

# BASF in Antwerp Report 2016



 **BASF**  
We create chemistry





←

**Cover photo:**

An intern and her mentor. This chemical process technologies student is one of the pioneers of dual learning at BASF Antwerp.

**On this page:**

The new pearl of the city of Antwerp skyline, the port house, contains many BASF materials, such as admixtures to concrete and polyurethane floors.

(© Port of Antwerp - Peter Knoop)

## 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.



### 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.



### 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.



### 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.



### 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.



### 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)

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## About this report

The “BASF in Antwerp” Report is published annually as a concise document about the performance of our activities across the three dimensions of sustainability – economy, environment and society – in Antwerp. The reporting period for this publication is the financial year 2016. This report also carries an overview of BASF Group along with its financial performance, prepared in accordance with the requirements of the International Financial Reporting Standards (IFRS), and, where applicable, the German Commercial Code as well as the German Accounting Standards (GAS). The emissions, waste, energy and water use of consolidated joint operations are included pro rata, based on our stake. The employee numbers refer to employees within the BASF Group scope of consolidation as of December 31, 2016.



## Welcome

### Letter from the Executive Board

**Wouter De Geest and Bernd Brian look back on a politically and economically turbulent 2016. How is BASF Antwerp dealing with it? The future, at any rate, will be revolving around four key words: safety, sustainability, innovation and our employees.**

As one of the six Verbund sites, BASF Antwerp belongs in the top tier of the BASF Group. We owe this to a strong focus on operational excellence, committed employees and a prime location in logistic terms.

We must nonetheless ensure that we remain competitive. The political context is uncertain, the economy is volatile and customers are demanding ever more flexibility. Social trends, such as urbanization, greying and the rising global population are increasing the pressure on our planet. Within the company, we also need to adapt in order to keep up.

#### **How are we going to face up to the future now?**

First and foremost, safety is and will continue to be our top priority. We learn lessons from every incident, near miss or report, even though accidents are less severe than ever. Additionally, we remain committed to our safety policy and put additional focus on safety in traffic.

The next priority for our site is sustainability. For a manufacturing site such as Antwerp, this translates into sustainable operational processes. Our Verbund is the cornerstone of sustainable production. By-products from one facility are used as raw material for others. Surplus energy is circulated to facilities which are short of energy. This is how we achieve energy, raw-material and transport savings. The focus in 2016 was on greater energy efficiency.

**“Focusing on operational excellence, innovation and sustainability will enable us to overcome future challenges.”**



Wouter De Geest

Sustainability goes hand in hand with innovation. Digital technologies can help us optimize the utilization of energy and raw materials. In 2016, BASF Antwerp undertook numerous activities to join in with Industry 4.0. Smart production facilities, from predictive to prescriptive maintenance and more automation in logistics. That is how the future will look.

We cannot achieve our core values without our employees. Over 3,000 BASF employees and around 1,500 people employed by our strategic partners, suppliers and contractors breathe new life into these concepts on a daily basis. We provide intensive guidance and engage in open dialogue with our employees. In short, we build a relationship with each employee.

And this connectedness extends outwards to our environment where we also engage in profitable encounters and constructive partnerships. We do this with schools, neighbors, government bodies and many other organisations.

Verbund is the principle with which it all began when BASF built its first production facilities at the end of the sixties. The fact that this connectedness reaches out a great deal further than our facilities, is the result of the everyday work of many people. We will keep this up in 2017 and long after!

**Wouter De Geest**  
CEO BASF Antwerpen  
since 2007  
Joined BASF in 1982

**Bernd Brian**  
Member management committee  
Joined BASF in 1984,  
In Antwerp since 2016

**“Safety is priority number one – for everyone on site and for our wider environment!”**



Bernd Brian

# BASF Group 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 <sup>1</sup>	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 <sup>2</sup>	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)

<sup>1</sup> Amortization of intangible assets, depreciation of property, plant and equipment, impairments and write-ups

<sup>2</sup> Additions to intangible assets and property, plant and equipment (including acquisitions)

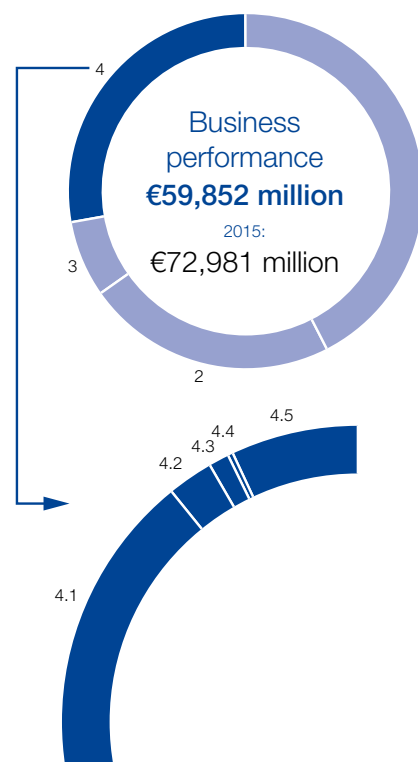
## Value added 2016<sup>3</sup>

### 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%



<sup>3</sup> 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 %
<b>Employees</b>				
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
<b>Society</b>				
Donations and sponsorship	million €	47.0	56.2	(16.4)

## Environment, health, safety and security

		2016	2015	Change in %
<b>Safety, security and health</b>				
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		0.96	0.97	(1.0)
<b>Environment</b>				
Primary energy use <sup>4</sup>	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 <sup>5</sup>	thousand metric tons	15.9	17.3	(8.1)
Emissions of nitrogen to water <sup>5</sup>	thousand metric tons	2.9	3.0	(3.3)
Emissions of heavy metals to water <sup>5</sup>	metric tons	23.2	25.1	(7.6)
Emissions of greenhouse gases	million metric tons of CO <sub>2</sub> equivalents	21.9	22.2	(1.4)
Emissions to air (air pollutants) <sup>5</sup>	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)

<sup>4</sup> Primary energy used in BASF's plants as well as in the plants of our energy suppliers to cover energy demand for production processes

<sup>5</sup> Excluding emissions from oil and gas production

## Audits along the value chain

		2016	2015	Change in %
<b>Suppliers</b>				
Number of on-site sustainability audits of raw material suppliers		104	135	(23.0)
<b>Responsible Care Management System</b>				
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)

# BASF Group

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.

## 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](http://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.



## Our Strategy

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

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#### ■ 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

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- 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, 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.

