We want to contribute to a world that offers a viable future with enhanced quality of life for everyone. That is why sustainability is firmly anchored in our corporate purpose, our strategy, our targets and our operating business (see page 42). It is at the core of what we do, a driver for growth and an element of our risk management. We pursue a holistic approach that covers the entire value chain – from our suppliers and our own activities to our customers.

We contribute to a sustainable development and to the United Nations’ Sustainable Development Goals (SDGs) in many different ways (see page 32). For instance, our innovations, products and technologies help to better use natural resources, produce enough food, enable climate-smart mobility, reduce emissions, or increase the capabilities of renewable energy. Alongside these positive contributions, our business activities also have negative impacts. For example, we create CO\textsubscript{2} emissions and procure raw materials, the sourcing of which by our suppliers involves a potential risk of human rights violations. This is why we are constantly working to broaden our positive impact on key sustainability topics (see page 42) along our value chains and reduce the negative impact.

Strategy

- **Comprehensive management and monitoring systems to uphold our responsibility to the environment and society**

We are committed to doing business in a responsible, safe, efficient and respectful way. Our actions are guided by our corporate values and our global Code of Conduct. We comply with and in some cases exceed the applicable laws and regulations with voluntary commitments. We stipulate binding rules for our employees with standards that apply throughout the Group. In doing so, we consider, respect and promote internationally recognized principles such as the 10 principles of the U.N. Global Compact, the Universal Declaration of Human Rights, or the Core Labor Standards of the International Labor Organization (ILO).

We want to ensure that we act in line with the applicable laws and uphold our responsibility to the environment and society with our comprehensive management and monitoring systems. Our global Responsible Care Management System covers environmental protection, health and safety (see page 121). We meet our responsibilities with respect to international labor and social standards chiefly through three elements: the Compliance Program (including internal and external compliance hotlines), close dialog with our stakeholders (such as with employee representatives or international organizations) and the guideline on compliance with international labor norms, which applies Group-wide. This guideline specifies what the issues in our global Code of Conduct mean for our employees.

Our business partners are also expected to comply with prevailing laws and regulations and to align their actions with internationally recognized principles. We have established appropriate management and control systems, for example, for working with our suppliers (see page 113).

We are involved in numerous initiatives to drive forward sustainability in general and, specifically, as this relates to our value chains. These include the World Business Council for Sustainable Development (WBCSD) and OECD’s Business for Inclusive Growth (B4IG) initiative, as well as networks with thematic focus like the Alliance to End Plastic Waste (AEPW), the Global Battery Alliance (GBA) or the
Human rights topics coordinated and steered by Corporate Compliance

Creation of an independent Human Rights Advisory Council for trust-based dialog and consultation

BASF acknowledges its responsibility to respect internationally recognized human rights. For many years now, we have engaged in constructive dialog on human rights with other companies, non-governmental organizations, international organizations and multi-stakeholder initiatives to better understand different perspectives and address conflicting goals. BASF is a founding member of the U.N. Global Compact and a member of the Global Business Initiative on Human Rights (GBI), a group of globally operating companies from various sectors. The initiative aims to ensure implementation of the U.N. Guiding Principles on Business and Human Rights. We are confronted by the fact that there are states that do not honor their obligation to protect human rights. People are particularly at risk in such countries and companies’ ability to act is often limited. Nevertheless, we are committed to our values – including and especially there – and contribute to the respect of human rights.

We have embedded this into our Code of Conduct and our human rights position (for more information, see page 177). All employees and members of management bodies are responsible for ensuring that we act in accordance with our Code of Conduct and our human rights position. We uphold our standards worldwide, including where they exceed local legal requirements. We avoid causing or contributing to adverse human rights impacts through our own operations.

Our Corporate Compliance unit is responsible for steering human rights topics and developing binding policies. A group of internal experts from various specialist units – environment, health and safety, sustainability, legal, procurement, human resources and supply chain – and the operating divisions works closely together to coordinate measures across units. This expert working group provides support and advice in challenging and critical situations, on the development of internal processes, and on the creation of information and training offerings, among other things. Together with our Human Rights Advisory Council, it ensures that we can meet our due diligence obligations.

We established the Human Rights Advisory Council to systematically integrate external expertise. Its members include independent international human rights experts. The trust-based dialog on human rights topics helps us to better understand critical perspectives and to deal more openly with dilemmas. At the same time, the renowned external experts show us where we have potential for improvement and help us to build on our strengths in how we handle human rights. The council is chaired by our Chief Compliance Officer. Meetings are also attended by employees from Corporate Sustainability and Corporate Compliance. Other representatives, for example, from the operating divisions or procurement, are invited depending on the focus topics. Its composition allows the Human Rights Advisory Council to provide an external perspective on our processes and contribute this in discussions with senior management. Similarly, the Stakeholder Advisory Council brings outside views to discussions with the Board of Executive Directors. We see assuming our human rights responsibilities as a continuous process. This is why we continuously review our policies and processes and update them if necessary.

In 2020, we conducted a comprehensive review of our human rights management system and the related processes. The review showed that we have achieved important milestones in the area of human rights and in terms of our due diligence processes. These include the introduction of explicit questions on due diligence aspects in the risk analyses conducted by business units, standard supplier assessments or evaluations of investment projects. The analysis, which was discussed with the Board of Executive Directors, did however also reveal potential for improvement that we have ambitions to pursue, such as awareness of human rights topics within our organization. Continued efforts are needed to help all employees better understand how these topics are relevant to our daily work. In addition, we want to expand our due diligence process to more effectively identify challenges at different stages of our value chain. A human rights risk assessment is to be more systematically incorporated into strategy development for our procurement units. We also want to further strengthen our grievance mechanisms and introduce a standardized global hotline and reporting system in 2021. In consultation with the Human Rights Advisory Council, Corporate Compliance is developing specific measures for improvement together with the expert group and the relevant units. Awareness-raising measures are currently being developed, including training concepts and content to make employees more conscious of human rights.

We want to ensure that our actions do not have a negative impact on human rights. We have long used monitoring and management systems to identify potential and actual negative impacts. Our measures and criteria for monitoring and observing human rights are integrated into supplier assessment processes and our global monitoring systems for environmental protection, safety and security, health protection and product stewardship. They are also integrated into the evaluation of investment, acquisition and divestiture.

Roundtable on Sustainable Palm Oil (RSPO), In addition, we realize a wide range of projects – often together with partners – for example, to improve sustainability in the supply chain, to promote a circular economy model or on the responsible use of crop protection products.

For more information on sustainability management, see page 42 onward
For more information on responsible procurement, see page 113 onward
For more information on environmental protection, health and safety, see page 121 onward
For more information on employees, see page 144 onward
For more information on social engagement, see page 47 onward
For more information on corporate governance and compliance, see page 167 onward

Responsibility for human rights
projects, assessments along the product life cycle, and systems to monitor labor and social standards. Aspects of human rights related to site security, such as the right to liberty and security of person, are a component of the global qualification requirements of our security personnel. Respect for human rights is a mandatory element of any contract with service providers of the BASF Group who are active in this area.

