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2 Management's Report

Supplier Management

# **Responsible Conduct Along the Value Chain**

# Supplier Management

# SUPPLIERS

- CUSTOMERS

Our objective is to secure competitive advantages for BASF through professional procurement structures. Our suppliers are an important part of our value chain. Together with them, we aim to create value and minimize risks.

# Strategy

- Sustainability-oriented supply chain management
- New goal for sustainability evaluations of relevant spend

Our partnerships with suppliers are based on mutual value creation, as well as a reliable supply of raw materials, technical goods and services at competitive prices. We work together in an open and transparent way to generate long-term benefits for both sides. In doing so, we create added value that goes above and beyond procurement alone, for example, by developing solutions to target market-specific customer requirements together with our suppliers. Our sustainability-oriented supply chain management contributes to risk management by clarifying our expectations and standards for our suppliers, and by supporting them in carrying out our requirements. We count on reliable supply relationships and want to make our suppliers' contribution to sustainable development transparent to us. That is why we have set ourselves the goal of evaluating the sustainability performance of 70% of the BASF Group's relevant suppliers<sup>1</sup> and developing action plans for any necessary improvements by 2020. The proportion of relevant suppliers evaluated by the end of 2018 was 60%. Due to the size and scale of our supplier

portfolio, our suppliers are evaluated based on risk, including both country and industry-specific risks.

As part of the updated corporate strategy, we resolved in 2018 to step up our efforts to improve our sustainability performance along the supply chain in the future. To this end, we have expanded our sustainability evaluations of relevant suppliers and integrated these into a new goal to improve our sustainability performance in procurement: By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group's relevant spend<sup>2</sup> and will develop action plans where improvement is necessary. We will work towards having 80% of suppliers improve their sustainability performance upon re-evaluation.

# Worldwide procurement

Our more than 70,000 Tier 1 suppliers play a significant role in value creation at our company. We work in long-term partnership with companies from different industries around the world. They supply us with important raw materials, chemicals, investment goods and consumables, perform a range of services and are innovation partners. BASF acquired raw materials, goods and services for our own production totaling approximately €38.5 billion in value in 2018. There were no substantial changes to our supplier structure in 2018.

# What we expect from our suppliers

# Global Supplier Code of Conduct

New suppliers are selected and existing suppliers are evaluated not only on the basis of economic criteria, but also environmental, social and corporate governance standards. Our Supplier Code of Conduct is founded on internationally recognized guidelines, such as the principles of the United Nations' Global Compact, the U.N. Guiding Principles on Business and Human Rights, the International Labor Organization (ILO) conventions and the topic areas of the Responsible Care initiative. The Code of Conduct covers compliance with human rights, labor and social standards, and antidiscrimination and anticorruption policies in addition to protecting the environment. We updated our Supplier Code of Conduct in 2018 in response to stricter requirements and new developments relating to the U.N. Guiding Principles on Business and Human Rights and the ILO. Issues such as modern slavery and human trafficking were incorporated, as well as our requirement that suppliers implement grievance mechanisms for their employees and stakeholders. We also added a reference to our own grievance mechanism – our compliance hotline, which suppliers and their employees can contact if they have questions or complaints. We are informing our existing suppliers of the updated Code of Conduct.

In 2018, we started the step-by-step rollout of a new registration portal for suppliers, in which our Code of Conduct is already integrated. This requires suppliers to commit to these values on registration. 4,866 suppliers did this and registered via the portal in 2018. A country-based risk analysis forms the basis of our selection process for new suppliers. Based on the country-related risks identified, we specifically asked suppliers in South America and Asia in particular to commit to the values of our Supplier Code of Conduct in 2018. Only those companies that have committed to our Code of Conduct actually became new suppliers.

# Training and partnerships

In 2018, we continued our collaborations in relevant procurement markets such as China to instruct suppliers on sustainability standards. 116 suppliers received training in 2018 as part of a local partnership with the East China University of Science and Technology in Shanghai, for example. In addition, we instructed 962 BASF employees on sustainability-oriented supplier management and responsible procurement. These are ways in which poten-

<sup>1</sup> We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices and our purchasers' assessments. We also use further sources of information to identify relevant suppliers such as evaluations from Together for Sustainability (TfS), a joint initiative of chemical companies for sustainable supply chains.

<sup>2</sup> We understand relevant spend as procurement volumes with relevant suppliers as defined above

our suppliers.

tial supply chain risks can be identified and minimized together with

BASF is one of 11 founding members of the German Business Initiative for Sustainable Value Chains established by the German sustainability network econsense and the Wittenberg Center for Global Ethics (WCGE). As part of this initiative, we help suppliers to improve their sustainability performance, for example, through training. The first supplier training events of the initiative were held in 2018 in China and Mexico.

In Brazil, we work together with the nongovernmental organization Integrare, which promotes diversity in supply chains. Integrare supports small and medium-sized businesses run by people with disabilities or socially disadvantaged minorities, for example, by offering special training and actively encouraging partnerships with larger companies.

C For more information on decent work in global supply chains, see page 39

# **Evaluating our suppliers**

 Together for Sustainability initiative aims to harmonize and standardize supplier assessments and audits

BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluations and auditing. With the help of TfS, we promote sustainability in the supply chain. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. The evaluation process is simplified for both suppliers and TfS member companies by a globally uniform questionnaire. The 22 members of the initiative conducted a total of 3,767 sustainability assessments – including both initial and follow-up assessments – and 358 audits in 2018. In 2018, over 200 suppliers attended sustainability training in Shanghai as part of the TfS initiative. The initiative was named the "Best Third-Sector/ Non-for-Profit Procurement Project" by the global Chartered Institute of Procurement Supply (CIPS) in September 2018.

Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. A total of 100 raw material supplier sites were audited on sustainability standards in 2018. We also received sustainability assessments for 546 suppliers from an external service provider. 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 did not occur in any case in 2018. We use this approach to evaluate suppliers with an elevated sustainability risk at least every five years. The approach itself is regularly reviewed to identify possibilities for optimization.

🖵 For more information on Together for Sustainability, see basf.com/en/together-for-sustainability

# Audit results

The audits conducted over the past few years have identified some deviations with respect to environmental, social and corporate governance standards, for example in waste and wastewater management and relating to occupational safety, working hours and minimum wage. In the follow-up audits conducted in 2018, we found improvements in all areas. None of our 2018 audits identified instances of child labor. For the suppliers we reviewed, persons under 18 were excluded from overtime and dangerous work. We did not find any incidents of forced labor in 2018.

BASF undertook a thorough examination of the issues raised at platinum supplier Lonmin Plc, London, U.K., in connection with the events in Marikana, South Africa.<sup>1</sup> In 2018, we continued our regular dialog with both Lonmin and with local stakeholders, such as leading industry and human rights representatives. Topics discussed with Lonmin included the results of the follow-up audit, which we commissioned an internationally recognized audit firm to perform in 2017. This audit identified positive developments in several areas such as working standards, as well as a number of gaps, for example, not implementing a local, anonymous grievance mechanism. Lonmin introduced this in 2018. We will continue to monitor the audit process and maintain our dialog with Lonmin. In 2018, BASF played an active role in the establishment of a sector initiative by several precious metal processing companies. The initiative aims to improve the long-term situation in South Africa's platinum mining belt and tackle challenges together.

🖵 For more information on suppliers, see basf.com/suppliers

<sup>1</sup> In 2012, an extended strike at a mine operated by Lonmin PIc, London, UK, in Marikana, South Africa, culminated in a violent confrontation between mine workers and armed South African police. Employees of the platinum supplier Lonmin were among the fatalities. For more information on the supplier relationship with Lonmin, see basf.com/audits-lonmin.

2 Management's Report Raw Materials

# 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 concept: The by-products of one plant often serve as feedstock elsewhere, helping us to use raw materials more efficiently. The value created by our Verbund is also part of our contribution to a circular economy. One example is our ChemCycling project (see box on the right).

In 2018, BASF purchased a total of around 30,000 different raw materials from more than 6,000 suppliers. Important raw materials include naphtha, natural gas, methanol, ammonia and benzene. In addition to fossil resources, we also employ renewable raw materials where appropriate. We use these to manufacture products that either cannot be made with fossil resources, or only at significantly greater effort, for example. Depending on the application, either fossil or renewable raw materials could be the better solution. Renewable raw materials are not sustainable per se, but can contribute to sustainability by, for example, reducing greenhouse gas emissions.

# **Chemical recycling**

Recycling is becoming increasingly important due to the growing awareness of sustainability in the markets and regulatory developments. In 2018, BASF launched a project to manufacture products from chemically recycled plastic waste on an industrial scale.



In the ChemCycling project, our partners use thermochemical processes such as gasification or pyrolysis to transform plastic waste into syngas or pyrolysis oil. The first pyrolysis oil derived from plastic waste by our partners was fed into the BASF Verbund in 2018. The resulting products are of equal quality to products manufactured from fossil feedstock. Introducing this recycled feedstock back into the beginning of the value chain also means that we can calculate the percentage of recycled materials in certain products manufactured in the Verbund and offer our customers certified products.

The project's long-term goal is to make plastics recyclable that cannot yet be recycled, such as mixed plastics or plastics with residues. In the future, chemical recycling can make a significant contribution to reducing the amount of plastic waste that is disposed of in landfill or incinerated, while saving fossil resources. We are conducting Eco-Efficiency Analyses to ensure that this approach is sustainable compared with thermal recovery.

For more information, see basf.com/en/chemcycling

2 Management's Report

Raw Materials

# **Renewable raw materials**

# Numerous projects and cooperative ventures to improve sustainability along the value chain

In 2018, around 5.3% of the raw materials we purchased worldwide were from renewable resources. To make the use of these materials more competitive, we work on product innovations based on renewable raw materials as well as on enhancing production processes. We also further established our biomass balance approach on the market in 2018. 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 model is certified by an independent third party (TÜV Süd). Our Verbund production ensures that the characteristics and quality of all end products remain unchanged and that our customers can use them as usual. This method has already been applied for more than 60 BASF products - for example, for superabsorbents, dispersions, plastics such as polyamides and polyurethanes, and for intermediates available on the market as "drop-in products." These can be used in place of previously employed products in the production process without having to change the process itself.