### Our values

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- 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.

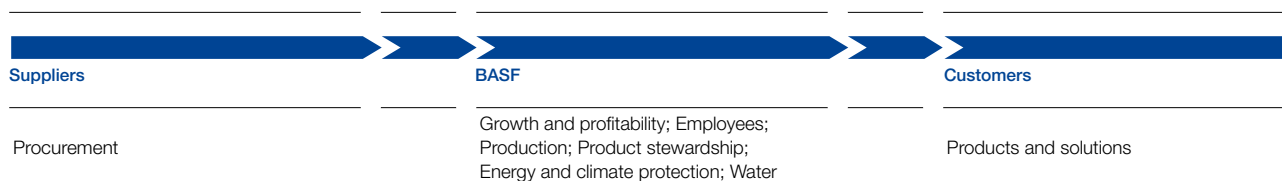
**Entrepreneurial:** All employees contribute to BASF’s success – as individuals and as a team. We turn market needs into customer solutions. We succeed in this because we take ownership and embrace accountability for our work.

## 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
Assessment of sustainability performance of relevant suppliers <sup>1</sup> according to our risk-based approach; development of action plans where improvement is necessary	70%	32%

<sup>1</sup> 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.

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

<sup>2</sup> Baseline 2015: excluding business transferred to Gazprom

### Employees

	2021 Goal	Status at end of 2016
Proportion of women in leadership positions with disciplinary responsibility	22–24%	19.8%
<b>Long-term goals</b>		
International representation among senior executives <sup>3</sup>	Increase in proportion of non-German senior executives (baseline 2003: 30%)	36.4%
Senior executives with international experience	Proportion of senior executives with international experience over 80%	84.6%
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.

<sup>3</sup> 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
Reduction of worldwide lost-time injury rate per one million working hours	≤0.5	1.4
Reduction of worldwide process safety incidents per one million working hours	≤0.5	2.0
	<b>Annual goal</b>	
Health Performance Index	>0.9	0.96

## Product stewardship

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

## Energy and climate protection

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

<sup>4</sup> 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
Introduction of sustainable water management at all production sites in water stress areas and at all Verbund sites (excluding Oil & Gas)	100%	42.6%

## Products and solutions

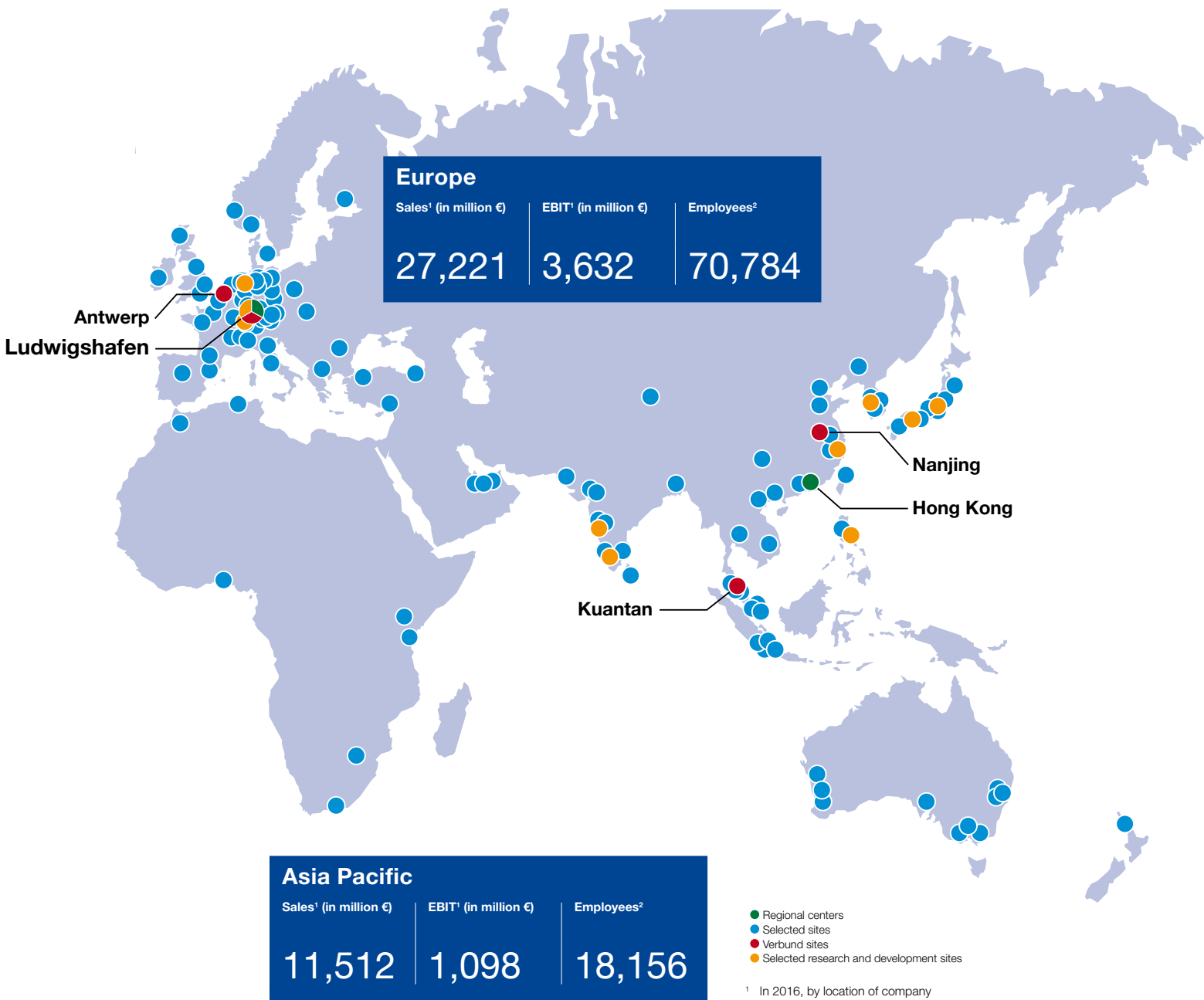
	2020 Goal	Status at end of 2016
Increase the proportion of sales generated by products that make a particular contribution to sustainable development ("Accelerators")	28%	27.2%

## BASF in the regions

BASF Group sales 2016: €57,550 million;  
 EBIT 2016: €6,275 million







## BASF on the capital market

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 paid a dividend of €3.00 per share – 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