As an international company, we are a part of society in the countries in which we operate and have business relationships with different partners around the world. We have trustful working relationships with our partners (joint venture partners, contractors, suppliers, and customers), expect them to comply with internationally recognized human rights standards and to demand the same of their partners further along the value chain. For instance, we contractually agreed with our two joint venture partners in the Chinese region of Xinjiang that the basis for joint activities is the BASF Code of Conduct and the requirements embedded in it to respect human rights and relevant labor and social standards (such as the exclusion of forced labor and discrimination in hiring, promotion and dismissal practices).

We review this on a regular basis with audits. The most recent audits on compliance with labor and social standards at our joint ventures were performed in the first half of 2020, despite the challenges posed by the coronavirus pandemic. The audits were conducted with the support of a well-known external auditor. They reviewed the implementation of measures agreed in previous internal audits and again verified compliance with BASF’s requirements regarding international labor and social standards.

We support our partners in their efforts to meet their respective responsibilities. This is because we can only meet our goal of eradicating human rights abuses along our value chains if we work together. We have defined our expectations in a binding Supplier Code of Conduct.

Employees and third parties around the world can report potential violations of laws or company guidelines to our compliance hotlines. Since 2020, employees have also been able to contact specialists directly via a new internal online platform or the corresponding app. In 2020, 261 human rights-related complaints were received by phone as well as by post and e-mail. All complaints received were reviewed and forwarded to the relevant departments for in-depth investigation. If justified, appropriate measures were taken.

We report on our global targets, monitoring systems and measures to integrate human rights topics into our business activities in publications such as this report and online.
Supplier Management

BASF sources a wide range of raw materials, technical goods and services. Our suppliers are an important part of our value chain. Our objective is to secure competitive advantages for BASF through our professional procurement structures. At the same time, together with our suppliers, we want to improve sustainability in the supply chain and minimize risks.

Strategy

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.

Our sustainability-oriented supply chain management helps to manage risks. We have defined our standards and processes in global guidelines and are constantly refining and optimizing these. Our risk-based approach aims to identify and evaluate sustainability risks in our value chains as best possible to improve sustainability together with our suppliers. We regularly review and document progress based on the risk level. Employees with procurement responsibility receive ongoing training in sustainability-oriented supplier management and responsible procurement. In 2020, 462 BASF employees received such training.

Our expectations of our suppliers are laid down in the global Supplier Code of Conduct. This clarifies for our suppliers the standards to be met and supports them in carrying out our requirements. We count on reliable supply relationships and want to make our suppliers’ contribution to sustainable development visible to us.

We actively promote sustainability in the supply chain and have set ourselves ambitious targets for this: By 2025, we aim to have conducted sustainability evaluations for 90% of the BASF Group’s relevant spend and will develop action plans where improvement is necessary. In addition, we are working toward having 80% of suppliers improve their sustainability performance upon re-evaluation by 2025. In 2020, 80% of the relevant spend had been evaluated. Of the suppliers re-evaluated in 2020, 68% had improved. The global targets are embedded in the target agreements of persons responsible for procurement.

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

2025 target
Share of relevant spend covered by sustainability evaluations 90%

2025 target
Percentage of suppliers with improved sustainability performance upon re-evaluation 80%

Worldwide procurement

Our more than 70,000 Tier 1 suppliers play an important 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 raw materials, precursors, investment goods and consumables, perform a range of services and are innovation partners. Procurement management systems such as guidelines and targets are set centrally and are binding for all employees with procurement responsibility worldwide.

We acquired raw materials, goods and services for our own production worth approximately €31.5 billion in 2020. Of this, around 90% was procured locally. There were no substantial changes to our supplier structure.

What we expect from our suppliers

Together with our suppliers, we want to improve sustainability in the supply chain. Consequently, we expect our suppliers to comply with the applicable laws in full and to adhere to internationally recognized environmental, social and corporate governance standards. We also expect our suppliers to make an effort to implement these standards at their suppliers. In addition, we ask our suppliers to acknowledge, support and abide by our Supplier Code of Conduct – or to demonstrate and ensure their commitment to the principles specified in the Code of Conduct, for example in their own code of conduct. 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. Topics covered by the Code of Conduct include compliance with human rights, the exclusion of child and forced labor, safeguarding labor and social standards, and antidiscrimination and anticorruption policies in

1 BASF considers all direct suppliers of the BASF Group in the business year concerned as Tier 1 suppliers. These are suppliers that provide us with raw materials, investment goods, consumables and services. Suppliers can be natural persons, companies or legal persons under public law.

2 We understand relevant spend as procurement volumes with relevant suppliers. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices, our purchasers’ assessments or other sources.

3 “Local” means that a supplier is located in the same region (according to BASF’s definition) as the procuring company.
addition to protecting the environment. The Code of Conduct is available in the most relevant languages for our suppliers and is integrated into electronic ordering systems and purchasing conditions across the Group. In 2020, 4,918 new suppliers committed to our Code of Conduct.

BASF reserves the right to conduct audits or evaluations to ensure that suppliers comply with the applicable laws, rules and standards. In addition, BASF reserves the right to discontinue business relationships for non-adherence to international principles, failure to correct violations, or for displaying patterns of non-compliance with these standards. Potential violations of laws, rules or standards can be reported – including anonymously – to one of our more than 50 externally operated hotlines worldwide. Each case is documented and investigated, and appropriate measures are taken as necessary.

Selection and evaluation of our suppliers

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. As such, the selection, evaluation and auditing of suppliers is an important part of our sustainable supply chain management. Approaches and responsibilities are set out in a global guideline. Due to the size and scale of our supplier portfolio, our suppliers are evaluated based on risk, including materiality and country and industry-specific risks. We also use observations from our employees in procurement and information from internal and external databases, such as Together for Sustainability (TfS) assessments.

We have suppliers with a high potential sustainability risk evaluated by third parties, either through sustainability evaluations or on-site audits. The list of suppliers to be assessed is updated every year. Sustainability evaluations and on-site audits are mainly conducted according to the TfS framework. A total of 50 raw material supplier sites were audited on sustainability standards on our behalf in 2020. We received sustainability evaluations for 628 suppliers. We also take into account other certification systems and external audits, such as from the Roundtable on Sustainable Palm Oil, when evaluating our suppliers’ sustainability performance. Depending on business requirements, we additionally conduct our own Responsible Care audits at selected suppliers (see page 121).

Audit results

We carefully analyze the results of sustainability evaluations and on-site audits and document these in a central database. The supplier audits conducted over the past few years have identified some need for adjustment with respect to environmental, social and corporate governance standards, for example in waste management or deviations in occupational health and safety measures and standards under labor law. Follow-up audits in 2020 identified improvements, for example the correct storage of hazardous substances, proper disposal of waste, the implementation of occupational and process safety measures, the correct implementation of emergency plans, and compliance with labor law requirements. In 2020, none of our audits identified any instances of child labor or dangerous work and overtime performed by persons under 18.

In January 2020, a full mining-specific re-audit was performed at our platinum supplier Sibanye-Stillwater in Marikana, South Africa, in accordance with TfS standards to re-evaluate the situation following the previous audits in 2015 and 2017. This identified fundamentally solid management systems at Sibanye-Stillwater in line with good industry practice and international standards, especially in the area of health and safety. The audit also recognized the significant efforts by Sibanye-Stillwater since the acquisition of Lonmin in 2019 in the area of social engagement, as well as the establishment of an additional strike at a mine formerly operated by Lonmin Plc, 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. Ownership of the Marikana mine was transferred to Sibanye-Stillwater with its acquisition of Lonmin in 2019.
inclusive stakeholder engagement forum. These include maintaining the cooperation between Sibanye-Stillwater and the authorities to improve local living conditions. In addition, the audit team recommended that the implementation and management of the social engagement strategy continue to be systematically monitored.