Palm oil, palm kernel oil, and their derivatives are some of our most important renewable raw materials. We aim to ensure that these raw materials come from sustainable, certified sources, and actively support the Roundtable on Sustainable Palm Oil (RSPO). In 2018, we published our second progress report – the BASF Palm Progress Report – for greater transparency in the value chain. Based on our voluntary commitment to sustainably source palm oil products, we purchased 127,000 metric tons of certified palm kernel oil in 2018. This represents around 70% of our total volume. Demand for certified products increased significantly again. As a result, in 2018 we increased sales volumes of certified palm oil and palm kernel oil-based products for the cosmetics and detergent and cleaner industries by more than 50% compared with the previous year. We are expanding our offering of certified sustainable products in accordance with the RSPO's Mass Balance supply chain model. This helps our customers to meet their obligations to customers, consumers and stakeholders. BASF also continues to drive forward the RSPO supply chain certification of our sites for cosmetic ingredients. In 2018, 22 production sites worldwide were RSPO certified. Our goal is to only source RSPO certified palm oil and palm kernel oil by 2020, provided it is available on the market. By 2025, this voluntary commitment will be expanded to include the most important intermediate products based on palm oil and palm kernel oil; these include fractions and primary oleochemical derivatives as well as edible oil esters.

In addition, our BASF Palm Sourcing Policy addresses the requirements for protecting and preserving forests and peatland, as well as the involvement of local communities. At the same time, we will step up our efforts to improve transparency and traceability in the supply chain. We were most recently able to trace 79% of our overall oil palm exposure.

BASF and Henkel have cooperated with the development organization Solidaridad since 2016 to better involve smallholder farmers in Indonesia and improve their living conditions. Smallholders complete farming and environmental training as part of the Farmer Field School initiative, with a focus on efficient and sustainable growing practices and health and safety standards. Since 2016, more than 1,800 smallholders have completed a training program as part of the Farmer Field School initiative.

BASF continues to promote the establishment of a certified and transparent supply chain for coconut oil in the Philippines and Indonesia in a joint project with Cargill, Proctor & Gamble and the German governmental agency for international cooperation (Gesellschaft

für Internationale Zusammenarbeit, or GIZ), supported by the Rainforest Alliance and the Philippine Coconut Authority. Thanks to the initiative, the first certified sustainable coconut oil was produced in the Philippines in 2018. The project is partly financed by the develoPPP.de program of the German Federal Ministry for Economic Cooperation and Development (BMZ). It is expected to improve income and living standards for around 3,300 smallholders.

The Sustainable Castor Initiative – Pragati, a joint initiative established by BASF together with Arkema, Jayant Agro and Solidaridad, made further progress in 2018. With the initiative, the project members aim to improve the economic situation of castor oil farmers and their workers in India. Smallholders are trained and audited based on a newly developed sustainability code. The goal is to optimize their yields, reduce the impact on the environment and be able to offer certified sustainable castor oil on the global market. Since the project was initiated, more than 2,700 smallholders and over 2,000 hectares of land have been certified for sustainable castor oil cultivation. The smallholders certified under the program have been able to increase their yields by 55% compared with the 2016 baseline. In 2018, the project was extended for another three years, from 2019 to 2022.

For more information on renewable resources, see basf.com/renewables For more information on our voluntary commitment to palm oil products, see basf.com/en/palm-dialog 2 Management's Report

# Raw Materials

# Mineral raw materials

Sourcing mineral raw materials responsibly is important to BASF. We procure a number of mineral raw materials, such as precious metals, which we use to produce mobile and process emissions catalysts, as well as various minerals for the production of battery materials.

In suspicious cases, we track the origins of minerals as defined in the Dodd-Frank Act – including tin, tantalum, tungsten, their ores and gold – to see if they come from mines in conflict regions. We reserve the right to have suppliers audited 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 Congo or its neighboring countries.

We intend to implement the E.U. Conflict Minerals Regulation published in 2017 by the 2021 deadline. The regulation defines supply chain due diligence obligations that must be met by importers and processors of certain mineral raw materials originating from conflict regions and high-risk areas.

In addition to responsible procurement of conflict minerals, BASF is committed to a responsible and sustainable global supply chain for cobalt and mica.

For instance, BASF is a founding member of the Responsible Cobalt Initiative and the World Economic Forum's Global Battery Alliance. These initiatives were created by companies in collaboration with international organizations such as the OECD and UNICEF to address fundamental challenges in the supply chain of battery materials. The most effective way of addressing these challenges is in cooperation with partners along the value chain. One example of this is our involvement in a joint pilot project launched in 2018 with BMW, Samsung SDI, Samsung Electronics and the German governmental agency for international cooperation (Gesellschaft für Internationale Zusammenarbeit, or GIZ). The companies tasked GIZ with setting up a three-year pilot mining project to identify how to improve working conditions in artisanal mines, as well as living conditions in the surrounding communities in the Democratic Republic of Congo. Although BASF does not procure cobalt from artisanal mines in the Democratic Republic of Congo and our suppliers confirm that they do not either, we support the cross-industry project as it contributes to the goals of the Global Battery Alliance.

BASF mainly uses the mineral raw material mica and mica-based effect pigments in the production of coatings. Our demand is largely met with mica from our own mine in Hartwell, Georgia. We require our mica suppliers to comply with internationally recognized standards, including the prohibition of child labor. As a member of the Responsible Mica Initiative, BASF is actively working to eradicate child labor and unacceptable working conditions in the mica supply chain in India. 2 Management's Report 3 Corporate Governance

# Responsible Care Management System

**Environmental Protection**, **Health and Safety** 

# **Responsible Care Management System**

SUPPLIERS BASE	CUSTOMERS
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The protection of people and the environment is our top priority. Our core business - the development, production, processing and transportation of chemicals - demands a responsible approach. We systematically address risks with a comprehensive Responsible Care Management System, which is continually being further developed. We expect our employees and contractors to know the risks of working with our products, substances and plants and handle these responsibly.

# **Responsible Care Management System**

- Global directives and standards for safety, security, health and environmental protection
- Regular audits to monitor performance and progress

BASF's Responsible Care Management System comprises the global directives, standards and procedures for safety, security, health and environmental protection for the various 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. Our policies and requirements are constantly updated. We also maintain a dialog with government institutions, associations and other international organizations.

We set ourselves ambitious goals for safety and security, and health and environmental protection. We regularly conduct audits to monitor our performance and progress. We assess the potential risks and 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 to learn from these; appropriate measures are derived according to specific cause analyses.

For more information on Responsible Care®, see basf.com/en/responsible-care

# Audits

# 148 safety, security, health and environmental protection audits performed

Regular audits help ensure that standards are met for safety, security, health and environmental protection. We conduct audits at BASF sites and at companies in which BASF is a majority shareholder. Sites and companies acquired as part of acquisitions are audited in a timely manner to bring these into line with our standards and directives as necessary. We have defined our regulations for Responsible Care audits in a global Group requirement. During our audits, we create a safety and environmental profile that shows if we are properly addressing the existing hazard potential. If this is not the case, we agree on measures and monitor their implementation, for example, with follow-up audits.

Our Responsible Care audit system complies with the ISO 19011 standard and is certified according to ISO 9001. Worldwide, 181 BASF production sites are certified in accordance with ISO 14001 and EMAS (Eco-Management and Audit Scheme) (2017: 178). In addition, 53 sites worldwide are certified in accordance with OHSAS 18001.

In the BASF Group in 2018, 126 environmental and safety audits were conducted at 84 sites (2017: 109 audits at 83 sites). The focus was on auditing sites based on the level of risk. For production plants with a medium and high hazard potential, we conducted an additional 44 short-notice audits at 38 sites (2017: 63 audits at 47 sites). We audited 22 sites with respect to occupational medicine and health protection in 2018 (2017: 13). In addition, 34 health performance control visits were conducted at sites with low to medium health risks (2017: 31).

C For more information on occupational safety and health protection, see page 96 onward

## Costs and provisions for environmental protection in the BASF Group<sup>1</sup>

Million €		
	2018	2017
Operating costs for environmental protection	1,077	1,024
Investments in new and improved environmental protection plants and facilities <sup>2</sup>	277	234
Provisions for environmental protection measures and remediation <sup>3</sup>	639	600

1 Including provisions and environmental protection expenses from the discontinued oil and gas business. 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.

## A For more information, see the Notes to the Consolidated Financial Statements on pages 220 and 245

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# Safety in production



For occupational and process safety as well as health and environmental protection and corporate security, we rely on comprehensive preventive measures and expect the cooperation of all employees and contractors. Our global safety and security concepts serve to protect our employees, contractors and neighbors as well as to prevent property and environmental damage and protect information and company assets.

# Strategy

- Global safety standards
- Strengthening risk awareness
- Comprehensive incident analyses and global experience and information exchange

The safety of our employees, contractors, neighbors and protecting the environment is our top priority. This is why we have set ourselves ambitious goals for occupational and process safety as well as health protection.

We stipulate globally mandatory standards for safety, security, and environmental and health protection. A worldwide network of experts supports us in their implementation. As part of our continuous improvement process, we regularly monitor progress toward our goals.

We promote risk awareness for every individual with measures such as systematic hazard assessments, specific and ongoing qualification measures and global safety initiatives.

We analyze accidents, incidents and their causes in detail at a global level to learn from these. Hazard analyses and the risk minimization measures derived from them are an important prevention tool. We also promote regular dialog across different sites to strengthen risk awareness among our employees and contractors, to learn from examples of good practice and in this way, continually develop the safety culture.

