing of debt obligations on the financial market (commercial paper). The commercial paper is issued under a rolling program for which the terms can be determined individually. This requires a good rating.

Compliance
Compliance is an important element of corporate governance. It refers to the company's behavior in accordance with laws, guidelines and voluntary codices.

D

Dodd-Frank Act
The Dodd-Frank Act issued in 2010 comprises accounting and disclosure obligations for publicly listed U.S. companies regarding the use of certain raw materials that come from the Democratic Republic of the Congo or its bordering countries. The companies must prove that the materials they use do not come from mines in these conflict areas. The definition of conflict minerals as per the Dodd-Frank Act includes the following materials and their derivatives: Columbitetantalite (coltan), cassiterite, wolframite and gold.

E

EBIT
Earnings before interest and taxes (EBIT): At BASF, EBIT corresponds to income from operations.

EBIT after cost of capital
EBIT after cost of capital is calculated by deducting the cost of capital from the EBIT of the operating divisions. The cost of capital thereby reflects the shareholders' expectations regarding return (in the form of dividends or share price increases) and interest payable to creditors. If the EBIT after cost of capital has a positive value, we have earned a premium on our cost of capital.

EBITDA
Earnings before interest, taxes, depreciation and amortization (EBITDA): At BASF, EBITDA corresponds to income from operations before depreciation and amortization (impairments and write-ups).

EBITDA margin
The EBITDA margin is the margin that we earn on sales from our operating activities before depreciation and amortization. It is calculated as income from operations before depreciation and amortization as a percentage of sales.

Eco-Efficiency Analysis
The Eco-Efficiency Analysis is a method developed by BASF for assessing the economic and environmental aspects of products and processes. The aim is to compare products with regard to profitability and environmental compatibility.

Enhanced oil recovery (EOR)
Enhanced oil recovery (EOR) methods, also called tertiary recovery or tertiary production methods, are used to increase the recovery factor from oil reservoirs. Different technologies are employed depending on reservoir conditions; a distinction is generally made between thermal and chemical EOR and miscible gas flooding, which makes use of gases such as carbon dioxide.

Equity method
The equity method is used to account for shareholdings in joint ventures and associated companies. Based on the acquisition costs of the shareholding as of the acquisition date, the carrying amount is continuously adjusted to the changes in equity of the company in which the share is held.

European Water Stewardship (EWS) Standard
The European Water Stewardship (EWS) Standard enables businesses and agriculture to assess the sustainability of their water management practices. The criteria are water abstraction volumes, water quality, conservation of biodiversity and water governance. The Europe-wide standard came into force at the end of 2011 and was developed by nongovernmental organizations, governments and businesses under the direction of the independent organization European Water Partnership (EWP).

Exploration
Exploration refers to the search for mineral resources, such as crude oil or natural gas, in the Earth's crust. The exploration process involves using suitable geophysical methods to find structures that may contain oil and gas, then proving a possible discovery by means of exploratory drilling.

F

Field development
Field development is the term for the installation of production facilities and the drilling of production wells for the commercial exploitation of oil and natural gas deposits.

Formulation
Formulation describes the combination of one or more active substances with excipients like emulsifiers, stabilizers and other inactive components in order to improve the applicability and effectiveness of various products, such as cosmetics, pharmaceuticals, agricultural chemicals, paints and coatings.

Free cash flow
Free cash flow is cash provided by operating activities less payments made for property, plant and equipment and intangible assets.

G

Global Compact
In the United Nations Global Compact network, nongovernmental organizations, companies, international business and employee representatives, scientists and politicians work on aligning global business with the principles of sustainable development.

Global Product Strategy (GPS)
The Global Product Strategy aims to establish global product stewardship standards and practices for companies. The program, initiated by the International Council of Chemical Associations, strives to ensure the safe handling of chemicals by reducing existing differences in risk assessment.

Global Reporting Initiative (GRI)
The Global Reporting Initiative is a multistakeholder organization. It was established in 1997 with the aim of developing a guideline for companies' and organizations' voluntary reporting on their economic, environmental and social activities.

Greenhouse Gas Protocol (GHG Protocol)
The Greenhouse Gas Protocol, used by many companies in different sectors as well as nongovernmental organizations and governments, is a globally recognized standard to quantify and manage greenhouse gas emissions. The reporting standards and recommendations for implementing projects to reduce emissions are jointly developed by companies, nongovernmental organizations and governments under the guidance of the World Resources Institute and the World Business Council for Sustainable Development.

H

Health Performance Index (HPI)
The Health Performance Index is an indicator developed by BASF to provide more detailed insight into our approach to health management. It comprises five components: confirmed occupational diseases, medical emergency drills, first aid, preventive medicine and health promotion.