Need for action was identified in areas such as health and safety and the environment, for example in storing corrosive substances, firefighting capabilities and compliance with soil and water emission limits. All of the deviations identified by the audit were included in an action plan. BASF and Sibanye-Stillwater discuss the progress made on its implementation four times a year. The improvements were documented by the end of 2020 as planned. Sibanye-Stillwater is a member and supporter of the International Platinum Group Metals Association (IPA) sustainability initiative that was co-founded by BASF. The initiative’s measures include conducting comprehensive sustainability audits in the South African platinum group metals sector and exchanging factors for success. BASF continued its regular dialog with local stakeholder groups in 2020.

We are also in regular contact with our supplier Nornickel on sustainability matters and other aspects relevant to our cooperation. These include current events and the findings from the mining-specific TfS audits conducted in 2017 at Nornickel’s sites in Polar and Kola (both in Russia) and in Harjavalta, Finland. The audits identified some need for adjustment in the areas of waste, wastewater, emissions and land rehabilitation to mitigate environmental and production risks. A number of points have since been implemented, while others are still outstanding and are included in site-specific action plans. In addition, Nornickel has committed to becoming certified according to the standards of the International Council on Mining and Metals (ICMM) and the Initiative for Responsible Mining Assurance (IRMA). This involves comprehensive audits, which are planned for 2021.

Supplier development

Using TfS evaluations, we pursue a risk-oriented approach with clearly defined, BASF-specific follow-up processes. If we identify deviations from our standards, we ask our suppliers to develop and implement corrective measures within a reasonable time frame. We support them in their efforts, for example by providing training on environmental, social and corporate governance topics. We trained employees from 43 Chinese suppliers in 2020 as part of a partnership with the East China University of Science and Technology in Shanghai, China.

As part of TfS, training was developed for suppliers that already have a sustainability rating but have potential for improvement in environmental, social and corporate governance. In 2020, more than 1,000 participants attended TfS training on this topic in China and Brazil. The TfS Supplier Academy is also developing training opportunities for our suppliers around the world. These will be implemented in 2021.

We review our suppliers’ progress according to a defined timeframe based on the sustainability risk identified, or after five years at the latest. In the case of ongoing, serious violations of the standards defined in our Supplier Code of Conduct or international principles, we reserve the right to impose commercial sanctions. These can go as far as termination of the business relationship. In 2020, this was decided in four cases.
In 2020, BASF purchased a total of around 30,000 different raw materials from more than 6,500 suppliers. Using resources as efficiently and responsibly as possible and the concept of a circular economy are firmly embedded in our strategy and our actions, supported by our Verbund structure and the use of renewable and recycled feedstocks. We expect our suppliers to source and produce raw materials responsibly. In the search for alternative raw materials, we employ solutions that also contribute to sustainability.

Strategy

Our strategy covers the entire value chain – from responsible procurement and using and recycling raw materials efficiently in our own processes to developing green products and technologies for our customers. We want to decouple growth from resource consumption with process and product innovations to drive forward the shift toward closed-loop value creation systems (see page 30). Alongside economic, environmental and social criteria, we also consider aspects such as product safety and supply security when selecting raw materials for our production processes.

Our expectations of our suppliers are laid down in the Supplier Code of Conduct (see page 113). We take a closer look at suppliers in critical supply chains, for example for mineral raw materials, renewable resources such as palm kernel oil, for a number of pigments or highly toxic substances. Upstream stages of the value chain are assessed for serious sustainability risks and, if necessary, suitable remedial measures are identified. In addition, we develop and test approaches to make raw materials supply more sustainable in joint initiatives with suppliers and other partners. Examples include our cooperative ventures to recycle battery materials (see page 119) or our joint activities on certified sustainable supply chains for renewable raw materials such as palm and castor oil.

The mass balance approach

Many BASF value chains start in syngas plants or steam crackers, where fossil resources, mostly natural gas and naphtha, are converted into hydrogen and carbon monoxide or important basic chemicals such as ethylene and propylene. These are used to create thousands of products in the BASF Verbund. Alongside fossil resources, bio-based and recycled raw materials such as biogas, bio-naphtha or pyrolysis oil can be used as feedstocks. It is not possible to physically or chemically match the feedstock to the output as our plants simultaneously process fossil, bio-based and recycled raw materials. The share of bio-based or recycled raw materials can be allocated to certain products using the mass balance approach, which is audited by a third party, and certification (such as the REDcert2 standard for the chemical industry). It is similar in principle to green power, which has been established for many years: Energy from renewable sources is fed into the grid and then charged to individual customers. Mass balance products are identical in quality to conventional products but make a substantial sustainability contribution to the use of bio-based or recycled raw materials. This method has already been applied to over 200 BASF products (2019: around 80 products), for example, for engineering plastics, superabsorbents, dispersions and intermediates. We share our expertise in various stakeholder platforms to harmonize and standardize different allocation methods and certification systems for mass balance products. For instance, BASF contributed to position paper on the mass balance approach published by the industry association PlasticsEurope in 2020.

For more information, see basf.com/massbalance
BASF’s Verbund concept is key to making the use of raw materials in our own processes as efficient as possible: Intelligently linking and steering our plants and processes creates efficient value chains. By-products from one facility are used as feedstocks elsewhere. This saves raw materials and energy (see page 130). At the same time, the Verbund offers many opportunities to use renewable and recycled raw materials. We want to better leverage this potential going forward (see page 30). For example, we are driving forward chemical recycling of mixed plastic waste and used tires in our ChemCycling™ project (see page 118).

Resource efficiency and stewardship are also becoming increasingly important topics for our customers. That is why we are constantly working to reduce the resources consumed in the production of our products, for example through more efficient processes or the use of renewable and recycled raw materials. This enables us to offer our customers solutions that make a greater contribution to sustainability, like a smaller carbon footprint. Our products also improve our customers’ resource efficiency and sustainability in many areas. For example, metal pretreatment using our innovative Oxsilan® thin-film technology requires significantly less material than conventional processes. At the same time, it can achieve water savings of up to 50% and reduce energy costs by up to 40%.

**Fossil and petrochemical resources**

BASF’s most important raw materials (based on volume) include liquid gas and natural gas, as well as crude oil-based petrochemical products such as naphtha and benzene. We mainly use liquid gas and natural gas to generate energy and steam, and to produce key basic chemicals such as ammonia or acetylene. Naphtha is mostly fed into our steam cracker, where it is split into products such as ethylene and propylene – both important feedstocks for numerous value chains. We use aromatics such as benzene or toluene to manufacture high-performance plastics, among other products. Thanks to a high degree of forward and backward integration, we can produce many feedstocks for our value chains efficiently while conserving resources within the BASF Verbund. This increases supply security and reduces dependence on external supply sources to just a few key raw materials. We source these from different suppliers to minimize supply risks.