By 2022, we will introduce digital solutions and applications at more than 350 of our plants to further increase the safety, security, planning capability and availability of our plants. For example, augmented reality solutions will support daily operations by providing direct, fast access to the required information with mobile end devices and apps. Other digital solutions will enable us to perform predictive maintenance or efficiently simulate maintenance and production processes in digital plant models.

Based on our corporate values, leaders serve as safety role models for our employees. Since July 2018, individual dialogs with experts on environmental protection, health, safety and security have been conducted with newly appointed senior executives to discuss function-specific issues and challenges.

# **Global safety initiative**

1 Hours worked by BASF employees, temporary employees and contractors. Our previous goal was to reduce the worldwide lost-time injury rate per one million working hours (BASF and temporary employees) to 0.5 at most by 2025

# Focus of Global Safety Days: "Understand risk, take action!"

Our global safety initiative was established in 2008 and plays a key role in the ongoing development of the safety culture. With over 800 activities at 325 sites, the focus of our Global Safety Days was "Understand risk, take action!" in 2018. The aim was to increase risk awareness to identify and eliminate threats before they become a danger – whether at work, on the road or at home. Around 12,000 employees and contractors registered to participate at the Ludwigshafen site alone. This involvement and lively discussion make a major contribution to our safety culture.

Given the set of the s

# Occupational safety

- New tools and global dialog to prevent work-related accidents
- Employees and contractors worldwide instructed on safe behavior

We have adapted our incident reporting and goals to the recommendations of the International Council of Chemical Associations (ICCA), the European Chemical Industry Council (CEFIC) and the German Chemicals Industry Association (VCI). Our aim is to reduce the worldwide lost-time injury rate to no more than 0.1 per 200,000 working hours by 2025.<sup>1</sup>

# 2025 target

Reduction of worldwide lost-time injury rate per 200,000 working hours ≤0.1

To prevent work-related accidents, we encourage and promote risk-conscious behavior and safe working practices for every individual, learning from incidents and regular exchange of experiences (see box on page 97). We are constantly refining and enhancing our requirements.

# **Global dialog improves risk awareness**

A new global tool was launched in mid-2018 to help employees detect threats faster and better assess the risks involved. Our new, global requirement on key safety-related workflows emphasizes risk-conscious, safe working practices. A standardized risk matrix was adopted in 2018 to be able to determine and assess the hazard potential of incidents consistently across the company. We introduced new indicators such as checking work permits on-site to identify trends at an early stage. Around the world, employees and experts regularly share their insights and learnings, including – since 2018 – in short keynote talks.

In addition to the legally required briefings, we also held training courses on safe procedures in 2018 to strengthen risk awareness among our employees and contractors and prevent work-related accidents.

Furthermore, our training center at the Ludwigshafen site in Germany has offered continuous further education on diverse safety and security topics for employees and contractors since 2010. Some 18,000 participants received training there in 2018.

In 2018, 0.3 work-related accidents per 200,000 working hours<sup>1</sup> occurred at BASF sites worldwide. The proportion of chemical-related accidents rose slightly to 6% (2017: 5%). Unfortunately, there were three fatal work-related accidents in 2018 (2017: 2). BASF is working together with the authorities to analyze the incidents in depth and is using the findings to derive appropriate measures.

In February 2018, one employee died from injuries sustained in falling from a tank container at the Antwerp site in Belgium. Measures to prevent such accidents were taken following the incident. For example, existing training was updated to make working at heights an even greater focus. One employee of a contractor died during loading work at the Flotzgrün landfill site near Ludwigshafen, Germany, in February 2018. He became trapped during work with a construction vehicle. In November, one employee of a contractor died from injuries sustained after being struck by a falling sliding door at the Jacareí site in Brazil. In all cases, BASF is supporting the relevant authorities in their investigations into the circumstances and causes of the accidents. We use the findings of investigations into accidents to take appropriate measures to prevent these from happening again.

For more information on occupational safety, see basf.com/occupational\_safety

# Process safety

- Regular review of plant protection plans and performance of safety inspections and safety-related measures
- Global initiatives to reduce process safety incidents
- Network of experts and global training methods foster dialog

Process safety is a core part of safe, effective and thus future-proof production. We meet high safety standards in the planning, construction and operation of our plants around the world. These meet and, in some cases, go beyond local legal requirements.

Our global process safety standards provide the framework for the safe construction and operation of our plants as well as the protection of people and the environment. Our experts have developed a protection plan with the appropriate safety inspections for every plant that considers the key aspects of safety, health and environmental protection – from conception to startup – and stipulates specific protection measures.

In order to maintain the highest level of safety at our plants across their entire life cycle, we review the implementation of our protection plans in all facilities at regular intervals and depending on risk potential, as well as the on-time performance of the required safety inspections and any resulting safety-related measures. We regularly update our plants' safety and security concepts in line with changing technologies and as necessary.

# 2025 target

Reduction of worldwide process safety incidents per 200,000 working hours ≤0.1

In 2018, we adapted our reporting on accidents and process safety incidents to the recommendations of the International Council of Chemical Associations (ICCA), the European Chemical Industry Council (CEFIC) and the German Chemicals Industry Association (VCI). We now apply stricter reporting thresholds and use the number of process safety incidents per 200,000 working hours as a key performance indicator. We have set ourselves the goal of reducing process safety incidents to a rate of no more than 0.1 per 200,000 working hours by 2025. In 2018, we recorded 0.3 process safety incidents per 200,000 working hours<sup>2</sup> worldwide. We pursue continual improvement by investigating every incident in detail, analyzing root causes and using the findings to derive suitable measures.

Effectively reducing process safety incidents starts with knowing the potential risks. Around the world, we promote initiatives to discuss incidents and their causes, as well as to sensitize others to potential safety risks. In North America, for example, a key priority in 2018 was detecting all leaks. At the Ludwigshafen site in Germany and at other European sites, the focus was on sharing measures to improve

<sup>1</sup> Hours worked by BASF employees, temporary employees and contractors. We previously reported on the number of lost-time injuries per one million working hours worldwide (BASF and temporary employees). In 2017, 1.4 work-related accidents per one million working hours occurred at BASF sites worldwide. The rate of work-related accidents for contractors was 1.4 per one million working hours in 2017. The 2017 figure has been adjusted due to updated indicator definition, the rate of work-related accidents for 2017 would have been 0.3 per 200,000 working hours.

<sup>2</sup> Hours worked by BASF employees, temporary employees, temporary employees and contractors. Our previous goal of reducing process safety incidents to a rate of no more than 0.5 per one million working hours (BASF and temporary employees) by 2025 largely followed the definition set by the European Chemical Industry Council (CEFIC). In 2017, the process safety incident rate per one million working hours was 2.0.

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operational safety. In addition, our training methods are constantly refined and enhanced to increase risk awareness.

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Safety in production

We are working on increasing the availability of our plants and determining the optimum point in time for maintenance measures and revamping/refurbishment. The aim is to further reduce unscheduled shutdowns. To achieve this, we launched a digitalization project in 2017, which was implemented at a number of plants in Ludwigshafen, Germany in 2018. In 2019, we plan to expand this to further plants in Ludwigshafen and at our sites in Schwarzheide, Germany, and Antwerp, Belgium. We want to roll the project out worldwide in 2020.

We play an active role in improving process safety around the world in a global network of experts, through our involvement in organizations such as the International Council of Chemical Associations (ICCA), and by fostering dialog with government institutions.

For more information on process safety, see basf.com/process\_safety

# Health protection

3 Corporate Governance

Global standards for corporate health management

4 Consolidated Financial Statements

 2018 Global Health Campaign "Life. Saving. Heroes." focuses on cardiopulmonary resuscitation (CPR)

Our global corporate health management serves to promote and maintain the health and productivity of our employees. Our worldwide standards for occupational health are specified in a directive that is implemented by a global network of experts. This was once again supported by numerous emergency drills and health promotion measures in 2018.

We measure our performance in health protection using the Health Performance Index (HPI). The HPI comprises five components: recognized occupational diseases, medical emergency preparedness, first aid, preventive medicine and health promotion. Each component contributes a maximum of 0.2 to the total score. 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 once again reached the ambitious goal of exceeding 0.9 each year in 2018 (2017: 0.97).<sup>1</sup>

Annual target <sup>1</sup>	
Health protection Health Performance Index Maximum score 1.0	>0.9

Our 2018 Global Health Campaign "Life. Saving. Heroes." focused on cardiopulmonary resuscitation (CPR). We sensitized our employees about the issue with the ultimate aim of increasing the rate of CPR initiated by laypersons. This significantly increases a person's chances of survival if they suffer cardiac arrest in private life or at work. Over 480 sites worldwide took part in the health campaign and offered CPR training. We raise employee awareness of health 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 information on occupational medicine, health campaigns and the HPI, see basf.com/health

# Emergency response, corporate security and cybersecurity

- Regular review of emergency systems and crisis management structures
- Comprehensive protection measures against third-party interference

We are well prepared for crisis situations thanks to our global crisis management system. In the event of a crisis, our global, regional or local emergency response plans and crisis management structures are engaged, depending on the impact scope. We involve situation-related partners and suppliers as well as cities, communities and neighboring companies.

We regularly check our emergency systems, crisis management structures and drill procedures with employees, contractors, local authorities and emergency rescue workers. For example, in 2018 we conducted 224 drills and simulations in Ludwigshafen, Germany, to instruct participants on our emergency response measures.

We analyze the potential safety and security risks associated with investment projects and strategic plans, and define appropriate safety and security concepts. Our guiding principle is to identify risks for the company at an early stage, assess them properly and derive appropriate safeguards.

We protect our employees, sites, plants and company know-how against third-party interference. This includes, for example, potential terrorist risks in the communities surrounding our production sites

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Safety in production

and addressing in depth the issue of cybersecurity. BASF has a comprehensive program in place to continually improve its ability to prevent, detect and react to cybersecurity incidents. By establishing a global Cyber Security Defense Center, BASF significantly expanded the availability of its cybersecurity experts to ensure around-the-clock protection. We cooperate closely with a global network of experts and partners to ensure that we can protect ourselves against cyberattacks as far as possible. In 2018, we therefore expanded our IT security certification according to ISO 27001, which was introduced in 2008.