I

IAS
IAS stands for International Accounting Standards (see also IFRS).

IFRS
The International Financial Reporting Standards (until 2001: International Accounting Standards, IAS) are developed and published by the International Accounting Standards Board, headquartered in London, England. The "IAS Regulation" made the application of IFRSs mandatory for listed companies headquartered in the European Union starting in 2005.

ILO Core Labor Standards
The ILO Core Labor Standards are set out in a declaration of the International Labor Organization (ILO), comprising eight conventions that set minimum requirements for decent working conditions.

ISO 14001
ISO 14001 is an international standard developed by the International Organization for Standardization (ISO) that determines the general requirements for an environmental management system for voluntary certification.

ISO 19011
ISO 19011 is an international standard developed by the International Organization for Standardization (ISO) that determines requirements for audits of quality management and environmental management systems.

ISO 50001
ISO 50001 is an international standard developed by the International Organization for Standardization (ISO) that determines the general requirements for an energy management system for voluntary certification.

J

Joint arrangement
A joint arrangement refers to joint ventures and joint operations, and describes a jointly controlled arrangement of two or more parties. This arrangement exists if decisions about relevant activities require the unanimous consent of all parties sharing control.

Joint operation
A joint operation is a joint arrangement in which the parties that share control have direct rights to the assets and liabilities relating to the arrangement. For joint operations, the proportional share of assets, liabilities, income and expenses are reported in the BASF Group Consolidated Financial Statements.

Joint venture
A joint venture is a joint arrangement in which the parties that have joint control of a legally independent entity have rights to the net assets of that arrangement. Joint ventures are accounted for using the equity method in the BASF Group Consolidated Financial Statements.

L

Long-term incentive program (LTI)
The long-term incentive program is a share-price-based compensation program for senior executives of the BASF Group and members of the Board of Executive Directors. The program aims to tie a portion of the participants' compensation to the long-term, absolute and relative performance of BASF shares.

M

Materiality analysis/material aspects
BASF uses the materiality analysis to gain information from internal and external stakeholders about the significance of sustainability topics.

MDI
MDI stands for diphenylmethane diisocyanate and is one of the most important raw materials for the production of polyurethane. This plastic is used for applications ranging from the soles of high-tech running shoes and shock absorbers for vehicle engines to insulation for refrigerators and buildings.

Million British thermal unit (mmBtu)
The British thermal unit (Btu) is a unit of energy observed in the Anglo-American measuring system. It is used for indicating values such as the energy content of gas. One mmBtu (million British thermal units) is equal to approximately 1,003 cubic feet of gas or 28 cubic meters of gas.

Monitoring system
Monitoring systems and tools serve to measure and ensure the adherence to standards. One area that is monitored is our voluntary commitments, such as the adherence to human rights and internationally recognized labor standards.

MSCI World Chemicals Index
The MSCI World Chemicals Index is a stock index that includes the world's biggest chemical companies. It measures the performance of the companies in the index in their respective national currencies, thus considerably reducing currency effects.

N

Nanomaterials
The International Organization for Standardization defines nanomaterials as materials with one or more external dimensions on a nanoscale or with internal structure or surface structure on a nanoscale. For regulatory purposes, there are additional definitions for nanomaterials worldwide.

Naphtha
Naphtha is petroleum that is produced during oil refining. Heavy naphtha is the starting point for gasoline production. Light naphtha is the most important feedstock for steam crackers.

NMVOC (Nonmethane Volatile Organic Compounds)
VOCs (volatile organic compounds) are organic substances that are present in the air as gas at low temperatures. These include some hydrocarbons, alcohols, aldehydes and organic acids. NMVOCs are VOCs from which methane is excluded.

O

OHSAS 18001
The Occupational Health and Safety Assessment Series (OHSAS) includes the standard OHSAS 18001, which contains a management system for occupational safety. This system can be integrated into an existing quality and environmental protection management system and certified accordingly.

P

Peak sales potential
The peak sales potential of the crop protection pipeline describes the total peak sales generated for individual products in the research and development pipeline. The peak sales corresponds to the highest sales value to be expected from one year. The pipeline comprises innovative active ingredients and system solutions that have been on the market since 2016 or will be launched on the market by 2026.

Propylene oxide (PO)
Propylene oxide (PO), a very reactive compound, is generated by the oxidation of propylene and is used as basic chemical for further processing in the chemical industry.

R

REACH
REACH is a European Union regulatory framework for the registration, evaluation and authorization of chemicals, and will be implemented gradually until 2018. Companies are obligated to collect data on the properties and uses of produced and imported substances and to assess any risks. The European Chemicals Agency reviews the submitted dossiers and, if applicable, requests additional information.