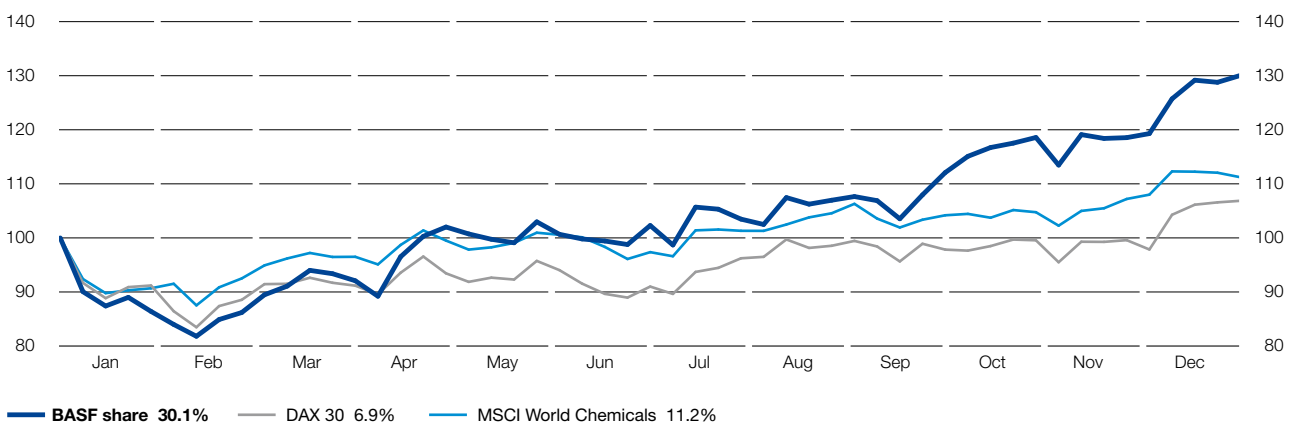
Weak economic data from the United States and China as well as turbulence in the crude oil market led to a negative start to the 2016 stock market year. Gains in oil prices, solid U.S. labor market data and better economic indicators for China led to stock market recovery during the second quarter. The 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%.

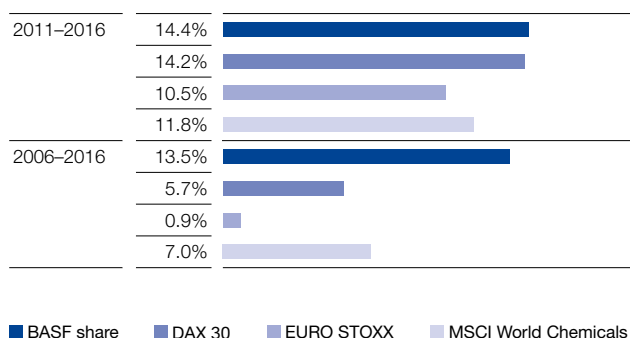
Viewed over a five and ten-year period, the long-term performance of BASF shares still clearly surpasses these indexes. The assets of an investor who invested €1,000 in BASF shares at the end of 2006 and reinvested the dividends in additional BASF shares would have increased to €3,538 by the end of 2016. 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)



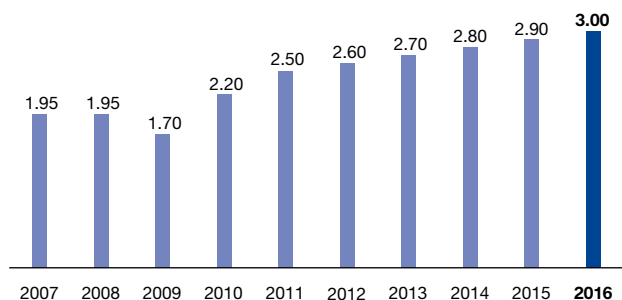
**Weighting of BASF shares in important indexes as of December 31, 2016**

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

**Dividend of €3.00 per share**

For 2016, BASF paid a dividend of €3.00 per share. We stand by our ambitious dividend policy and paid out almost €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<sup>1</sup> (€ per share)**



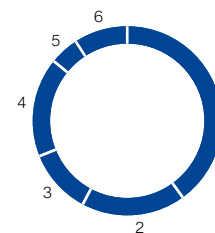
<sup>1</sup> Adjusted for two-for-one stock split conducted in 2008

**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).

## 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.**



### PRODUCTION

#### 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. The biocatalytic production method results in energy savings, less waste and greater environmental compatibility. 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.

### FOOD

#### 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. 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.



### INFRASTRUCTURE, INDUSTRY, INNOVATION

#### Driving digital transformation

The BASF 4.0 project team is evaluating possibilities for more intensive use of digital technologies and business models. 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. One 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.





A contractor at work.



Both employees made a career switch, retraining to become a process operator.



BASF Antwerp tests new technologies.

# BASF in Antwerp

## At a glance

BASF Antwerp continues to play a key role within the BASF Group and in the Antwerp chemical cluster. 46 production facilities, kept running by 3,127 employees, manufacture chemical products out without which we could not imagine our day-to-day lives.

**SALES**  
€ 5,183.9 million

**EMPLOYEES**  
3,127

**NUMBER OF PRODUCTION FACILITIES**  
46

### Turnover and investment

- Prices down, quantities sold up

BASF Antwerp turnover fell in 2016 by 8.3% from € 5,652.8 million to € 5,183.9 million. This drop is attributable to a softening of selling prices. This adverse pricing effect was partly offset by a rise in quantities sold.

On average, we invest € 150 million per year at this site. We completed the investment in a production facility for a new superabsorbent polymer technology, as well as the construction of a new ammonia tank. Furthermore, we are continuing to invest in projects to ensure the safety, efficiency and profitability of our site and its facilities.

### What do we make?

- BASF products found everywhere

The BASF Antwerp product range comprises basic and speciality chemicals, synthetics and primary products, refining products and inorganic chemicals. BASF Antwerp products go on to be utilised in virtually all processing sectors, such as the automotive industry, the construction sector, paper and leather manufacturing, sports equipment, as well as the textile, food and pharmaceutical sectors. Taking one example as an illustration: our steam cracker 'cracks' naphtha into various products, including propylene and benzene. From benzene we make nitrobenzene, followed by aniline and then MDI. MDI is a primary product for polyurethane, which you find virtually everywhere, from insulation to footwear and cars.