Around the world, we work to sensitize all employees about protecting information and know-how. For example, we further strengthened our employees' awareness of risks in 2018 with training, case studies and interactive offerings. We have defined mandatory information protection requirements to ensure compliance with our processes for protecting sensitive information and perform audits to monitor this.

Our worldwide network of information protection officers comprises more than 600 employees. They support the implementation of our uniform requirements and hold events and seminars on secure behaviors. We provided information protection instruction to more than 33,000 participants in 2018. Our standardized Group-wide recommendations for the protection of information and knowledge were expanded to include additional guidance for employees and updated in line with current developments.

We inform business travelers and transferees about appropriate protection measures prior to and during travel in countries with elevated security risks. After any major incident such as a terrorist attack or a natural catastrophe, we can use a standardized global travel tracking system to locate and contact employees in the affected regions. Aspects of human rights related to site security are a component of the global qualification requirements of our security personnel. Respect for human rights is a mandatory element of any contract with service providers of the BASF Group who are active in this area.

For more information on emergency response, see basf.com/emergency\_response For more information on security, see basf.com/corporate-security

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2 Management's Report Product stewardship

# Product stewardship

- SUPPLIERS	- BASF	- CUSTOMERS

We review the safety of our products from research and development through production and all the way to our customers' application. We continuously work to ensure that our products pose no risk to people or the environment when they are used responsibly and in the manner intended.

# Strategy

 Global directives with uniformly high standards for product stewardship

We are committed to continuously minimizing the negative effects of our products on the environment, health and safety along the value chain – from development to disposal. This commitment to product stewardship is enshrined in our Responsible Care<sup>®</sup> charter and the initiatives of the International Council of Chemical Associations (ICCA). We also ensure uniformly high standards for product stewardship worldwide. In some cases, we have committed to voluntary initiatives, which go beyond the local legal requirements.

We provide extensive information on all our chemical sales products to our customers with safety data sheets in around 40 languages. This is achieved with the help of a global data base 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 or application-specific product requirements. In associations and together with other manufacturers, BASF is pushing for the establishment of voluntary global commitments to prevent the misuse of chemicals. Our risk assessment goals support the implementation of initiatives such as the Global Product Strategy (GPS) of the ICCA. GPS is establishing worldwide standards and best practices to improve the safety management of chemical substances. In addition, we are also involved in initiatives such as workshops and training seminars in developing countries and emerging markets, including in China and the Philippines in 2018. In order to facilitate public access to information, we are involved in the ICCA online portal that provides more than 4,500 GPS safety summaries.

Generation and GPS, see basf.com/en/gps

# Global target

By 2020, we will conduct risk assessments for more than 99% of the substances and mixtures sold by BASF worldwide in quantities of more than one metric ton per year. We reached 91% of this goal in 2018 (2017: 76.2%).<sup>1</sup> 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.

>99%

# 2020 target<sup>1</sup>

Risk assessment of products that we sell in quantities of more than one metric ton per year **REACH** and other chemical regulations

# Final registration phase of REACH successfully completed

BASF has completed the third and final registration phase of the E.U. chemicals regulation, REACH, successfully and on time. All substances produced in annual volumes between one and one hundred metric tons were registered by the deadline of May 31, 2018. Above and beyond this, our REACH activities continue to be determined by E.U. authorities' decisions on additional studies in connection with the evaluation of submitted dossiers. BASF is also obligated to continuously update the registration dossiers it has submitted.

We apply the experience we have gathered with REACH to fulfill new legal requirements around the world, such as in South Korea and Turkey. BASF took the industry lead for a significant share of substance registrations in South Korea and submitted all registrations for priority existing chemicals by the July 2018 deadline.

We continue to see a rise in both regulatory requirements for agrochemicals and the number of additional studies required to obtain or extend approval for crop protection products. Potential risks for people and the environment are carefully assessed and minimized throughout the research, development and registration process for crop protection products. We perform a large number of scientific studies every year to ensure that our products meet the highest safety requirements.

1 Our updated corporate strategy realigns our goals from 2019 onward; as a result, we will no longer report on the global risk assessment goal. Furthermore, this goal has become obsolete due to the legal requirement to make chemical risk assessment data available worldwide under regulations such as REACH. For more information on our strategy and goals, see page 25 onward.

2 Management's Report Product stewardship

# Environmental and toxicological testing

# Use of alternative methods for animal studies

Before launching products on the market, we subject them to a variety of environmental and toxicological testing. We apply state-ofthe-art knowledge in the research and development phase of our products. For instance, we only conduct animal studies when they are required by law and approved by respective authorities. Animal studies are at times stipulated by REACH and other national legislation outside the European Union in order to obtain more information on the properties and effects of chemical products.

We adhere to the specifications laid down by the German Animal Welfare Act as well as the requirements of the Association for Assessment and Accreditation of Laboratory Animal Care – the highest standard for laboratory animals in the world. We are continually developing and optimizing alternative methods, and we use them wherever it is possible and accepted by the authorities. We use alternative methods in more than a third of our tests. Currently, 33 alternative methods are being used in our labs and another 19 are in the development stage. BASF spent  $\in$ 3.5 million toward this purpose in 2018. The development of alternative methods for testing the potential of substances to induce developmental toxicity has been a focus area of our research since 2017.

Since 2016, our Experimental Toxicology and Ecotoxicology department has been working together with a total of 39 partners on one of the largest European collaborative projects for alternative methods. The project, planned to run for six years, aims to develop alternative methods to the point that chemical risk assessments can be efficiently conducted largely without animal testing.

Given the set of the s

# Management of new technologies

## Continual safety research on nano- and biotechnology

Nanotechnology and biotechnology offer solutions for key societal challenges – for example, in the areas of climate protection or health and nutrition.

Safe handling of nanomaterials is stipulated in our Nanotechnology Code of Conduct. In recent years, we have conducted over 250 scientific studies and participated in over 40 different projects related to the safety of nanomaterials. The results were published in more than 100 scientific articles. In 2018, we concluded our five-year Nano-In-Vivo research project in cooperation with German governmental bodies. The project delivered important insights into the toxicological effects of long-term exposure to nanoparticles and complements our previous findings that toxicity is determined not by the size of the particles but by the intrinsic properties of the substance.

We contribute our expertise in various working groups of the European Chemicals Agency (ECHA) and the OECD's Business and Industry Advisory Group (BIAC), which develop testing and implementation guidelines. Together with partners from academia and government authorities, in 2018 we started work on E.U.funded projects to validate alternative testing methods for evaluating and grouping nanomaterials with a view to regulatory acceptance. In 2018, we were recognized by the European Chemical Industry Council (CEFIC) for our transparency in addressing questions about the safety of nanomaterials. BASF makes successful use of biotechnology. We produce a range of established products with the help of biotechnological methods. This provides us with extensive experience in the safe use of biotechnological methods in research and development as well as in production. When employing biotechnology, we adhere to all standards and legal regulations. We are also guided by the code of conduct set out by EuropaBio, the European biotechnology association.

For more information on nanotechnology and the Nanotechnology Code of Conduct, see basf.com/nanotechnology 2 Management's Report Transportation and storage

ort 3 Corporate Governance

# Transportation and storage

SUPPLIERS - BASE - CUSTOMERS

Our regulations and measures for transportation and warehouse safety cover the delivery of raw materials, the storage and distribution of chemical products among BASF sites and customers, and the transportation of waste from our sites to the disposal facilities.

# Strategy

# Risk minimization along the entire transportation chain

We want our products to be safely loaded, transported, handled and stored. This is why we depend on reliable logistics partners, global standards and an effective organization. Our goal is to minimize risks along the entire transportation chain – from loading and transportation to unloading. Some of our guidelines for the transportation of dangerous goods go above and beyond national and international dangerous goods requirements. We have defined global guidelines and requirements for the storage of our products and regularly monitor compliance with these.

# Accident prevention and emergency response

Risk assessments for transportation and storage

We regularly assess the safety and environmental risks of transporting and storing raw materials and sales products with high hazard potential using our global guideline. This is based on the guidelines of the European Chemical Industry Council (CEFIC). We also have binding global standards for load safety.

We stipulate worldwide requirements for our logistics service providers and assess them in terms of safety and quality. Our experts use our own evaluation and monitoring tools as well as internationally approved schemes.

# **Transportation incidents**

We are systematically implementing our measures to improve transportation safety. We report in particular on goods spillages that could lead to significant environmental impacts such as dangerous goods leaks of BASF products in excess of 200 kilograms on public transportation routes, provided BASF arranged the transport.

We recorded three incidents in 2018 with spillage of more than 200 kilograms of dangerous goods (2017: 3). None of these transportation incidents had a significant impact on the environment (2017: 0).

# Raw materials supply challenges due to low Rhine River

The low water levels on the Rhine River in 2018 impacted logistics at the Verbund site in Ludwigshafen, Germany. Under normal conditions, around 40% of incoming volumes are transported to the site by ship. This makes the Rhine the most important transportation route for incoming raw materials. As far as possible, we replaced transportation by ship with alternatives such as rail and truck while the Rhine was low. We are working on an overarching concept to make the site more resilient to long periods of low water and are investigating various measures, including selectively expanding on-site tank capacities or switching to ships better suited to low water levels. We intend to implement the first measures in 2019.

# Activities in external networks

We are actively involved in external networks, which quickly provide information and assistance in emergencies. These include the International Chemical Environmental (ICE) initiative and the German Transport Accident Information and Emergency Response System (TUIS), in which BASF plays a coordinating role. In 2018, we provided assistance to other companies in 145 cases worldwide (2017: 178). We apply the experience we have gathered to set up similar systems in other countries: For example, we intensified our activities in India in 2018.