As part of our efforts to improve sustainability, we are continuously investigating whether fossil and petrochemical resources can be replaced with non-fossil alternatives. We carefully consider economic, environmental and social aspects, as well as other important criteria like supply security and product safety. Our aim is to increase the share of renewable and recycled feedstocks in our value chains. This brings with it challenges and compromises in the supply of both energy and resources for carbon-based organic chemistry, for example, in striking the balance between competitiveness and the additional costs of using renewable energy, or between renewable resources and land use. We raise awareness of these trade-offs through close dialog with our stakeholders and our involvement in sustainability initiatives, and help to find solutions.

**Renewable resources**

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

In addition to fossil resources, we employ renewable raw materials, mainly based on vegetable oils, fats, grains, sugar and wood. In 2020, we purchased around 1.2 million metric tons of renewable raw materials. For instance, we use renewable resources to produce ingredients for the detergent and cleaner industry, or to source natural active ingredients for the cosmetics industry. We also use renewable feedstocks such as biomethane or bio-naphtha in our Verbund as an alternative to fossil resources. The mass balance approach allows us to allocate the amount of renewable resources used to a wide variety of end products (see box on page 116). Examples include the biomass balance polyisobutene OPPANOL® BMBCertTM (see page 84) or the biomass balance versions of our Styropor®, Neopor® and Styrodur® insulation materials.

As for fossil raw materials, we also consider how renewable resources impact sustainability topics along the value chain. Alongside positive effects like saving greenhouse gas emissions, these can also have negative effects on areas such as biodiversity, land use or working conditions, depending on the raw material. This is why we carefully weigh up the advantages and disadvantages of using renewable resources, for example using Eco-Efficiency Analyses. We also take recognized certification standards such as the Roundtable on Sustainable Palm Oil into account in our decisions. We want to minimize raw material-specific risks and increase sustainability with measures, projects and targeted involvement in initiatives. Our activities here concentrate on value chains that are relevant quantitatively, such as palm-based raw materials, or that do not yet have certification standards, such as castor oil. We are also working on product innovations and on enhancing production processes to improve the profitability and competitiveness of renewable resources.

Palm oil, palm kernel oil and their derivatives are some of our most important renewable resources. We mainly use these raw materials to produce ingredients for the cosmetics, detergent, cleaner and food industries. We aim to ensure that palm-based raw materials come from certified sustainable sources and have actively supported the Roundtable on Sustainable Palm Oil (RSPO) since 2004. Based on the Group-wide Supplier Code of Conduct (see page 113), we have laid down our expectations of suppliers in the oil palm value chain in an additional Palm Sourcing Policy. This addresses aspects such as forest and peat conservation, respect of human and labor rights, smallholder inclusion, and certification and traceability standards. The annual BASF Palm Progress Report reports on our measures and progress toward more sustainability and transparency in the value chain.
We purchased 227,213 metric tons of certified palm oil and palm kernel oil in 2020. We therefore reached our goal of only sourcing RSPO-certified palm oil and palm kernel oil by 2020. By 2025, we want to do the same for the most important intermediate products based on palm oil and palm kernel oil, including fractions and primary oleochemical derivatives as well as vegetable oil esters. We were able to trace 96% of our global palm footprint to oil mill level as of the end of 2020. In addition, we continued to drive forward the RSPO supply chain certification of our sites for cosmetic ingredients. At the end of 2020, 25 production sites worldwide were certified by the RSPO.

We continue to see growing demand for certified palm-based products from our customers. Sales volumes rose by more than 30% compared with the previous year. We are expanding our range 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.

We source most of our palm-based raw materials from Malaysia and Indonesia. Smallholders account for around one-third of the total volumes produced there. We have worked together with The Estée Lauder Companies, the RSPO and Solidaridad in Indonesia since 2019 to strengthen smallholder structures and sustainable production methods at local level. The project in the province of Lampung supports around 1,000 independent smallholders in improving their livelihoods and the sustainable production of palm oil and palm kernel oil. The focus is on efficient and sustainable farming practices and health and safety standards. The goal is for at least one-third of program participants to become certified according to the RSPO Smallholder Standard in three years.

Also important for BASF, albeit at a much smaller scale, is castor oil. We use castor oil to manufacture products such as plastics and ingredients for paints and coatings, as well as products for the cosmetics and pharmaceutical industries. We established the Sustainable Castor Initiative – Pragati in 2016 together with Arkema, Jayant Agro and Solidaridad as there were previously no globally defined and recognized certification standards. The aim is to improve the economic situation of castor oil farmers in India and, at the same time, raise awareness of sustainable farming methods. Around 80% of the world’s castor beans are produced in India, mainly by smallholders. As part of the project, smallholder farmers receive training on topics such as cultivation methods, efficient water use, health and the safe use of crop protection products based on a specially developed sustainability code. Since the project was initiated, more than 4,500 smallholders and over 8,700 hectares of land have been certified for sustainable castor cultivation. Yields from this land have risen by at least 50% compared with baseline 2016. We will source the first certified sustainable castor oil from the program in 2021. In the long term, we want to increase the share of this oil to cover our total demand.

Our raw materials for cosmetic active ingredients mainly come from plants. Two examples of holistic programs that consider the various aspects of sustainability are our products based on rambutan and argan. The rambutan tree belongs to the soapberry family. Its fruit is mainly sold for food. Our research and development discovered a method to extract the bioactives contained in the peel, leaves and seeds. The commercialization of the rambutan tree’s by-products, which were previously disposed of as waste, creates new income streams for farmers and expands our portfolio of natural active ingredients. As part of our rambutan program, we have worked closely together with two small plantations in the Vietnamese province of Dong Nai since 2014, which supply us with sustainably produced, certified organic raw materials. The partnership focuses in particular on responsible farming practices and social inclusion, including gender equality, safe working conditions and fair incomes.

We have cooperated with Targanine in the region of Agadir in Morocco since 2005. The network of six argan oil cooperatives supplies 16 products – including argan oil, essential oils and bee products – to BASF under fair trade conditions. Some 2,000 women from rural areas now work in the cooperatives. Commercialization helps to preserve the argan forest and strengthens local communities, for example, by providing additional income and through literacy programs and health initiatives. In 2020, the certification organization Ecocert awarded our cosmetic active ingredient Lipofructyl™ Argan the “Fair for Life” label for the fourth time in a row, confirming the sustainability of the supply chain.

For more information on renewable resources, see basf.com/en/renewables
For more information on our voluntary commitment to palm oil products and the Palm Progress Report, see basf.com/en/palm-dialog

Recycled feedstocks

Recycling is becoming increasingly important due to limited resources, growing sustainability requirements in the markets and regulatory developments. We want to increase the use of recycled feedstocks with our Circular Economy Program. From 2025 onward, we aim to process around 250,000 metric tons of recycled and waste-based raw materials every year worldwide, replacing fossil raw materials (see page 30).

One focus here is chemically recycling plastic waste. This technology complements mechanical recycling and can help to reduce the amount of plastic waste that is disposed of in landfill or thermally recovered. Chemical recycling breaks down plastics into their building blocks or converts them into basic chemicals. Different methods are used to achieve this. In our ChemCycling™ project, our partners use the thermochemical process of pyrolysis to extract pyrolysis oil from mixed plastic waste or used tires, which were not previously recycled. We can feed this pyrolysis oil into our Verbund structure as an alternative to fossil raw materials and use it to make new products. These have the same properties as products manufactured from fossil feedstocks. We use a certified mass balance approach to allocate the percentage of recycled materials to the end product (see box on page 116). Since 2020, we have been able to offer our customers the first commercial Ccycled™ products. After investing in Quantafuel AS in 2019, we expanded our supply base with...
pyrolysis oil from used tires in 2020 with a partnership with New Energy and an investment in Pyrum Innovations AG.