An important product for BASF Antwerp is MDI, a precursor to polyurethane. Polyurethane is used for almost everything, for example dashboards for cars.

### Where are we located?

- Optimum location in the port of Antwerp
- Logistical hub

BASF Antwerp production facilities are located on a site covering around 600 ha in the northern part of the port of Antwerp. Our location offers many logistical advantages, one of the decisive reasons why BASF picked this spot over 50 years ago. The proximity of a large seaport and direct access to the European road, inland waterway, rail and pipeline network makes our location a logistical hub. BASF Antwerp makes the most of this and takes responsibility within the group for logistics scheduling in Belgium, the Netherlands, Luxembourg and France.



There are on average 5.000 people on our site daily: employees, partner firms, contractors, suppliers, and more.

### Connected in production

- Verbund
- Strategic partnerships

The Verbund is the starting point for our site. It means that all facilities are interconnected and the end-products of one facility are primary products for another. Besides, our Verbund is not limited to our own production facilities. Over the past ten years, BASF has redeployed or sold off some of its operations



to EuroChem, INEOS Styrolution and INOVYN. These strategic partners however are still part of the production Verbund. The INOVYN chlorine facility was closed down in 2016 and dismantling started. Because this facility had an important part to play in the Verbund, an agreement was reached first to continue getting the products consistently in the right place. What is more, BASF collaborates very closely with a number of partners in the field of energy and public utilities, such as Air Liquide, a process gas supplier.



One of our strategic partners is Combinant, a multimodal open access terminal.

### Overview of our strategic partners:

- **INEOS Styrolution:** Styrene plastics have been placed with Styrolution since 2011. First as a joint venture between BASF and INEOS, then INEOS acquired the BASF stake in 2014.
  - **EuroChem:** Fertiliser operations have been part of this Russian group since 2012.
  - **INOVYN:** This was previously a joint venture between Solvay and BASF, but INEOS acquired the BASF stake in 2015. They supply BASF with purified chlorine to produce MDI and process hydrogen chloride to obtain a raw material for PVC.
  - **DOW Chemical & Solvay:** The two companies are strategic partners in the HPPO complex. Propylene oxide is produced there utilising a unique process which is energy and environmentally friendly.
  - **Air Liquide:** Specialising in process gases, Air Liquide operates an air separation facility and hydrogen facilities at the site.
  - **Zandvliet Power:** This combined heat and power station boasts an output of 400 megawatts. It is a joint venture between Electrabel and BASF.
  - **Combinant:** A joint venture between HUPAC, Hoyer and BASF. This rail terminal switches 150,000 freight consignments from road to rail thus helping to cut CO<sub>2</sub> and reduce traffic congestion in the region.
  - **Evides industriewater:** This company supplies demineralised surface water required in our production.
- Our strategic partners are also bound by our rules on sustainability and safety.



The steamcracker at night: one of the biggest and most important plants on our site.

## BASF in Antwerp

### BASF in four words

The Verbund concept is the foundation for our site. Furthermore, we keep four key words in mind when organising production and our site in general: safety, sustainability, innovation and connectedness. We keep these four principles in the back of our mind with every decision.

#### Health and safety

- Five pillars of our safety policy
- Promoting a healthy lifestyle

With so much activity, so many different people and numerous different products, safety is an absolute must. Year after year, we rely on the following pillars: Process safety, leadership, contractors, risk and incident analysis and focus on prevention. And that pays off. The number of industrial accidents with time off work remains stable at a low level. Every year we also take time to examine a number of topics in greater depth. If something does nevertheless happen, our response service will be on the spot within two minutes.

Safety is also important off-site. In the event of road or rail accidents involving chemical products, the authorities can call up our response service. Travelling to and from work is still an important matter. We organise awareness campaigns for safe use of cars, motorcycles and bicycles at regular intervals.

With a well-developed medical department, we intend to keep our employees as healthy as possible. We protect employees from hazardous substances and exposure to noise, vibration and extreme temperatures. What is more, we pay attention to an ergonomically laid out work area and promote a healthy lifestyle.



Both within and outside our site our intervention service is specialized in handling incidents with chemicals.

#### Sustainability

- Balance between economics, ecology and society
- Energy efficiency

For us, sustainability means satisfying our current needs, without impairing the ability of the next generation to meet theirs. In doing so, we continually weigh up three aspects against each other: economics, ecology as well as people and society. Our Verbund is simply a sustainable way of making chemical products. Processing a by-product from one facility in another means we need less raw materials. All facilities are connected to our energy network. This maintains a balance between processes that release energy and those which require it. We achieve savings on other utilities in the same way.



We engage in a dialogue with our employees and emphasize learning from each other.



580 km of pipelines require a great deal less transport and CO<sub>2</sub> emissions. In addition, a single water treatment plant treats wastewater from the entire site.

The focus over the past few years has been on greater energy efficiency. BASF Antwerp is part of the Flanders Energy Policy Agreement and has instituted energy-saving measures under it. It has done so between one facility and another, but mainly in the facilities themselves. In order to make energy efficiency an instinctive response, BASF Antwerp is working on the introduction of an ISO 50 001 standardised energy management system. In doing so, Antwerp is following in the footsteps of other major sites within the BASF Group.

We are not working on sustainability single-handedly: we are entering into partnerships and commitments with other organisations in order to create our sustainability policy. We are for instance collaborating structurally with Natuurpunt, a Flemish nature conservation movement, towards maintaining nature areas in the neighborhood, we have taken on a commitment for the Flemish Climate Summit and have a seat in various sustainability networks. These always bring about an interesting exchange of ideas.



Our pipelines transport steam and products from one plant to another. This way we act responsibly with raw materials and energy

## Innovation

- Synvina
- Industry 4.0

BASF has entered into a joint venture with Avantium, a Dutch company specialising in chemistry based on renewable raw materials. This joint venture was dubbed Synvina. We intend to carry out a joint study for a facility to produce FDCA (furandicarboxylic acid) at the BASF Antwerp site. FDCA is a building block for producing PEF. PEF is comparable to PET, but based on renewable raw materials as well as having superior product properties. Furthermore, our superabsorber facility is almost ready to produce SAVIVA™, a new type of superabsorbent granules. These granules absorb liquids even better, which means even lighter and thinner nappies!