For more information, see basf.com/distribution\_safety and basf.com/emergency\_response

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Energy and climate protection

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# Energy and climate protection

SUPPLIERS BASE 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
- New climate protection goal: CO<sub>2</sub>-neutral growth until 2030

Climate protection is very important to us. As a leading chemical company, we want to achieve CO<sub>2</sub>-neutral<sup>1</sup> production growth from 2019 to 2030. We have articulated this commitment in our new climate protection goal, which will apply from 2019. In order to reach this target, we aim to maintain total greenhouse gas emissions from our production sites and our energy purchases at the 2018 level. Sharp increases due to the startup of large-scale plants will be progressively offset. We will compensate for additional emissions with optimization measures at existing plants and a focus on purchasing low carbon energy. When deciding on investments and acquisitions, we systematically consider the effects on greenhouse gas emissions.

Most of BASF's greenhouse gas emissions are attributable to the consumption of energy. At sites that produce their own energy, we primarily rely on highly efficient combined heat and power plants with gas and steam turbines, and on the use of heat released by production processes. Furthermore, we are committed to energy management that helps us analyze and further improve the energy efficiency of our plants on an ongoing basis. We continuously analyze potential risks to our business operations arising in connection with the topics of energy and climate protection and derive appropriate measures.

We offer our customers solutions that help prevent greenhouse gas emissions and improve energy and resource efficiency. Around half<sup>2</sup> of our total annual research and development spending goes toward developing these products and optimizing our processes.

Our climate protection activities are based on a comprehensive analysis of our emissions. We report on greenhouse gas emissions in accordance with the Greenhouse Gas Protocol 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. BASF achieved a top score of "A" in CDP's rating for 2018, again 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.

Climate protection is a shared global task. We advocate climate protection by supporting initiatives to this end. In 2018, BASF actively contributed to recommendations on energy, climate and resource efficiency for state and government leaders in a working group of companies from G20 countries – the Business 20 (B20). As a member of the Alliance of CEO Climate Leaders, BASF explicitly encourages companies to step up their commitment to meeting the



# Carbon management

Since 2018, we have bundled global activities to reach our new climate goal and a long-term research and development program under the banner of carbon management. The program targets new technologies to significantly reduce greenhouse gas emissions from production at our Verbund site in Ludwigshafen, Germany. The focus here is on production processes for basic chemicals, which account for the highest share of emissions. These technologies can be transferred to other sites. Developing the technologies is time-intensive and involves uncertainties. We expect these new processes to make a significant contribution to reducing CO<sub>2</sub> from 2030. As well as technical progress, this will require an adequate supply of renewable energy at competitive prices and a supportive regulatory framework.

🖵 For more information, see basf.com/carbon-management

targets of the Paris climate accord. In November 2018, BASF also co-signed an open letter published by the Alliance calling for a pledge to increase efforts to reduce emissions, improved analysis and reporting of climate-related financial risks as well as a global carbon pricing mechanism. BASF also supports the recommendations of the Task Force on Climate-related Financial Disclosures

<sup>1</sup> BASF operations excluding the discontinued oil and gas business. The goal includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO<sub>2</sub> equivalents.

<sup>2</sup> Costs not relevant to the calculation of this share include research expenses in early innovation stages of the phase-gate process, patent costs and expenses for supporting services.

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Energy and climate protection

# (TCFD). In 2018, we started comparing our annual reporting with the TCFD's recommendations and identifying potential action areas.

For more information on climate protection, see basf.com/climate protection

## Reduction of greenhouse gas emissions per metric ton of sales product in BASF operations excluding the discontinued oil and gas business



# Global goals and measures

We aim to reduce our greenhouse gas emissions per metric ton of sales product by 40% by 2020, compared with baseline 2002 (BASF operations excluding the discontinued oil and gas business). In absolute terms, our emissions declined slightly in 2018 compared with the previous year. We reduced greenhouse gas emissions per metric ton of sales product by 34.2% compared with baseline 2002 (2017: reduction of 35.5%). Since 1990, we have been able to lower our overall greenhouse gas emissions from BASF operations (excluding the oil and gas business) by 49.2% and even reduce specific emissions by 74.2%.

We will pursue a new goal from 2019 onward: CO<sub>2</sub>-neutral growth until 2030. We will maintain greenhouse gas emissions per metric ton of sales product as an additional reporting indicator.

By 2020, we want to have introduced certified energy management systems (DIN EN ISO 50001) at all relevant production sites.<sup>1</sup> Taken together, this represents 90% of BASF's primary energy demand.

# BASF Group's greenhouse gas emissions according to the Greenhouse Gas Protocol<sup>1</sup>

Million metric tons of CO <sub>2</sub> equivalents			
BASF operations including the discontinued oil and gas business <sup>2</sup>	2002	2017	2018
Scope 1 <sup>3</sup>			
CO <sub>2</sub> (carbon dioxide) <sup>4</sup>	14.634	16.813	16.956
N₂O (nitrous oxide)	6.407	0.747	0.740
CH <sub>4</sub> (methane)	0.244	0.048	0.064
HFC (hydrofluorocarbons)	0.061	0.081	0.091
Scope 2 <sup>5</sup>			
$CO_2^4$	5.243	3.796	3.361
Total	26.589	21.485	21.212
Sale of energy to third parties (Scope 1) <sup>6</sup>			
CO <sub>2</sub> <sup>4</sup>	0.347	1.086	0.567
- Total	26.936	22.571	21.779

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 The assets and businesses acquired from Bayer are not yet included in the reported greenhouse gas emissions of the BASF Group for 2018.

3 Emissions of N<sub>2</sub>O, CH<sub>4</sub> and HFC have been translated into CO<sub>2</sub> 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 (2017 and 2018 emissions). HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components.

4 In 2018, we changed how emissions are allocated for two BASF Group companies with interdependent operations, with part of the Scope 2 emissions included within Scope 1. Total emissions (excluding sales of energy to third parties) remain unchanged. Since double counting of emissions is avoided (see footnote 6), direct emissions from sale of energy to third parties are reduced accordingly.

5 Location-based approach. Under the market-based approach, Scope 2 emissions were 3,657 million metric tons of CO2 in 2018.

6 Includes sale to BASF Group companies; as a result, emissions reported under Scope 2 can be reported twice in some cases

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. From 2019 onward, we will maintain this goal as a reporting indicator to track our progress in introducing energy management systems.

# 2020 target

Reduction of greenhouse gas emissions per metric ton of sales product Baseline 2002 (BASF operations excluding the oil and gas business)

(BASF operations including the oil and gas business)

2020 target



ment systems at all relevant sites

Coverage of our primary energy demand through

certified energy manage-

1 The selection of relevant sites is determined by the amount of primary energy used and local energy prices; figures relate to BASF operations including the discontinued oil and gas business

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Energy and climate protection

The introduction and implementation of the energy management systems is steered by a global working group. All energy efficiency measures are recorded and analyzed in a global database and made available to BASF sites as best practices. Currently, more than 150 measures are being pursued to reduce energy consumption and increase competitive ability. Further sites across all regions were certified in accordance with ISO 50001 in 2018. These include the Verbund site in Geismar, Louisiana, as well as another 19 sites in Brazil, India, Malaysia, Thailand, France and the Netherlands, among other countries. At the moment, 64 sites are certified worldwide, representing 73.0% of our primary energy demand.

Certified energy management systems (ISO 50001) 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 combined heat and power plants enable us to fulfill more than 70% of the electricity demand of the BASF Group. Compared with separate methods of generating steam and electricity, we saved 13.1 million MWh of fossil fuels and prevented 2.6 million metric tons of carbon emissions in 2018. The Verbund



Energy supply of the BASF Group 2018

1 Conversion factor: 0.75 MWh per metric ton of steam

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 18.5 million MWh in 2018, which translates to 3.7 million metric tons less  $CO_2$  released into 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 6.3 million metric tons of carbon emissions in 2018.

Energy saved in 2018 by the Verbund and combined heat and power generation

# 31.6 million MWh

We were able to further optimize the resource and energy consumption of our production in numerous projects around the world in 2018. For example, a new boiler was installed at the McIntosh site in Alabama to generate steam from production residues that were previously disposed of externally, saving primary energy. Process improvements at many additional sites have also led to savings in steam, electricity and fuel.

We also rely on locally available sources to supply our sites with energy. We are continuously exploring the use of renewable energies. The focus here is on the purchase of electricity. It only makes economic sense to replace highly efficient internal electricity and steam generation using natural gas once renewable energies offer the necessary supply security and are available at competitive prices. 2 Management's Report 3 Corporate Governance

#### Energy and climate protection

### Key indicators for energy and climate protection in BASF operations excluding the discontinued oil and gas business

	Baseline 2002 <sup>1</sup>	2017	2018
Greenhouse gas emissions <sup>2</sup> (million metric tons of CO <sub>2</sub> equivalents)	24.713	20.716	20.378
Specific greenhouse gas emissions (metric tons of CO <sub>2</sub> equivalents per ton of sales product)	0.897	0.579	0.590
Primary energy demand <sup>3</sup> (million MWh)	55.759	57.268	57.364
Energy efficiency (kilograms of sales product per MWh)	494	625	602

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

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

# Our research also contributes to increasing the efficiency of technologies for the use of renewable energy sources.

## Carbon footprint and climate protection products

- Reporting on greenhouse gas emissions along the entire value chain
- Customers' use of climate protection products sold in 2018 avoids 640 million metric tons of CO<sub>2</sub> equivalents

BASF has published a comprehensive corporate carbon footprint since 2008. This reports on all greenhouse gas 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 142,000 metric tons in 2018.