We also took a crucial step forward in the chemical recycling of used polyurethane foam mattresses in 2020: A wet chemical process developed by BASF can be used to break down soft polyurethane foam to recover the polyol originally used, which can be used to produce new polyurethane foam. The first test foams show promising results.

BASF continues to recycle the precious metals used in automotive, process and chemical catalysts. These contain precious metals like platinum, palladium and rhodium. Treating and recovering resources from spent automotive catalysts is a complex process. All of the precious metals we recover in this way are reused as feedstocks in catalyst production.

The growing demand for electromobility is also increasing the need for lithium-ion battery recycling. As a leading producer of battery materials with local production capacities in the three main markets – Asia, Europe and the United States – in the future, BASF has in-depth expertise in battery chemistry and process technology. Together with our partners, we are leveraging this expertise to develop a closed-loop system for the raw materials used to produce cathode active materials, such as nickel, cobalt, manganese and lithium. The objective is to further increase sustainability in the value chain for batteries. In 2020, we launched the project “Recycling lithium-ion batteries for electric vehicles” (ReLiVe) together with Eramet and SUEZ. The project received €4.7 million in funding from the European Union. The project is designed to be ready to be used by the end of 2022. BASF is also an active member of the Responsible Minerals Initiative (RMI).

Mineral raw materials

We procure a number of mineral raw materials, which we use to produce mobile and process emissions catalysts or battery materials, among other products. We are continually improving our products and processes to minimize the use of primary mineral raw materials. At the same time, we are driving forward the recycling of mineral raw materials, for example, by recovering platinum metals from mobile and process emissions catalysts and using these as secondary resources (see “Recycled feedstocks”).

Sourcing mineral raw materials responsibly is important to BASF. We have selected suppliers confirm to us that they do not source minerals as defined in the Dodd-Frank Act from the Democratic Republic of Congo or its neighboring countries. If there is cause for concern, we reserve the right to audit suppliers and, if necessary, terminate the business relationship. We implemented the EU Conflict Minerals Regulation by the deadline in early 2021. This defines supply chain due diligence for 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 responsible and sustainable global supply chains for other mineral raw materials. These include cobalt, a key component in the production of battery materials for electric vehicles, among other applications. Our cobalt supply chain for battery materials is organized according to special sustainability criteria for cobalt procurement. For example, we do not purchase cobalt from artisanal mines and also aim to exclude this in supply chains through our supply chain management as long as responsible artisanal production cannot be verified. In addition, we have signed a long-term supply agreement with Nornickel for nickel and cobalt from a metal refinery in Finland. The agreement ensures locally sourced and secure supply of raw materials for battery production in Europe.

Together with BMW, Samsung SDI, Samsung Electronics, Volkswagen and the German governmental agency for international cooperation (Gesellschaft für Internationale Zusammenarbeit, GIZ), we have been involved in Cobalt for Development since 2018. The cross-industry initiative aims 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. To achieve this, the initiative offers programs such as training on important environmental, social and governance aspects of responsible mining practices. Training for 12 mining cooperatives in Kolwezi started in October 2020. The initiative aims to train more than 1,500 artisanal cobalt miners on topics such as occupational safety and environmental management by mid-2021. Cobalt for Development also works closely together with local nongovernmental organizations and Bon Pasteur/the Good Shepherd International Foundation to create additional income opportunities for families and improve access to education. For example, a new building for Kisote’s public elementary and secondary school was constructed and training was held on topics such as farming.

We are also involved in various international initiatives to strengthen sustainability and innovation in the value chain for batteries. These include the Global Battery Alliance (GBA), which we co-founded in 2017. It brings together business, government and civil society and develops standards and tools to create a socially responsible, ecological and economically sustainable, and innovative value chain for batteries. For instance, BASF is working with the GBA on a battery pass. In the future, this “digital twin” will contain information on the sustainability of a battery to increase transparency in the value chain. The first test version will be developed in 2021 and the battery pass should be ready to be used by the end of 2022. BASF is also an active member of the Responsible Minerals Initiative (RMI).
Another mineral raw material that BASF processes is mica. We use mica to produce pigments, which are used in products such as coatings. For the majority of our demand, we use mica from our own mine in Hartwell, Georgia, and some of our businesses source exclusively from this mine. Third-party suppliers are requested to source mica in accordance with internationally recognized standards which, among other things, exclude child labor. As a member of the cross-industry Responsible Mica Initiative, BASF actively contributes to the eradication of child labor and unacceptable working conditions in the Indian mica supply chain.

For more information on the Cobalt for Development project, see basf.com/cobalt-initiative
Environmental Protection, Health and Safety

Responsible Care Management System

Protecting people and the environment is our top priority. Our core business – the development, production, processing and transportation of chemicals – demands a responsible approach. We address environmental, health and safety risks with a comprehensive Responsible Care Management System. We expect our employees and contractors to know the risks of working with our products, substances and plants and to handle these responsibly.

Responsible Care Management System

Global EHS directives and standards

BASF is actively involved in the International Council of Chemical Associations’ (ICCA) Responsible Care® initiative and has endorsed the Responsible Care® Global Charter. Our Responsible Care Management System comprises the global directives, standards and procedures for environmental protection, health and safety (EHS) for the various steps 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 responsibilities, requirements and assessment methods. The Environmental Protection, Health & Safety unit in the Corporate Center defines Group-wide management and control systems and monitors compliance with internal guidelines and legal regulations, while the sites and legal entities implement these requirements locally. Our policies and requirements are continuously updated. This is why we also maintain dialog with government institutions, associations and international organizations.

We set ourselves ambitious goals for environmental protection, health and safety (see page 32) and regularly review our performance and progress with audits. We assess the potential risks and weaknesses of all our activities – from research and production to logistics – and the effects of these on the safety and security of our employees, the environment or our surroundings. We use databases to 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

131 audits to monitor performance and progress

Regular audits help ensure that our safety, security, health and environmental protection standards are met. We conduct regular audits every three to six years at all BASF sites and at companies in which BASF is a majority shareholder. We take a risk-based approach and use an audit database to ensure that all sites and plants worldwide are regularly audited. 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. After the integration phase is complete, they are generally audited within one to two years, depending on complexity and size. We have defined our regulations for Responsible Care audits in a global Corporate 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 remediation 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, 150 BASF production sites are certified in accordance with ISO 14001 and EMAS (Eco-Management and Audit Scheme) (2019: 183). In addition, 54 sites worldwide are certified in accordance with OHSAS 18001 or ISO 45001 (2019: 53).

In the BASF Group in 2020, 112 environmental and safety audits were conducted at 60 sites (2019: 137 audits at 90 sites). The focus was on auditing sites based on the level of risk. For production plants with a medium and high hazard potential, we additionally conducted 19 short-notice audits at seven sites (2019: 42 audits at 33 sites). The sites of the businesses acquired from Bayer in 2018 were evaluated in 2020 as planned. We aim to audit the sites acquired from Solvay in 2020 from the end of 2021.