We are also innovating in our production processes, placing strong emphasis on operational excellence and the use of innovative technologies. We are doing so successfully, since

our facilities are running excellently: few stoppages, incidents or unscheduled maintenance shutdowns. We are fully engaged in preparing to implement the digital trend, better known as Industry 4.0, in our production. At this time, more and more facilities are operating with advanced software and automation to control chemical processes. The aim is a balance between output, use of raw materials, energy and waste flows. It is known as advanced process control. We also employ predictive maintenance, based on big data and the use of mobile technology to predict when maintenance will be needed.

## Connected

- Every talent counts
- Connected with environment

Around 3,000 BASF employees and an average of 1,500 contractors, suppliers and partner firm employees are on site every day. All the people together? A great exchange of knowledge, creativity and best practices. What is more, Antwerp is the global technology centre for MDI, the polyurethane component, within the group and provides logistical support to other European sites.

We conduct regular dialogue with our employees and organise training to ensure that everyone can develop. Even before they start at BASF, students are given an opportunity to get a taste of the shop floor. Since September 2016, trainees can spend over 60% of their time on the work floor via the dual learning training system. This enables them to put theory directly into practice.

We also connect with the area around us, first and foremost with our neighbors, the people who live within a radius of 10 km from the site. Neighborhood representatives meet regularly at the BASF Neighborhood Council. We also support local traditions and associations, encouraging our employees to do likewise.



BASF and Avantium have founded a joint venture to study a possible plant which is to manufacture PEF-bottles. PEF is the bio-based equivalent to PET.

# Safety, health and environment

## Safe on every level

A well-developed prevention service, safety contact points in each team and a thoroughly trained intervention service: these are our ingredients for putting our focus on safety into practice. Because a complex site like ours requires a carefully-conceived safety approach.

### The figures

- LTI Frequency Rate 2.7
- Increase in accidents while travelling between home and work

The figures illustrate our focus on safety. It must be acknowledged that in 2016 the number of lost-time work-related accidents per million worked hours (LTI frequency rate) was somewhat higher than in 2015: 2.7 instead of 2.3. Nevertheless, in general the accidents were not very serious, and 1 in 4 had nothing to do with the job that the victim had to perform. For contractors as well the frequency rate was somewhat higher than in 2015, yet there we still achieve an exceptionally good level compared to benchmark companies. In our production departments, only a single accident with lost time occurred in 2016.

The number of process safety incidents remained at the same level, but the number of accidents while travelling between home and work rose. In 2017 we are once again planning to conduct numerous awareness-raising actions on the issue of traffic safety, and we encourage employees to always use the BASF bus for travelling between home and work.

### The policy

- Team implements policy guidelines on- and off-site

Safety is and remains our number one priority and so, year after year, we have logically and consistently been reinforcing our five pillars of safety policy. Process safety, leadership, contractors, risk and incident analysis and focus on indicators that measure our prevention efforts. Safety contact points in each team, coaches for every department and a well-developed prevention service translate these pillars into practice. And if something



Company buses transport employees safely to and from work.

nevertheless goes wrong, our intervention service is ready to step in immediately and correct it.

Moreover, the concern for safety doesn't stop at the site's physical limits. The intervention service is ready to take action off-site. It supports local emergency services if asked to do so. And in agreement with the government, it offers assistance in the event of transport incidents with chemicals.

### The focus points

- Process safety
- Sustainably safe behaviour

Every year we devote special attention to one or two safety themes, because concentrating on a limited number of themes produces greater impact. In recent years we have already worked on the topics of traffic safety and working at a height. In 2016, one of the focuses was process safety, where we zoomed in on the safe operation of production installations (see box below). Although technical safety and properly dealing with rules and procedures remain important, we are increasingly concentrating on the next phase in our dealings with safety: sustainably safe behaviour. Via a series of workshops we want to sensitise employees to take responsibility for safety themselves: 'Safety, really MY thing' is the slogan.



Process safety was a focus point in 2016. This conversation took place in the amines-plant.

### Process safety on Tour

70 sessions, 6 supervisors, one and a half years, countless in-depth discussions... That was Process safety on Tour in a nutshell. How did it work? A supervisor from our prevention service visited each team from every production plant in order to discuss incidents and near-incidents. All product leaks must be prevented: that's the message, and by sharing best practices we can make progress on achieving our goal. This way we increase the awareness of all employees on the theme of process safety and we make our safety policy tangible on the work floor.

# Health

Looking after the health of our employees is essential. Our medical team is responsible for providing the necessary care and support for every employee. We also pay a great deal of attention to prevention and raising awareness.

## BASF Group

### ■ Positive Health Performance Index

Comprehensive company healthcare is intended to promote its employees' health, productivity and welfare. In order to be able to dispense the best medical service, we have a network of 40 doctors and medical staff who share worldwide knowledge and experience. This global network backs up the medical department at the various sites.

The BASF Group measures performance via the Health Performance Index (HPI). The HPI has five components: recognised occupational diseases, simulation exercises of medical emergencies, first-aid training, preventive medicine and health promotion.

### BASF Group Health Performance Index

2016	0.96	<div style="width: 96%;"></div>
2015	0.97	<div style="width: 97%;"></div>

## Medical intervention at BASF Antwerp

- Specialist equipment
- Specialist staff

Our medical team of doctors and nurses is available 24/7 and is always on call to offer advice and provide treatment. This can range from minor ailments to severe emergencies. In addition, we have well-equipped ambulances available and an emergency service vehicle to render assistance on the spot. With our health risk assessment, the BASF Group supports the site to limit exposure to chemical substances as well as other hazards such as noise, vibration and extreme temperatures is limited. We also keep a close eye on food safety.



This group of enthusiastic volunteers are part of B-Fit@BASF. B-Fit@BASF promotes lifestyle changes for good health.



Keeping our employees' life balanced is an important aspect of our health policy.

## Health at the workplace

- Promoting a healthy lifestyle
- Ergonomics

The BASF Group runs a global health campaign every year. The 2016 campaign focused on heart diseases. In Antwerp, we organised workshops on first aid and heart friendly sports. Over 1,000 employees completed the HeartTicket online questionnaire. From this questionnaire, they were able to conclude whether they were at increased risk from cardiovascular disease. Finally, 75 employees registered to stop smoking under supervision.

In 2010, BASF Antwerp set up the campaign B-Fit@BASF as a fun way of tackling health promotion. Our aim is to organize low-threshold activities based on three pillars: healthy food, exercise and balance. Over the past year, we worked intensively on active breaks during the working day.