Million metric tons of CO<sub>2</sub> equivalents 22 BASF 16 Disposal Production (including genera-Incineration with energy tion of steam and electricity) recovery, landfilling (C 12) 52 Suppliers 4 Transport 42 Customers 4 Other Purchased products. Transport of products. Emissions from (C 3b, 3c, 5, services and capital employees' commuting and the use of end 8, 13, 15) goods (C 1, 2, 3a) business travel (C 4, 6, 7, 9) products (C 11)

4 BASF operations including the discontinued oil and gas business; according to Greenhouse Gas Protocol, Scope 1, 2 and 3; categories within Scope 3 are shown in parentheses

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 as compared with reference products. Two examples are Luprosil® and Lupro-Grain®, propionic acid-based preservatives that enable feed grains to be stored for up to 12 months after harvesting without being dried. An Eco-Efficiency Analysis shows that in addition to ecological and economic advantages, these can reduce greenhouse gas emissions by an average of 85% per metric ton of feed.

An analysis of 22 climate protection product groups revealed that customers' use of products sold in 2018 helps to avoid 640 million metric tons of CO<sub>2</sub> 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, 5% of the emissions avoided were attributable to BASF in 2018. The calculation of avoided greenhouse gas emissions took into account the chemical industry standards of the International Council of Chemical Associations (ICCA) and the World Business Council for Sustainable Development (WBCSD).

□ For more information on our emissions reporting, see basf.com/corporate\_carbon\_footprint □ For more information on the sustainability analysis of our product portfolio, see pages 37 to 38

# Prevention of greenhouse gas emissions through the use of BASF products

Million metric tons of CO <sub>2</sub> equivaler Emissions along the entire value	nts ue chain	
Without the use of BASF's climate protection products	1,000	
With the use of BASF's		Emissions avoided
climate protection products	300	640 million metric tons

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Air and soil

Air and soil

BASE

CUSTOMERS We want to further reduce emissions to air from our produc-

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tion, prevent waste and protect the soil. We have set ourselves standards for doing so in global directives. If no recovery options are available for waste, we dispose of it in a proper and environmentally responsible manner.

# Strategy

- Regular monitoring of emissions to air
- Professional disposal of hazardous waste

Regular monitoring of our emissions to air is a part of 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 or reduce waste. We regularly carry out audits to inspect external waste disposal companies to ensure that waste is properly disposed of. In this way, we also contribute to preventive soil protection and keep today's waste from becoming tomorrow's contamination.

If soil and groundwater contamination occurs at active or former BASF sites, proper remediation measures are reviewed based on prevailing legal and current technical standards, and undertaken as necessary.

# Emissions to air

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## Emissions at prior-year level

Absolute emissions of air pollutants from our chemical plants amounted to 25,787 metric tons in 2018. Emissions of ozone-depleting substances as defined by the Montreal Protocol totaled 19 metric tons in 2018 (2017: 23 metric tons). Emissions of heavy metals in 2018 amounted to 2 metric tons (2017: 2 metric tons1).

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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 the oil and gas business	2018	2017
CO (carbon monoxide)	3,627	3,644
NO <sub>x</sub> (total nitrogen oxides)	10,712	11,205
NMVOC (nonmethane volatile organic compounds)		4,727
SO <sub>x</sub> (total sulfur oxides)		1,753
Dust <sup>1</sup>	2,344	2,354
$NH_3$ (ammonia) and other inorganic substances	2,257	2,170
Total	25,787	25,853

# Management of waste and contaminated sites

- Total waste volume slightly higher
- Systematic management of contaminated sites

We aim to avoid waste as far as possible. If waste is unavoidable, we review the options for recycling or energy recovery to close materials cycles, using BASF's existing Verbund structures for efficient waste management. Total waste volume amounted to 2.31 million metric tons in 2018 (+9.0%).

## Waste generation in the BASF Group

Million metric tons		-
	2018	2017
Total waste generation <sup>1</sup>	2.31	2.12
of which from oil and gas exploration	0.12	0.10
Waste recovered	0.89	0.79
Recycled	0.36	0.27
Thermally recovered	0.53	0.52
Waste disposed of		1.34
In underground landfills	0.20	0.17
In surface landfills	0.46	0.39
Through incineration	0.76	0.77
Classification of waste for disposal <sup>2</sup>		
Nonhazardous waste	0.44	0.47
Hazardous waste	0.98	0.87
Transported hazardous waste	0.29	0.23

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.

We set out global standards for managing contaminated sites. A worldwide network of experts ensures their proper implementation. 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.

Relevant sites are documented in a contaminated site database. Ongoing remediation work around the world continued on schedule and planning was concluded on future remediation projects.

🛱 For more information on provisions for environmental protection, see the Notes to the Consolidated Financial Statements on pages 220 and 245

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# Water

## BASF – CUSTOMERS

Water is of fundamental importance in chemical production. It is used as a coolant, solvent and cleaning agent, as well as to make our products. We are committed to its responsible use along the entire value chain and especially in our production sites' water catchment areas. We have set ourselves a global goal for sustainable water management.

# Strategy

- Sustainable water management
- Updated water goal from 2019 onward

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. Under our previous definition, these were 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.

From 2019 onward, we will use an expanded definition of water stress areas: Regions in which more than 40% of available water is used by industry, household and agriculture in accordance with the new Global Reporting Initiative (GRI) standard. We will also report on the water consumption of the BASF Group and water consumption in water stress areas from 2019 onward.

In order to ensure transparency in our reporting on water, we once again took part in CDP reporting in 2018. BASF achieved a rating of



We offer our customers solutions that help purify water and use it more efficiently while minimizing pollution.

igsquare For more information on the CDP water survey, see basf.com/en/cdp

# Global goal and measures

Our previous goal was to introduce sustainable water management at all sites in water stress areas and at our Verbund sites by 2025, covering 93% of BASF's total water abstraction. We achieved 50.0% of this goal in 2018 (2017: 45.2%). In 2018, BASF introduced sustainable water management at five sites.

In 2018, 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.

We pursue our goal by applying the European Water Stewardship standard, which rests on four principles: sustainable water abstrac-

# Water stress areas around the world

3 Corporate Governance



tion, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes.

Water

We will pursue an updated goal from 2019 onward. By 2030, we want to introduce sustainable water management at all sites in water stress areas and at our Verbund sites according to our expanded definition. This almost doubles the number of sites.

# Water use

# Using water responsibly

Our water usage totaled 1,745 million cubic meters in 2018. This demand was covered for the most part by surface water, such as rivers and lakes. At some sites, we use alternative sources such as treated municipal wastewater, brackish water or seawater.

We predominantly use water for cooling purposes (87%), after which we recirculate it back to our supply sources. We reduce our water use by recirculating as much water as possible. To do this, we use recooling plants that allow water to be reused several times.

The supply, treatment, transportation and recooling of water is associated with a considerable energy demand. 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**

# Slight decrease in emissions to water

A total of 1,614 million cubic meters of water were discharged from BASF production sites in 2018, including 188 million cubic meters of treated wastewater from production. Emissions of nitrogen to water amounted to 3,100 metric tons (2017: 2,800 metric tons). Around





The difference between the volume of water drawn and the volume discharged is primarily attributable to evaporation losses during closed-circuit cooling.
Total from production processes, graywater, rinsing and cleaning in production

12,400 metric tons of organic substances were emitted in wastewater (2017: 13,200 metric tons<sup>1</sup>). Our wastewater contained 23 metric tons of heavy metals (2017: 25 metric tons). Phosphorus emissions amounted to 220 metric tons (2017: 420 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<sup>®</sup> initiative. The wastewater protection plans involve evaluating wastewater in terms of risk and drawing up suitable monitoring approaches. We use audits to check that these measures are being implemented and complied with.

☐ For more information, see basf.com/water

2 Management's Report

Employees

# **Employees**



Our employees make a significant contribution to BASF's long-term success. We want to attract and retain talented people for our company and support them in their development. To do so, we cultivate a working environment that inspires and connects people. It is founded on inclusive leadership based on mutual trust, respect and dedication to top performance.

# 122,404

employees around the world

# Employee engagement and leadership impact

on center stage

# Strategy

# We are committed to valuing and treating people with respect, and fostering an inspiring working environment

Our employees are key to the successful implementation of BASF's strategy. They contribute to changing the world we live in for the better with innovative and sustainable solutions. We remain convinced of the value of excellent employees, leaders and working conditions, and strive to give our employees the tools and skills necessary to be able to offer our customers products and services with an even greater level of differentiation and customization in the future. As part of the updated corporate strategy, we will sharpen our focus on employee engagement and impactful leadership. In

everything we do, we are committed to complying with internationally recognized labor and social standards. We want our working conditions to be a motor for innovation, and one way of achieving this is through inclusion of diversity. We want our employees to thrive and best contribute their individual talents – also considering the increasingly rapidly changing environment, especially as a result of demographic change and the digitalization of work. Lifelong learning and individual employee development lay the foundation for this. Compensation and benefits as well as offerings to balance personal and professional life complete our attractive total offer package. We track our employer rankings so that we can continue to attract talented people to the company in the future. Our employees play an important role here as ambassadors for BASF.]

# Number of employees

At the end of 2018, BASF had 122,404 employees (2017: 115,490); of these, 3,174 were apprentices<sup>1</sup> (2017: 3,103). 3,226 employees were on temporary contracts (of which 40.9% were women). The higher headcount was primarily due to the businesses acquired from Bayer. In addition, 2,017 employees from the disposal group for the oil and gas business were included in the number of employees as of December 31, 2018.

# BASF Group employees by region

3 Corporate Governance



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

Employee engagement

# Next employee survey to be conducted in 2019

BASF can rely on the engagement of its employees. Employee engagement is shown by, for example, a passion for the job, a dedication to top performance and a commitment to BASF. Previous global employee surveys have shown that employee engagement is already high, and we aim to keep it this way and increase it even further where possible. As part of our updated corporate strategy, we have therefore set ourselves the following goal for the coming years from 2019 onward: More than 80% of our employees feel that at BASF, they can thrive and perform at their best. Our employee engagement level will be regularly calculated as an index score based on set questions in employee surveys. We identify improvement areas based on survey results to further strengthen the engagement of our employees.