Renewable resources
The term renewable resources refers to components from biomass that originate from different sources (plants and microorganisms, for example), and are used for industrial purposes. Renewable resources are used for manufacturing numerous products.

Responsible Care®
Responsible Care® refers to a worldwide initiative by the chemical industry to continuously improve its performance in the areas of environmental protection, health and safety.

Retention
Profits generated can be used in two ways: distribution to shareholders or retention within the company.

Return on assets
Return on assets describes the return we make on the average assets employed during the year. It is calculated as income before taxes and minority interests plus interest expenses as a percentage of average assets.

S

Special items
Special items arise from the integration of acquired businesses, restructuring measures, impairments, gains or losses resulting from divestitures and sales of shareholdings, and other expenses and income that arise outside of ordinary business activities.

Spot market (cash market)
A spot market is a market where an agreed-upon deal, including delivery, acceptance and payment, occurs immediately, as opposed to forward contracts, where the delivery, acceptance and payment occurs at a point in time after the conclusion of the deal.

Steam cracker
A steam cracker is a plant in which steam is used to “crack” naphtha (petroleum) or natural gas. The resulting petrochemicals are the raw materials used to produce most of BASF’s products.

Sustainable Solution Steering®
We use Sustainable Solution Steering® to review and guide our portfolio in terms of sustainability. The four categories – Accelerators, Performers, Transitioners and Challenged – indicate how our products and solutions already comply with sustainability requirements and how we can increase their contribution.

T

TDI
TDI stands for toluene diisocyanate and is a raw material for the production of polyurethane. It is used primarily in the automotive industry (for example, in seat cushions and interiors) and the furniture industry (for example, for flexible foams for mattresses or cushioning, or in wood coating).

TUIS
TUIS is a German transport accident information and emergency response system jointly operated by around 130 chemical companies. The member companies can be reached by the public authorities at any time and provide assistance over the telephone, expert on-site advice or special technical equipment.

V

Value chain
A value chain describes the successive steps in a production process: from raw materials through various intermediate steps, such as transportation and production, to the finished product.

Verbund
In the BASF Verbund (pronounced “fair-boond”), production facilities, energy flow, logistics and infrastructure are intelligently networked with each other in order to increase production yields, save resources and energy, and reduce logistics costs. We also make use of the Verbund principle for more than production, applying it for technologies, knowledge, employees, customers, and partners, as well.

W

Water stress areas
Water stress areas are areas in which water represents a scarce resource, and where people abstract more than 60% of the water available. The most important factors leading to water scarcity are: low precipitation, high temperatures, low air humidity, unfavorable soil properties and high water abstraction rates.

MIX
Paper from responsible sources
FSC® C011291
www.fsc.org

This report is printed on
FSC® certified real art paper.

Publisher:
BASF SE
Communications & Government Relations
67056 Ludwigshafen

Design: Anzinger und Rasp, Munich

Printing: Kunst- und Werbedruck, Bad Oeynhausen

Photography:
Cover and page 1: Detlef Schmalow
Photo series: BASF, Keith Bedford/laif, Jordi Ruiz Cirera, Matt Eich, hadynyah/Getty Images, IAC Group, Jonathan Jacob, Aditya Kapoor, Herbert Lehmann/picture alliance, Gw. Nam/Getty Images, Edwin Remsberg/Getty Images, Collin Richie, Detlef Schmalow, Marcus Schwetasch
Board of Executive Directors and Supervisory Board: Andreas Pohlmann

Quarterly Statement, 1st Quarter 2017 / Annual Shareholders' Meeting 2017

April 27, 2017 / May 12, 2017

Half-Year Financial Report 2017

July 27, 2017

Quarterly Statement, 3rd Quarter 2017

October 24, 2017

Full-Year Results 2017

February 27, 2018

Quarterly Statement, 1st Quarter 2018 / Annual Shareholders' Meeting 2018

May 4, 2018

Report 2016

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

BASF supports the chemical industry's global Responsible Care initiative.

Further information

Published on February 24, 2017

You can find this and other BASF publications online at basf.com

You can also order the reports:

– By phone: +49 621 60-99001
– Online: basf.com/publications

Contact

General inquiries
Phone: +49 621 60-0

Media Relations
Juliana Ernst, phone: +49 621 60-99123

Sustainability Relations
Thorsten Pinkepank, phone: +49 621 60-41976

Investor Relations
Dr. Stefanie Wettberg, phone: +49 621 60-48002

Internet
basf.com

COMC 1701 E ISSN 1866-9387

BASF
We create chemistry