Keeping healthy at work is also a matter of having a correctly laid out work area. The medical department gives advice or carries out ergonomics checks. Moreover, ergonomics is already the focus of attention when plans are being drawn.



## Environment

We manage water and waste carefully. We cut down on our emissions and environmental impact by utilising the best available technologies. Moreover, we make every effort to reduce our energy consumption.

### Air

- Atmospheric emissions dropped by 41% over the last 10 years

#### Atmospheric emissions (in tons)\*

2016	2,486	<div style="width: 41%;"></div>
2015	2,493	<div style="width: 42%;"></div>

\*CO, NOX, NMVOS, SOX, dust, other inorganic substances

#### Greenhouse gases (in tons of CO<sub>2</sub> equivalents)

2016	3,407,858	<div style="width: 41%;"></div>
2015	3,463,206	<div style="width: 42%;"></div>

The level of atmospheric emissions and greenhouse gases discharged is comparable to 2015. BASF Antwerp has been successful over the last ten years in further reducing its environmental impact, while production output remained stable. Atmospheric emissions dropped by 41% over the past ten years. The relative environmental impact (atmospheric and

water emissions and landfill waste per ton of manufactured product) was down by 6% over the same period.

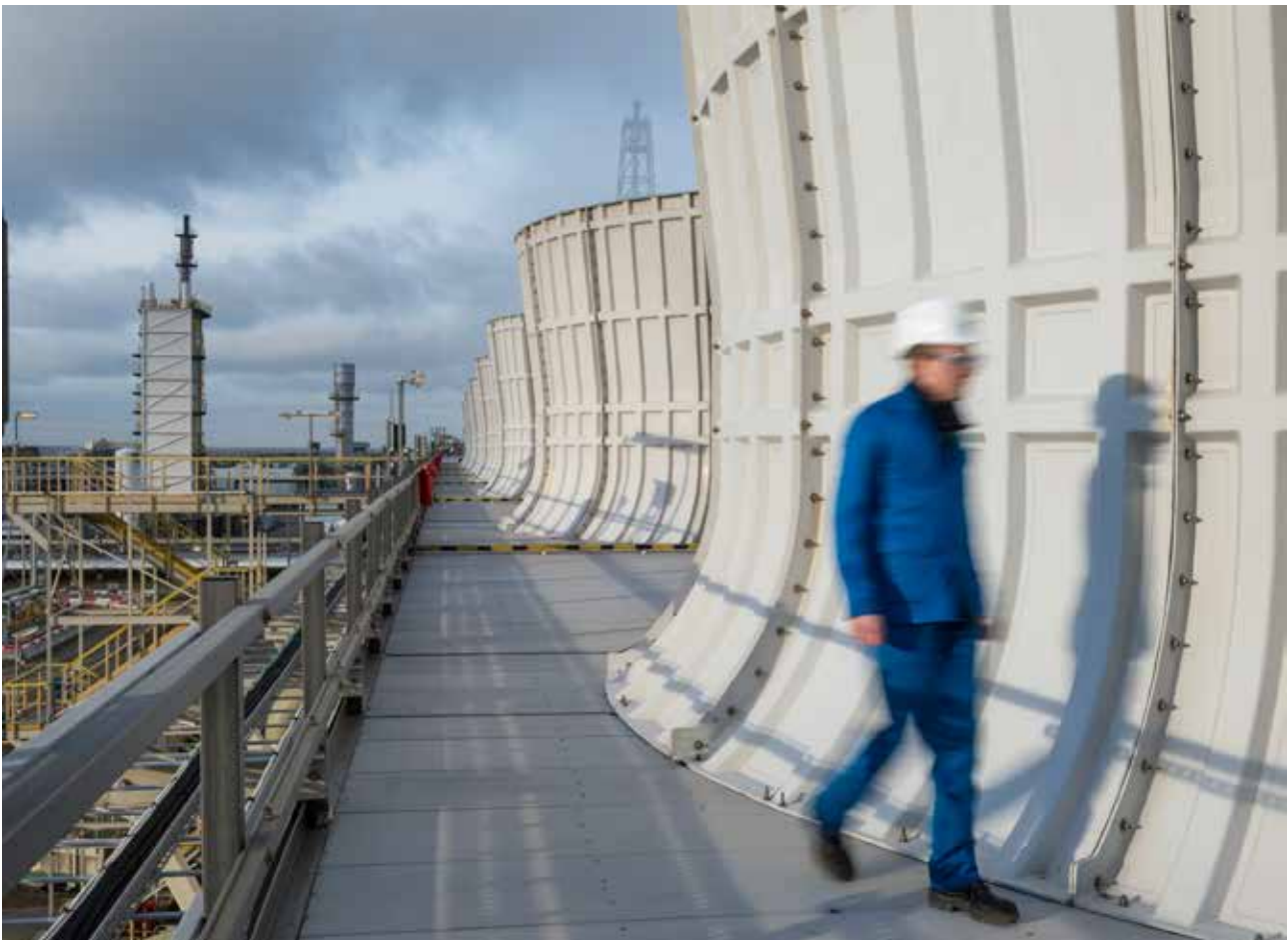
In addition to overall atmospheric emissions we are reporting a total greenhouse gas discharge of around 3.5 million tons of CO<sub>2</sub> equivalents. Greenhouse gas discharge comprises both direct emissions originating from our production and indirect emissions associated with the generation of imported energy. The most significant greenhouse gases discharged by BASF Antwerp are CO<sub>2</sub> and N<sub>2</sub>O (nitrous oxide).

We monitor our emissions closely. We also keep close tabs on technological developments that might have a positive impact on our emissions and greenhouse gasses discharged.

### Permits

- Constant monitoring of environmental performance
- Renewal of environmental permits at various facilities

In 2016, we worked on the renewal of environmental permits for facilities including MDI, polyetherols, amines, as well as various central services. We then examined the facility in all its technical details and meticulously updated all the data shown in the permit file. We permanently monitor whether our facilities comply with all environmental requirements.



We lowered our emissions, while keeping production volumes stable.