Global employee surveys and pulse checks are and will remain an established feedback tool in the BASF Group, and are used to actively involve employees in shaping their working environment. The results are communicated to employees, the Board of Executive Directors and the Supervisory Board. We have performed regular global employee surveys since 2008. As part of the updated corporate strategy, we conducted a global "pulse check" in 2018. We surveyed around 24,000 randomly chosen employees worldwide on topics such as customer focus, innovation, digitalization, sustainability and safety awareness. The results of this survey were taken into account in the strategy development process. We will conduct the next employee survey in 2019 based on an updated concept.

# What we expect from our leaders

## Leaders as role models

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Employees

Our leaders and their teams should make a sustainable contribution to BASF's success and to safeguarding its future. This is why we want to strengthen leadership impact. We understand impactful leadership as leaders that serve as role models by developing and implementing business strategies in line with our corporate values. They should also have a positive impact on shaping day-to-day business, mobilizing employees and fostering their development. These expectations are part of the standard global nomination criteria for leadership candidates. Our leadership culture is founded on a global Competency Model, which sets out specific behavioral standards, as well as our global Code of Conduct. We offer our leaders learning and development opportunities for each phase of their career, as well as various formats that enable them to share knowledge and learn from one another. Global, regional and local offerings are optimally coordinated.

4 Consolidated Financial Statements

Regular feedback plays an important role in the development of leaders. In 2018, we tested new digital tools for providing direct, timely feedback in a number of business and functional units. This complements BASF's long-established Global Leadership Feedback tool, where leaders receive feedback from their employees, managers, colleagues and customers on different aspects of their leadership conduct, and derive conclusions and activities from this in a follow-up process. In the coming years, we will introduce additional feedback tools. The use of these tools is binding in order to further enhance our strong feedback culture and promote personal development among our leaders on a regular basis.



Leaders and digital transformation

Leaders play a special role in driving forward digitalization. We offer training and other resources to prepare them and help them inspire their teams about the digital transformation. One example is the BASF Leadership Camp held in the fall of 2018, where leaders from all of the regions came together to discuss topics such as the role of leaders and the challenges of the digital transformation facing them, as well as the possibilities of digital project management. Leaders were also given the opportunity to participate in a modular course with cross-company digitalization projects. The program was run under the auspices of the Digital Academy, a network of large companies and the Mannheim Business School, which aims to drive forward the digital transformation in Germany.

2 Management's Report Employees

# Inclusion of diversity

# Promoting diversity is part of our company culture

The strong global character of our markets translates into different customer requirements – and we want to reflect this diversity among our employees, too. For us, diversity means, among other things, having people from different backgrounds working at our company who can draw on their individual perspectives and skills to grow our business. This diversity is important to us because it enables our employees to better meet our customers' needs. By valuing and promoting employee diversity, we boost our teams' performance and power of innovation, and increase creativity, motivation and each and every individual's identification with the company.

Promoting and valuing diversity across all hierarchical levels is an integral part of our strategy and is also embedded in our corporate values. BASF strives to foster a working environment based on mutual respect, trust and appreciation. This is enshrined in our global Competency Model, which provides a framework for our employees and leaders. The inclusion of diversity is anchored in this model as one of the behaviors expected of employees and leaders.

Our leaders play an important role in its implementation. We support them by integrating topics such as inclusive leadership into our leadership development courses. Special seminars and training events are held to sensitize leaders to issues such as unconscious bias. This enables them to remain as objective as possible when making personnel decisions, for example, to avoid unconscious biases in favor of or against candidates with certain characteristics or views.

Diversity also relates to the company's demographic profile, which varies widely by region within the BASF Group. Our aim is to create a suitable framework to help maintain the employability of our personnel at all stages of life and ensure the availability of qualified

employees over the long term. Mixed-age teams also benefit from the combination of different skills and perspectives, for example, by bringing together knowledge of digital technologies with many years of experience and process expertise. We have various measures in place to foster this transfer of knowledge and experience, and learning from each other. Given the special role that our leaders assume, the topic "leadership in times of demographic change" forms a part of many of our leadership programs.

# BASF Group employee age structure



We also promote diversity in leadership development. Our global approach is evidenced by the high percentage of non-German senior executives,<sup>1</sup> for example. This was 40.4% at the end of 2018 (2017: 38.9%). Our goal is to continue to maintain this figure at significantly above the 2003 baseline (30%).

Since 2015, BASF has set itself global quantitative goals for increasing the percentage of women in leadership positions. We aim to increase this ratio to 22–24% worldwide by 2021, so that the proportion of women in leadership positions reflects the share of female employees in the BASF Group when the target was set.

# 2021 target

Proportion of women in leadership positions with disciplinary responsibility

# 22-24%

Considering the low rate of turnover in the BASF Group's leadership team, this is an ambitious goal that we want to achieve through various measures. At BASF in North America, for example, diversity considerations such as gender or ethnic background are systematically considered when drawing up candidate lists and interview panels for all vacant positions. BASF has been a member of the *Chefsache* initiative since 2016, a network of leaders from industry, academia, the public sector and media. The initiative aims to initiate social change such as increasing the percentage of women in leadership positions in Germany. In the BASF Group, the global proportion of female leaders with disciplinary responsibility was 21.7%<sup>2</sup> at the end of 2018 (2017: 20.5%).

# Leaders and professionals in the BASF Group<sup>2</sup>

	December 31, 2018	Of which women (%)
Senior) executives <sup>1</sup>	9,648	21.7
Professionals <sup>2</sup>	39,756	30.2

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

### For more information, see basf.com/diversity

A For more information on diversity in the Board of Executive Directors and the Supervisory Board, see page 136 onward

For more information on health protection, see page 98

<sup>1</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.

<sup>2</sup> Excluding employees of the businesses acquired from Bayer

# Competition for talent

About This Report

- Positioning as an attractive employer
- Focus on social media and online marketing

1 To Our Shareholders

Attracting and retaining the best employees is crucial to our success. Having an attractive and compelling total offer package for employees is becoming increasingly important given the strong global competition for the best gualified employees and leaders. This is why we are constantly working on measures to increase B BASF's appeal in the global labor markets.

We are increasingly using digital platforms such as our country-specific career websites as well as global and regional social networks to reach potential candidates. This enables us to address specific target groups. One focus is on the recruitment of digital talents. In 2018, we launched a dedicated global career website for digital talents to strengthen our position among this group. In Germany, we also held our second BASF hackathon in 2018 with the motto "Coding Chemistry." Around 50 university students solved specific problems from our divisions within 24 hours and presented their solutions to a panel of BASF experts.

In North America, our #belongatBASF campaign informed social media users of the benefits of working at BASF in 2018. Employees also joined in and posted about their personal experiences and their working day at BASF. In addition, we offered a global livestream about working at BASF for the first time in 2018, in which our experts interacted directly with and answered questions from potential candidates.

We once again achieved high scores in a number of employer rankings in 2018. For example, in a study conducted by Universum, BASF was again selected by engineering and IT students as one of the 50 most attractive employers in the world. In North America, DiversityInc named BASF as one of the top 50 companies for diversity in recruiting for the sixth consecutive year. In Asia, Top Employer recognized BASF China as one of the best employers for the eighth time in succession.

BASF	Group	new	hires	in	2018 <sup>1</sup>	
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	December 31, 2018	Of which women (%)
Europe	5,182	28.9
North America	2,091	29.3
Asia Pacific	2,094	31.1
South America, Africa, Middle East	758	36.8
Total	10,125	30.0

The BASF Group hired 10,125 new employees in 2018. The percentage of employees who resigned during their first three years of employment - the early turnover rate - was 1.3% worldwide in 2018. This turnover rate was 0.6% in Europe, 2.3% in North America, 2.8% in Asia Pacific and 1.7% in South America, Africa, Middle East. Our early turnover rate is therefore at a desirable low level.1

As of December 31, 2018, the BASF Group was training 3,174 people in 15 countries and around 50 occupations. We spent a total of around €110 million<sup>1</sup> on vocational training in 2018.

For more information, see basf.com/apprenticeship

# Learning and development

- Life-long learning concept
- Focus on virtual learning and digitalization

Learning and development are essential success factors for a strong company culture. The skills and competencies of our employees are critical for profitable growth and lasting success. For this reason, we want to further modernize our learning culture and step up our efforts to promote lifelong, self-directed learning. Employee development at BASF is guided by the belief that talent is in everyone. This means that development opportunities and support are open to all employees. In our understanding, there is more to development than a promotion or a job change - it encompasses the development of personal experience and abilities.

In regular development meetings, which are held as part of our annual employee dialogs, employees outline prospects for their individual development together with their leaders and determine specific measures for further training and development, which focus on personal and professional competencies. Our learning activities follow the "70-20-10" philosophy: We apply the elements "learning from experience" (70%), "learning from others" (20%) and "learning through courses and media" (10%). Our learning and development offerings cover a range of learning goals: Starting a career, expanding knowledge, personal growth and leadership development. Virtual learning is playing an increasingly important role here.

We held our first ever global virtual "Go Digital!" week in 2018, for example. This gave employees around the world the chance to find out about different digitalization topics via online events. BASF employees and representatives from other companies provided insights into their digital projects.

Employees

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Employees

In addition, more and more academies in the divisions and functional units, which teach specific professional content, offer virtual training. We have offered "virtual presence" training since 2018, which gives all employees the opportunity to attend professional development courses via digital communication channels such as virtual meetings. In 2018, we introduced a global website with an accompanying learning app to enable employees around the world to find out about the digital workplace of the future and independently prepare for the digital transformation. Employees can use the app to learn about things like digital jargon and technologies, and acquaint themselves with new working and leadership models.

# Compensation and benefits

 Compensation based on employee's position and individual performance as well as company's success
ROCE determines variable compensation

We want to attract engaged and qualified employees, retain them and motivate them to achieve top performance with an attractive package including market-oriented compensation, individual development opportunities and a good working environment so that they contribute to the company's long-term success. Our employees' compensation is based on global compensation principles according to position, market and performance. As a rule, compensation comprises fixed and variable components as well as benefits that often exceed legal requirements. In many countries, these benefits include company pension benefits, supplementary health insurance and share programs. We regularly review our compensation systems at local and regional levels.