Due to the coronavirus pandemic, medical personnel including auditors had to concentrate on monitoring and responding to the pandemic and on global pandemic preparedness. For this reason and due to the travel restrictions, only one site was audited on occupational medicine and health protection in 2020 (2019: 15). All other audits and health performance control visits were postponed to 2021.

For more information on occupational safety and health protection, see page 122 onward

Costs and provisions for environmental protection in the BASF Group

<table>
<thead>
<tr>
<th>Costs and provisions</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating costs for environmental protection</td>
<td>1,125</td>
<td>1,035</td>
</tr>
<tr>
<td>Investments in new and improved environmental protection plants and facilities</td>
<td>231</td>
<td>328</td>
</tr>
<tr>
<td>Provisions for environmental protection measures and remediation</td>
<td>693</td>
<td>654</td>
</tr>
</tbody>
</table>

a Investments comprise end-of-pipe measures as well as integrated environmental protection measures.
b Values shown refer to December 31 of the respective year.

c For more information, see the Notes to the Consolidated Financial Statements on pages 252 and 289

1 The decrease compared with the previous year is attributable to the sale of the construction chemicals business and the related sites.
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, to prevent property and environmental damage, and to 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 and 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 mandatory global standards for safety, security, and environmental and health protection. A worldwide network of experts ensures these are implemented. 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 and incidents as well as their causes and consequences in detail at a global level to learn from these. Hazard assessments 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 our safety culture.

By the end of 2020, we had introduced digital solutions and applications at around 250 plants worldwide to further increase safety, security, planning capability and availability. We plan to implement these at around another 170 plants by 2022. Such solutions include augmented reality: At many sites, our employees already use mobile end devices and special apps for day-to-day tasks such as safety inspections, which continuously improves the efficiency and quality of our processes. Other applications include efficiently simulating maintenance and production processes in digital plant models and predictive maintenance. At the Ludwigshafen site in Germany, for example, over 40 plants already use predictive maintenance models to monitor plant components such as compressors, pumps or heat exchangers.

Leaders are important role models for employees, which is why environmental protection, health, safety and security are discussed with newly appointed senior executives. Senior executives with a particular responsibility for such topics, for example, in production, also receive specific further training to be able to meet their responsibilities. Due to the restrictions caused by the coronavirus pandemic, the seminars for senior executives could only take place to a limited extent in 2020. We will therefore expand our offering with digital formats in 2021.

Global safety initiative

- First decentralized Global Safety Days

Our global safety initiative was established in 2008 and plays a key role in the ongoing development of our safety culture. For the first time, decentralized virtual safety days were held around the world in 2020. As a result of the new organizational structure and due to the different regional measures to fight the coronavirus pandemic, each site could decide on the focus and implementation of the safety initiative. In the Asia Pacific region, many sites organized activities under the banner of “Safety, my responsibility!” while numerous events reflecting the motto of “Halt! Safety champions pause for safety” were held at the Ludwigshafen site in Germany. Many events were held online using interactive formats. In the interest of our employees’ health, giving them the opportunity to find out about safety-related topics and to learn from each other. This involvement and lively discussion, even in times of a pandemic, make a major contribution to our safety culture. For more information on the global safety initiative, see basf.com/global-safety-initiative

Occupational safety

- Employees and contractors worldwide instructed on safe behavior

Our aim is to reduce the worldwide lost-time injury rate to no more than 0.1 per 200,000 working hours by 2025. To prevent work-related accidents, we encourage and promote risk-conscious behavior and safe working practices for every individual, learning from incidents and regular discussion. We are constantly refining and enhancing our requirements and training.

2025 target

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

\[ \leq 0.1 \]

In addition to the legally required briefings, BASF requires new employees and contractors to complete compulsory safety training, as well as regular training on the safe handling of chemicals and the correct use of personal protective equipment for employees at our production sites.

1 Hours worked by BASF employees, temporary employees and contractors
Easier with an app

Hazard assessments are the main occupational safety tool for preventing accidents and work-related illness. In the future, a new mobile hazard assessment app can be used at the Ludwigshafen site in Germany to report occupational hazards directly on site using explosion-proof smartphones or tablets. This information can later be edited on a computer. There are many advantages to this approach. Digital processes do not save time and avoid transcription errors – images and notes also allow for more detailed information to be passed on without having to enter this twice. This makes it easier to review the effectiveness of the measures, making the app a valuable, integrated tool that complements the existing backend application. The hazard assessment app was tested at the first plants in 2020 and made more user-friendly based on the findings. We want to expand availability to further plants at the Ludwigshafen site from 2021 and share experiences from the pilot phase in a global network.

In 2020, 0.3 work-related accidents per 200,000 working hours¹ occurred at BASF sites worldwide (2019: 0.3). The share of chemical-related accidents declined slightly to 6% (2019: 7%). Unfortunately, there was one fatal work-related accident in 2020 (2019: 1). At the Gunsan site in South Korea, an employee of a contractor succumbed to injuries sustained from falling after receiving an electric shock during painting work on a high-voltage transmission tower. BASF supported the relevant authorities in their investigation into the circumstances and cause of the accident. We use the findings to take appropriate measures to prevent this from happening again. Such measures include regular information and awareness campaigns.

Process safety

- Regular review of plant safety concepts and performance of implementation checks and safety-related measures
- Global initiatives to reduce process safety incidents
- Production networks and global training methods foster dialog

Process safety is a core part of safe, effective and thus sustainable 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 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 plant safety concept and implementation check 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 cycles, we verify that our protection concepts, safety reviews and resulting safety measures have been carried out in all our plants at timely intervals based on risk potential. 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

We use the number of process safety incidents (PSI) per 200,000 working hours¹ as a reporting 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 2020, we recorded 0.3 process safety incidents per 200,000 working hours worldwide (2019: 0.3). We investigate every incident in detail, even under the constraints of the coronavirus pandemic, analyze causes and use the findings to derive suitable measures. We share the findings in our global network in the interest of continuous improvement.

Around the world, we promote the reduction of process safety incidents and improve risk awareness with a culture of dealing openly with mistakes and initiatives to foster dialog around potential safety risks. In reducing plant safety incidents, the main focus is on the implementation of technical measures. Bolstered by a greater risk awareness, avoiding and detecting all leaks was again a key priority in 2020 with the “Zero Loss of Containment Mindset” initiative in North America and the “Zero leakage” initiative in South America.

In addition, we are continually refining and expanding our training methods and offerings to increase risk awareness. Due to the restrictions associated with the coronavirus pandemic, in-person seminars were also held as virtual meetings or taught using web-based applications in 2020.
We play an active role in improving process safety around the world in a global network of internal and external experts, through our involvement in organizations such as the International Council of Chemical Associations (ICCA) or the Center for Chemical Process Safety (CCPS), and by fostering dialog with government institutions. For more information on process safety, see basf.com/process_safety

**Health protection**

- **Global standards for corporate health management**
- **2020 Global Health Campaign: “Protect yourself and others”**

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 requirement. A global network of experts provide implementation support. We monitor compliance with these standards at BASF sites with regular audits.¹ We measure our performance in health protection using the Health Performance Index (HPI). This has five components: recognized occupational diseases, medical emergency drills, first aid, preventive medicine and health promotion. Each component contributes a maximum of 0.2 to the total score, meaning that the highest possible score is 1.0. We aim to reach a value of more than 0.9 every year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Target score</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.96</td>
<td>0.96</td>
</tr>
<tr>
<td>2017</td>
<td>0.97</td>
<td>0.97</td>
</tr>
<tr>
<td>2018</td>
<td>0.96</td>
<td>0.97</td>
</tr>
<tr>
<td>2019</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>0.92</td>
<td></td>
</tr>
</tbody>
</table>

With an HPI of 0.92, we once again reached this target in 2020 (2019: 0.97). The figure is slightly lower than in previous years due to the coronavirus pandemic, as a result of which a number of criteria crucial to the HPI could not be fully met. For instance, activities that required physical participation such as emergency drills, examinations or first aider training could not be held on the usual scale.