## Water

### ■ Cooling water circuit optimisation

#### Total water intake (million cubic meters)

2016	188	<div style="width: 100%;"></div>
2015	175	<div style="width: 92.6%;"></div>

#### Water intake by source – surface water (in %)

2016	99.4	<div style="width: 100%;"></div>
2015	99.3	<div style="width: 99.9%;"></div>

#### Water intake by source – drinking water (in %)

2016	0.61	<div style="width: 0.61%;"></div>
2015	0.75	<div style="width: 0.75%;"></div>

#### Production water usage (million cubic meters)

2016	10	<div style="width: 100%;"></div>
2015	10	<div style="width: 100%;"></div>

#### Cooling water usage (million cubic meters)

2016	648	<div style="width: 347.3%;"></div>
2015	711	<div style="width: 372.6%;"></div>

BASF manages water sparingly, using the right water for the right application. We draw a distinction between water for cooling, production and sanitation purposes. For industrial production for instance we use surface water from the ‘De Biesbosch’ freshwater tidal area. For cooling we use water we extract from the docks in the port of Antwerp. We use drinking water for the remainder. 2016 heralded the start of a trial project to recycle water available on site for use as process water.

In 2016, our total water intake was 188 million cubic meters and we used a total of 658 million cubic meters of water. Our water usage is much higher than our water intake because we re-use a large proportion of our water. We used the largest share of it (648 million cubic meters) for cooling, and 10 million cubic meters for production.

We re-use cooling water around 3.6 times before discharging it again. This figure is slightly lower than in 2015 (4.3), because we are seeking a balance between electricity consumption to cool water, the ambient temperature and the amount of water we take in.



BASF uses the right kind of water for each application.

## Water emissions

- Water emissions dropped by 20% over the last 10 years

### Water emissions, organic substances (COD) (in tons)

2016	1,122	
2015	1,135	

### Water emissions, nitrogen (in tons)

2016	121	
2015	109	

### Water emissions, heavy metals (in tons)

2016	1.33	
2015	1.17	

If production water becomes contaminated, we treat it in our biological water treatment plant, using bacteria. Our water treatment basins boast a total capacity of 44 million litres and are capable of treating wastewater for a population of 460,000, equivalent to a city like Antwerp.

Water emissions have dropped by 20% over the last ten years. This is a logical consequence of monitoring water treatment closely and intense quality surveillance of residual water from facilities. Water treatment handles wastewater from all facilities, including those of our on-site partners. High removal efficiency is achieved for both organic substances and nitrogen compounds.

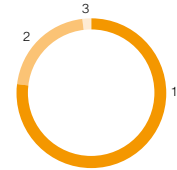
## Waste

### Total volume of waste (in tons)

2016	52,405	
2015	79,030	

### Waste treatment (in 2016)

1	re-utilisation	77%
2	incineration	21%
3	landfill	1.8%



BASF Antwerp opts for the optimum treatment process for each type of waste. It is our intention here to avoid waste in the first place. If this is not an option, we go for re-utilisation. We then look for solutions which consist of recycling the material, otherwise it is incinerated and energy is recovered from it. Finally, we opt for incineration as the method of disposal and landfill only as the last resort. We are constantly seeking better treatment methods.

Our Verbund plays an important part in this. In 2016 we were able to utilise one of our waste flows to a substantial extent in house, which meant a significant drop in the total volume of waste. We also did well in relative terms last year: over three quarters of our waste, excluding building waste, was re-utilised in 2016.

## IMPROVED: Quest for optimum water treatment

BASF is continually weighing up different options for deploying the right water quality for the right applications. A couple of years ago, we switched from drinking water to surface water to feed our processes. Thereafter, we committed to the IMPROVED (Integrale Mobiele PROCeswaternvoorziening Voor een Economische Delta, which translates as Integrated mobile process water supply for an economic delta) Interreg project. We intend to use this to conduct cross-border research on available technologies to treat water of diverse quality. This will enable us to utilise this water in production processes. We are working on this with, among others, Ghent University, Yara and Dow companies and Evides, our partner for process water. Construction of mobile research infrastructure started in 2016, it will be ready for deployment at BASF by the end of 2017.



Our water treatment facility has the capacity to treat the water of a city like Antwerp.



We analyze the water quality of the different kinds of water thoroughly.



BASF Antwerp seeks and finds many ways to reduce energy consumption.

## Energy

### ■ Verbund as the cornerstone of energy supply

#### Electricity consumption (MWh)

2016	1,665,309	<div style="width: 100%;"></div>
2015	1,665,639	<div style="width: 100%;"></div>

#### Steam consumption (in tons)

2016	5,888,268	<div style="width: 100%;"></div>
2015	5,534,506	<div style="width: 100%;"></div>

#### Fuel for energy, boilers (MWh)

2016	1,076,557	<div style="width: 100%;"></div>
2015	981,265	<div style="width: 100%;"></div>

We recover surplus energy from one facility and feed it into others. A smart steam network keeps energy surpluses and shortages in balance. If we need more energy, then it will come from our steam boilers and Zandvliet Power, the combined heat and power station on site (a joint venture with Electrabel). There are also six wind turbines on site, boasting a total capacity of 12 MW.

Our electricity consumption remained stable in 2016: higher consumption in some facilities was offset by a drop in consumption in others. On the other hand, steam consumption rose slightly. This was due to the fact that the butadiene facility was running at increased capacity. More residual gas was available in 2016, this was used as fuel for the steam boilers, which in turn increased their steam output.

## Energy efficiency

- Energy Policy Agreement
- ISO 50 001

Energy efficiency plays a major part in an energy-intensive business like ours. BASF Antwerp is part of the Flanders Energy Policy Agreement (EBO in Dutch) which runs from 2015 to 2020. This agreement stipulates that BASF is to write down energy-efficiency measures in an energy plan. An example of such measures at BASF was the installation of new heat exchangers.

What is more, BASF is required under the EBO to report on energy efficiency as well as setting up an energy management system. In doing so, BASF Antwerp is following the BASF Group and is opting for an ISO 50 001-certified standardised management system. We are preparing ourselves for certification. We are incorporating the requirements for this into existing work processes.

We are engaged in an ongoing quest for continuous improvement on site. The processes we are employing for this, we are also using to save energy. Using advanced data analysis, we are continuously improving our ability to map out how we can achieve these savings.



## Employees and society

### Employees



On September 1, we officially kicked off the dual learning system during a press event with sectorfederation essenscia and Flemish ministers of education Crevits and work Muyters.

To ensure that our many installations function smoothly, like a well-oiled machine, it is essential to put together the very best teams possible. We do so by attracting outstanding talents, offering them an excellent place to work and giving them optimal opportunities throughout their career.