We want our employees to contribute to the company's long-term success. This is why the compensation granted to vast majority of our employees includes variable compensation components, with which they participate in the success of the BASF Group as a whole and are recognized for their individual performance. The same principles basically apply for all employees worldwide. The amount of the variable component is determined by economic success as well as the employee's individual performance. Since 2018, we have used the BASF Group's return on capital employed (ROCE) to measure economic success for the purposes of variable compensation. This links variable compensation to our ROCE target.<sup>1</sup> Individual performance is assessed as part of a globally consistent performance management process.

In numerous Group companies, our "plus" share program ensures employees' long-term participation in the company's success through incentive shares. In 2018, for example, 25,586 employees worldwide (2017: 23,700) participated in the "plus" share program. BASF offers senior executives the opportunity to participate in a share price-based compensation program, the long-term incentive (LTI) program. In 2018, 91% of the approximately 1,100 people eligible to participate in the LTI program worldwide did so, investing up to 30% of their variable compensation in BASF shares.

 $\,\,$   $\,$   $\,$  For more information, see the Notes to the Consolidated Financial Statements from page 263 onward

# **Personnel expenses**

3 Corporate Governance

The BASF Group spent €10,659 million on wages and salaries, social security contributions and expenses for pensions and assistance in 2018 (2017: €10,610 million). This also includes personnel expenses from the disposal group for the oil and gas business in the amount of €276 million (2017: €268 million). The rise in personnel expenses was primarily driven by the higher average headcount following the acquisition of significant businesses from Bayer, as well as higher wages and salaries. The main offsetting effects were the increase in provisions released for the long-term incentive program compared with the previous year and currency effects.

## **BASF Group personnel expenses**

Million €				
	2018	2017	+/-	
Nages and salaries	8,470	8,471	0%	
Social security contributions and assistance expenses	1,459	1,434	1.7%	
Pension expenses	730	705	3.5%	
Total personnel expenses	10,659	10,610	0.5%	

# Balancing personal and professional life

# Wide range of offerings for different phases of life

Our identity as an employer includes our belief in supporting our employees in balancing their personal and professional lives. We want to strengthen their identification with the company and our position in the global competition for gualified personnel. To achieve this, we have a wide range of offerings aimed at employees in different phases of life. These include flexible working hours, part-time employment and mobile working. Regional initiatives specifically address the needs of our employees at a local level. Our Work-Life Management employee center in Ludwigshafen (LuMit) offers a number of services under one roof: childcare, fitness and health, social counseling and coaching as well as other programs to help employees balance professional and personal life. We also provide social counseling and coaching at the Münster and Schwarzheide sites in Germany as well as in Asia, South Africa and North America to help employees overcome difficult life situations and maintain their employability.

<sup>1</sup> In calculating ROCE, adjustments are made for negative special items resulting from acquisitions and divestitures (e.g., integration costs in connection with acquisitions and gains or losses from the divestiture of businesses) when these exceed a corridor of plus or minus 1% of the average cost of capital basis. An adjustment of the ROCE (in the first 12 months after closing) therefore only occurs in cases of exceptionally high special items resulting from acquisitions and divestitures.

2 Management's Report Employees

# Dialog with employee representatives

Trust-based cooperation with employee representatives is an important component of our corporate culture. Our open and ongoing dialog lays the foundation for balancing the interests of the company and its employees, even in challenging situations. In the case of organizational changes or if restructuring leads to staff downsizing, for example, we involve employee representatives to develop socially responsible implementation measures at an early stage.

Our actions are aligned with the respective legal regulations and the agreements reached, as well as operational considerations. In 2018, this happened in preparations to transfer the paper and water chemicals business to a joint venture, for example. We also involved our employee representatives in full and at an early stage when we introduced a new global metric for variable compensation. This ensured wide employee acceptance and seamless implementation of the change. The early, detailed presentation and explanation of the updated corporate strategy in 2018 was also a reflection of our trust-based cooperation.

By focusing our discussions on the local and regional situations, we aim to find tailored solutions to the different challenges and legal considerations for each site. This is why the BASF Europa Betriebsrat (European Works Council) addresses cross-border matters in Europe. In South America, we foster dialog with the Diálogo Social.

# International labor and social standards

# Alignment with U.N. Guiding Principles on Business and Human Rights

We act responsibly toward our employees. Part of this is our voluntary commitment to respecting international labor and social standards, which we have embedded in our global Code of Conduct. This encompasses internationally recognized labor norms as stipulated in the United Nations' Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy of the International Labour Organization (ILO). BASF is committed to complying with these standards worldwide. We mainly approach our adherence to international labor and social standards using three elements: the Compliance Program (including external compliance hotlines), close dialog with our stakeholders (such as with employee representatives or international organizations) and the BASF guideline on compliance with international labor norms, which was established in 2015 and applies Group-wide.

This guideline concretizes what the human rights issues and international labor standards in our global Code of Conduct mean as these relate to our employees. It forms the basis for our global management process: We monitor and evaluate whether the national law of all the countries in which BASF operates complies with international labor and social standards. If the national law contains no or lower requirements, actions plans are drawn up to successively close these gaps in a reasonable time frame. If conflicts with national law or practices arise, we strive to act in accordance with our values and internationally recognized principles without violating the law of the country concerned. As part of the management process, we regularly follow up on and document the results of the comparison between national law and our guideline, as well as measures to implement the guideline. This is our central due diligence system. Based on our guideline, our management process has been able to improve maternity leave at BASF companies with no statutory requirements or lower requirements than in the BASF guideline, for example.

We already use internal control processes such as Responsible Care audits to review the degree of adherence with the individual elements of the guideline in BASF Group companies.<sup>1</sup> Beyond this, we started to integrate our voluntary commitment into the existing corporate audit process in 2018.

↓ For more information on labor and social standards, see basf.com/labor\_social\_standards
↔ For more information on global standards, see page 28

For more information on our sustainability-related risk management, see page 36 onward For more information on compliance, see page 140 onward

For more information, see basf.com/employeerepresentation

2 Management's Report Customer Orientation

# **Customer Orientation**

ſ	SUPPLIERS	- BASF	- CUSTOMERS

BASF supplies products and services to over 90,000 customers<sup>1</sup> from various sectors in almost every country in the world. Our customer portfolio ranges from major global customers and medium-sized businesses to end consumers.

# **Over 90,000**

customers from almost all sectors and countries in the world

# Innovative

in close partnership with our customers

# **Flexible**

thanks to in-depth expertise and wide range of resources

# Customer industry orientation

- Innovations and tailored solutions in close partnership with our customers
- Updated corporate strategy aligns BASF even closer with customers

Our broad portfolio - from basic chemicals to high value-added products and system solutions - means that we are active in many value chains and value creation networks. As a result, we work with a wide range of business models, which we flexibly adapt to the needs of individual industries. These range from cost leadership to

tailored, customer-specific solutions for downstream products. This industry orientation is primarily driven forward and enhanced by the divisions. Around half of our business units are oriented toward Our customers' satisfaction is the basis for long-term business specific industries.

3 Corporate Governance

Aligning our business with our customers' needs is our primary focus. Our ability to combine in-depth expertise with a wide range of resources to meet specific demands enables us to position BASF as a solution-oriented system provider.

Our updated corporate strategy puts an even greater focus on the customer. We aim to develop custom solutions that are both profitable and sustainable in close partnership with our customers, and optimize processes and applications. Our organization is being adapted accordingly so that we can work more effectively and efficiently and be even more customer-centric. We want to satisfy customer requests in a more focused and targeted way, and improve our reaction times. Our comprehensive understanding of value chains and value creation networks as well as our global setup and market knowledge remain key success factors.

We are also pursuing a series of measures that will, among other things, increase transparency for customers, enhance customer service and explore joint growth potential. To ensure even stronger customer communication and better understand our customers' needs, we regularly ask them for direct feedback on how we are doing. This gives us a timely insight into customer satisfaction and we can use the findings to continuously improve our performance.

For more information on the previous segments and their divisions in 2018 see pages 60, 67, 74 and 80 onward

## Quality management

success, which is why quality management is of vital significance for BASF. We strive to continually improve processes and products. This is also reflected in our Global Quality Policy. The majority of BASF's production sites and business units are certified according to ISO 9001.<sup>2</sup> In addition, we also meet industry and customerspecific quality requirements that go beyond the ISO standard.

# Customer awards

We again received awards from a number of satisfied customers in 2018. For example, in April 2018 we were named a 2017 General Motors (GM) Supplier of the Year for the thirteenth time since 2002. The award is presented to suppliers who distinguish themselves by meeting performance metrics for guality, execution, innovation and total enterprise cost.

In October 2018, BASF was recognized by technology company 3M for its contribution to improving 3M's competitiveness with the 2017 3M Supplier of the Year Award in the Technology & Innovation category.

BMW honored BASF in November 2018 with a BMW Supplier Innovation Award 2018 as the winner of the Sustainability category. BMW said that BASF achieved the best performance in CO<sub>2</sub> emissions in the report published by the non-governmental organization CDP. BASF's anchoring of the fight against climate change within the company was cited as another reason for the decision. In addition, BASF develops solutions that help its customers reduce CO<sub>2</sub> emissions.

C For more information on BASF's updated corporate strategy and our stronger customer focus, see page 25 onward

For more information on the BASF Group's new organizational structure as of January 1, 2019. ade 19

<sup>1</sup> The method used to calculate customers in the previous year has been adjusted to the "sold-to" parties of our consolidated companies. The updated figure for 2017 is over 80,000 customers.

<sup>2</sup> ISO 9001 is a standard published by the International Organization for Standardization (ISO) and sets out the requirements for a quality management system