The coronavirus pandemic also made many health protection measures necessary in 2020. Activating our pandemic plans, which have been mandatory for all sites since 2010, sharing information in our global BASF medical network, and working closely together with the authorities, employee representatives and our partners at BASF sites enabled us to make and successfully implement sound and timely decisions according to the situation. Our actions focused on the health of all of our employees, contractors and third parties. Measures included developing hygiene concepts, tracing and breaking infection chains, and providing information to and raising awareness among employees via the intranet and at the site gates.

In light of the coronavirus pandemic, the annual global health campaign on the theme “Protect yourself and others – stay healthy in 2020” was developed at short notice and offered around the world. The focus was on preventive hygiene measures, vaccinations and preventing infection. There were also special offerings on remote working, such as videos and consultations on nutrition, exercise/ergonomics and psychological stress. Over 450 sites worldwide took part in the health campaign with activities such as workshops, courses, talks and exercises. Another focus in 2020 was on influenza prevention. BASF employees could be vaccinated against the seasonal flu at many sites around the world, an offer that was very well received. At the Ludwigshafen site in Germany, for example, around three times more employees participated in the vaccination campaign than in past years.

We raise employee awareness of health topics with offerings tailored to 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

¹ In 2020, medical personnel including auditors had to concentrate on monitoring and responding to the pandemic situation and on global pandemic preparedness. For this reason and due to the coronavirus-related travel restrictions, only one site was audited on occupational medicine and health protection in the year under review (see page 121).
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. An IT system to support emergency response helps us to speed up communication between the relevant players in the event of a crisis and maintain the best possible overview of the situation. This enables the crisis management team to record and process events around the world better and in more detail.

We regularly check our emergency systems, crisis management structures and drill procedures with employees, contractors, local authorities and emergency rescue workers. For example, in 2020 we conducted 176 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 inform business travelers and transferees about appropriate protection measures prior to and during travel in countries with elevated security risks. After any major incident, we can use a standardized global travel system to locate and contact employees in the affected regions.

We protect our employees, sites, plants and company know-how against third-party interference. This includes, for example, analyzing potential security risks in the communities surrounding our production sites and addressing in depth the issue of cybersecurity. BASF applies the “security by design” principle. As early as the concept phase, all internet of things applications are critically reviewed from a cybersecurity perspective. We are continually developing our ability to prevent, detect and react to security incidents with various measures and training programs. Our global Cyber Security Defense Center monitors and protects our IT systems against hacker attacks. We cooperate closely with a global network of experts and partners to ensure that we can protect ourselves against cyberattacks as far as possible. Our IT security system is certified according to ISO 27001:2013. This also includes ISO 27019:2018 for critical infrastructure.

Around the world, we work to sensitize our employees about protecting information and know-how. For example, we further strengthened our employees’ awareness of risks in 2020 with mandatory online training for all employees and other offerings such as seminars, case studies and interactive training. 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 around 650 employees. They support the implementation of our uniform requirements and hold events and seminars on secure behaviors. Around 100,000 employees had been trained on the basics of cybersecurity and information protection in 2020. 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.

For more information on emergency response, see basf.com/emergency_response

Global Be Secure month

Cyberattacks have become commonplace. Social engineering calls in particular have risen sharply in recent times. Alongside technical security, every individual’s conduct plays an important role in protecting companies against information theft and cybercrime.

We want to raise employee awareness around cybersecurity and give them the tools to effectively defend themselves. As well as online training, which is compulsory for all employees, we hold a Be Secure month every year in October. In 2020, over 16,000 employees participated in around 90 events in nine languages. These ranged from talks on topics such as counter-espionage at BASF to live hacking demonstrations by an external digital forensics expert. In addition, information protection officers around the world organized regional and local events, mainly held online due to the coronavirus pandemic.
Product stewardship

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

Product stewardship is of central importance for us. We want to ensure that our products meet our customers’ quality expectations and pose no risk to people, animals or the environment when used in the manner intended. 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 – and to the ongoing optimization of our products. This commitment to product stewardship is enshrined in our Responsible Care® charter and the initiatives of the International Council of Chemical Associations (ICCA). Our aim is to comply with all relevant national and international laws and regulations. Our global requirements define rules, processes and responsibilities, for example, to ensure uniformly high product stewardship standards worldwide. In some cases, voluntary initiatives exceed local statutory regulations. We regularly conduct internal audits to monitor compliance with global standards.

We maintain and evaluate environmental, health and safety data for all of our substances and products in a global database. This information is continuously updated. The database forms the basis for our safety data sheets, which we make available to our customers in around 40 languages. These include information on the physical/chemical, toxicological and ecotoxicological properties of products, potential hazards, first aid measures, measures to be taken in the case of accidental release, and disposal. Our global emergency hotline network enables us to provide information around the clock. In order to help users to quickly find out about our products and the risks associated with them, we use the Globally Harmonized System (GHS) to classify and label our products around the world, provided this is legally permissible in the country concerned. We take into account any national or regional modifications within the GHS framework, such as the CLP Regulation in the European Union or HazCom in the United States. We train our employees, customers and logistics partners worldwide on the proper handling and optimal use of selected products with particular hazard potential. In associations and together with other manufacturers, BASF is pushing for the establishment of voluntary global commitments to prevent the misuse of chemicals.

BASF supports 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 and to support governments in the introduction of local chemical regulations. We are also involved in initiatives such as workshops and training seminars in emerging markets. In 2020, these included the virtual ASEAN (Association of Southeast Asian Nations) workshop on regulatory cooperation.

Global chemicals regulations

Most of the products we manufacture are subject to statutory chemicals regulations. We want to ensure compliance with these. We are bound by the relevant regional and national chemicals regulations, which continue to grow in number worldwide. Examples include REACH in the European Union, TSCA in the United States, KKDIK in Turkey or K-REACH in South Korea. BASF Group companies work closely together with a global network of experts to ensure that BASF complies with the applicable regulations. For example, we submitted the relevant substances to the Turkish authorities in 2020 – an important milestone in the pre-SIEF notification process.1

After successfully registering all substances in Europe, our REACH activities concentrate on aspects such as dossier evaluation, substance evaluation, authorization and restriction. We are also required to continually update our registration dossiers. To satisfy the complex requirements of REACH, we are in regular contact with suppliers, customers, industry associations and government authorities. For example, BASF is working together with the European Chemicals Agency (ECHA) on a project to improve the quality of REACH dossiers. BASF was one of the first companies to join this industry-wide initiative.