#### Attracting talent

- Dual learning starts
- Intensive cooperation with educational partners

Attracting the right employees is something that begins very early on, and so BASF Antwerp maintains close ties with educational institutions. This ranges from organising company visits to participating in consulting bodies that deliberate on how to awaken an interest in science, technology, engineering and math (STEM) amongst young people of different ages. During the 2015 - 2016 school year, 49 groups of pupils and students came to visit us.

A high point in terms of educational collaboration was the initiation of the dual learning pilot project. BASF played a driving role in elaborating a dual learning program for chemical process technologies.

A further advantage for attracting talent is our well-developed traineeship policy, which is ideal for trying out life on the work floor. During the 2015-16 school year, 163 students

participated in a traineeship here - and for 51 of them, this was followed by a job. Nine trainees from previous years also found their way back to us. A wide range of traineeship forms are offered, from brief observation traineeships to much longer project traineeships that culminate in the writing of a thesis.

#### Bringing talents together

- 3,127 employees
- Intensive dialogue with managers

##### Number of employees (1)

Year	Number of employees
2016	3,127
2015	3,109

(1)According to IFRS standards: 2016: 3,035; 2015: 3,009

At the end of 2016, 3,127 employees worked at BASF Antwerp, a slight increase over the previous year. We hired 115 employees, of whom 9 were on delegation from other BASF Group subsidiaries. All age groups are represented. 47%, the largest group, are between the ages of 40 and 54, followed by the group of 26-39 year-olds (31,6%) and the group older than 55 (14,1%). The smallest group is constituted by those younger than 26 (7,3%).

Forming the best possible team begins by giving employees a chance to develop their potential. Over the past two years the dialogue between employee and manager has become more intensive and systematic. In this way, everyone





The focus is on learning by doing. Sometimes, a test set-up can be the solution, for example when learning to mount flanges.

gets a chance to tailor his job as much as possible to his skills and interests.

There are various ways to learn in order to help give the employees the right skills. As a general rule, we assume that one can learn 70% in practice and from colleagues, 20% through self-study and 10% via conventional education. Our training offer itself is also increasingly shifting towards the digital realm, an evolution that is undoubtedly destined to grow in importance.

Since 2015, new managers from all ranks of the company get an opportunity to participate in a New Leader program, where they not only receive theory about leadership, but immediately get a chance to implement this knowledge through practical exercises.

### Dual learning in chemical process technologies

- 27 students
- 3 schools (PITO Stabroek, Sint Carolus, Sint Niklaas and Don Bosco Haacht)
- 13 companies (including BASF, INEOS, Monsanto, Indaver)

The dual learning pilot project in the discipline of chemical process technologies began on 1 September 2016. Nine students from three different schools took up the challenge at BASF Antwerp. Practice makes perfect in the dual learning system, with the students spending more than half of their time right on the work floor. In this way they can work through the subject material and apply it in a realistic working environment, and they are even better able to make the link between theory and practice. Each dual learning student is assigned to an experienced mentor who helps them transform the theory gleaned from their books into practice.

### Eye on the future

- Flexibility
- Dialogue on workability

Careers are becoming longer and longer. That is why BASF Antwerp is conducting an intensive dialogue with the social partners to facilitate longer working lives and greater workability.

Employees can already enjoy certain measures that promote flexibility, such as occasionally working at home and flexitime. In 2016, we refined the flexitime system, with e.g. a flexible lunch break for those who wish to engage in sports or would like more time for themselves. Moreover, many colleagues also make use of possibilities for working part-time.



Proud employees had the chance to show their family around at our amines plant on the occasion of its 40th birthday.

## Social engagement

**"We create chemistry for a sustainable future" is our slogan. By committing ourselves in a well-considered manner to good causes in the field of education, culture or social engagement in the region, we can contribute to ensuring this sustainable future.**

The BASF Group has a worldwide harmonised policy on social engagement. The essence of that policy is to help achieve the Sustainable Development Goals (SDGs) of the United Nations. At the basis of these guidelines, BASF Antwerp focuses regional anchoring, cooperation with the right partners, the possibility of learning from one another and commitments that have a clear impact.

### Connection with the region

- Good neighbours
- A heart for the region

Around 50,000 residents live within a radius of 10 kilometers of our site. We keep them informed on a regular basis, and we also want to hear what they think. Therefore for over 10 years now we have been organising the BASF Neighborhood council, to which we regularly invite representatives from the region. Here they get an opportunity to ask questions and express their concerns. Another perennial favourite for informing our neighbours: our community magazine "Zij aan Zij" (meaning: Side by Side). In addition, we enter into contact with the neighborhood via the social media and our own website. We also have a special telephone number where our neighbors can always reach us if there is something urgent.

BASF also supports initiatives that are anchored in the Antwerp region, from support for local traditions and culture to local sports associations. BASF Antwerp is also a neighbor to the Groot Buitenschoor nature reserve and - through cooperation with the environmental association Natuurpunt – we ensure the necessary support for maintaining the area. We encourage our employees to roll up their sleeves and engage themselves in projects having a positive impact for the region. Under the denominator "Harten Troef", employees can



Employees are helping a good cause by lending a hand at primary school Klim-Op.

- as an exercise in team building - do volunteer work for good causes. In 2016 BASF teams worked in Kamanio, a restaurant for the underprivileged, helped out in the rehabilitation centre Pulderbos, and built a playground for the primary school Klim-Op.

### Connection with education

- Giving opportunities to young people
- Collaboration with schools

"Every talent counts" (Elk talent telt) is our motto. We want to create opportunities for everyone. An important element of this ambition is our cooperation with the Karel de Grote Hogeschool. Together we give young people with a migration background a better start in higher education. Through a wide range of actions conducted throughout the year and a summer school where they receive student counselling and an introduction to the world of post-secondary education. The first summer school was held in 2015, and it proved to be a great success. In 2016 the number of participants doubled and the summer school was held at two locations.

But this collaboration is not the only way in which we support education. We also work together with the University of Antwerp on safety and sustainability. Nor do we ignore secondary education. For example, at regular intervals we contribute measurement and inspection equipment that is no longer being used, which can then be used as highly welcome teaching material.

- Support requests per year

>350

- requests are evaluated in light of the BASF corporate strategy and our selection criteria
- 2/3rds of the requests receive a positive response, either with financial support or via material assistance



The project for students with a migration background was chosen as one of the four prize winners for the first Port of Antwerp Sustainability Award.

## Further information



### Pictures

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BASF Antwerp NV, Michel Wiegandt, Filip Claessens, Jansen en Janssen Creative Content, Wim Van Nueten

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