Product stewardship for crop protection products and seeds

Crop protection products and seeds are highly regulated at national and international level, which brings with it strict requirements for registering and re-registering active ingredients and crop systems. Regulatory approval is only granted when extensive documentation can be provided showing that our products are safe for people, animals and the environment. Potential risks are assessed and minimized throughout the research, development and registration process, and on an ongoing basis following successful market registration. We regularly perform a large number of scientific studies and tests to ensure that, as far as possible, our registration dossiers address all questions on potential environmental and health effects.

We adapt our portfolio to the specific regional markets as crops, soils, climate conditions, plant diseases and farming practices vary around the world. Consequently, product approvals differ from country to country.

BASF adheres to the International Code of Conduct issued by the World Health Organization (WHO) and the Food and Agriculture

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1 Pre-SIEF notification for KKDIK, Turkish REACH, is similar but not identical to pre-registration under E.U. REACH. It serves to bring together future registrants for the purposes of joint registration and to enable the creation of a SIEF (substance information exchange forum).
Organization (FAO) for the distribution of crop protection products. These are only marketed once they have been approved by the relevant authorities. We want to ensure and meet high safety standards worldwide for our products. This applies in particular to distribution in countries that do not have their own or only low-level regulation for crop protection products, as is the case in many emerging markets. We no longer market WHO Class 1A or 1B products (high acute oral and dermal toxicity). Depending on availability, we offer our customers alternatives.

All of BASF’s crop protection products can be used safely under local farming conditions if the information and directions on the label are followed. Customers can contact us directly if they have any questions, complaints or issues, for example, by calling the telephone number printed on product labels, using the contact forms on our websites or by approaching our sales employees directly. We record all products incidents relating to health or the environment in a global database. If necessary, we take appropriate measures in the basis of this information, such as updating the instructions for use on the product label to minimize preventable incidents in the future. We communicate changes to instructions for use through channels such as our Farmer Field School initiatives in Asia and in training programs such as the On-Target Application Academy in the United States or our FarmNetwork Sustainability in Europe.

One of the ways we meet our commitment to product stewardship is by offering a wide range of courses and training on the safe storage and safe use of our products. In India, for example, BASF launched the Suraksha Hamesha program. Suraksha Hamesha means “safety all the time.” The program creates a platform for educating farmers and agricultural workers about the nine steps of responsible use of crop protection products and personal protection. Through Suraksha Hamesha, BASF has engaged with around 150,000 agricultural workers and around 29,000 users across India since 2016. BASF also involves government agencies and the central government’s farm extension teams in these meetings to support and promote farm safety. We are additionally involved in numerous scientific and public organizations and initiatives. Together, we are working on solutions for sustainable agriculture that meet long-term economic, ecological and social needs.

We also work closely together with associations such as Crop Life International and the European Crop Protection Association (ECPA) to promote the safe and proper use of crop protection products. For example, we support the two associations’ safe use initiatives and various programs on the proper disposal and recycling of product containers. Technological innovations developed together with industry partners such as the easyconnect closed transfer system in Europe or the Wisdom system in South America also help to make using crop protection products easier and safer.

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 using state-of-the-art knowledge and technology. Animal studies are only conducted when they are required by law, for example as part of REACH, and none of the alternative methods approved by the authorities are available.

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 develop and are continuously optimizing alternative methods to experimentally assess the safety and tolerance of our products without animal studies. Our aim is to reduce and refine animal studies to minimize the impact on them. We already use alternative methods in more than a third of our toxicological tests. Currently, 35 alternative methods are being used in our labs and another 14 are in the development stage. BASF spent €3.5 million toward this purpose in 2020. 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, BASF SE’s 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. We are also involved in initiatives such as the European Partnership for Alternative Approaches to Animal Testing (EPAA) to strengthen the cross-sector development of alternative methods.

Management of new technologies

- Continual safety research on nano- and biotechnology

Nanotechnology and biotechnology offer solutions for key societal challenges – such as environmental and climate protection or health and nutrition. For example, nanomaterials can improve battery performance and biocatalytic methods can improve process resource efficiency. We want to harness the potential of both technologies. Using them safely and responsibly is our top priority.

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 numerous Verbund projects related to the safety of nanomaterials in Germany and around the world. The results were published in more than 150 scientific articles.

Together with partners from academia and government authorities, we are working on E.U.-funded projects to develop and validate methods for evaluating and grouping nanomaterials without the use of animal studies. In particular, grouping nanofarms can reduce
animal testing since individual forms do not have to undergo full toxicological testing – only one or more representative of the entire group. This is why we are developing new methods to group nanomaterials in groups with the same hazard potential in the E.U.’s PATROLS project. In the E.U.’s GRACIOUS project, we are developing concepts for defining and then evaluating the toxicological effects of these groups. In addition, together with the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC), we developed an internet application (NanoApp) and put this online in late November 2020. This makes the concepts developed to date available for the entire industry together with the regulatory requirements. The aim is to simplify the registration of nanomaterial groups under REACH.

Appropriate OECD testing and implementation guidelines must be developed for the new requirements for nanomaterials under REACH, the European chemicals regulation. We support this process by contributing our expertise in various working groups of the European Chemicals Agency (ECHA) and the OECD’s Business and Industry Advisory Group (BIAC). Many of the methods developed for nanoparticles could, in our view, also be used to evaluate solid particles in the future, an approach we bring up in regulatory discussions.

BASF makes successful use of biotechnology. We produce a range of products with the help of biotechnological methods. This provides us with extensive experience in their safe use in research and development as well as in production. Biotechnological methods are used to develop and produce products such as natural flavors and fragrances, enzymes and vitamins. Another application is the development of seeds for agriculture. We use both conventional and molecular biological methods to develop plants with improved characteristics, such as greater resistance to drought, pests or the pathogens that cause plant diseases. Tolerance of certain herbicides also secures yields and enables sustainable, no-till crop systems to increase CO$_2$ retention in the soil. Innovative breeding technologies can play a key role in the sustainable development of agriculture, for example, with varieties that are better adapted to changing environmental conditions or that have higher disease tolerance. In using biotechnology, we want to adhere to all relevant standards and legal regulations governing production and marketing. We are also guided by the code of conduct set out by EuropaBio, the European biotechnology association.
Transportation and storage

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

Strategy

- 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 through audits and assessments.

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 requirement. This is based on the Guidance on Safety Risk Assessment for Chemical Transport Operations published by 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 such as the ship inspection reports issued by the Chemical Distribution Institute (CDI) and the Oil Companies International Marine Forum (OCIMF).

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 traffic routes, provided BASF arranged the transport.

We recorded two incidents in 2020 with spillage of more than 200 kilograms of dangerous goods (2019: 3). None of these transportation incidents had a significant impact on the environment (2019: 0).

Securing raw materials supply via the Rhine River

At the Verbund site in Ludwigshafen, Germany, around 50% of incoming volumes are transported to the site by ship under normal conditions. In recent years, hot and dry summers often led to extended low water levels on the Rhine River, temporarily impacting logistics. We are implementing various measures to make the site more resilient to extended low water events in particular. These include a digital early warning system for low water, which was introduced in 2020. This makes it possible to forecast water level trends up to six weeks in advance, which significantly simplifies planning for raw materials supply and alternative transportation routes. We are also working with the German Federal Institute for Hydrology to improve water level forecasts. In addition, we chartered more ships that can navigate low water levels and invested in making loading stations more flexible. Together with partners, we are also developing our own type of ship designed for extreme low-water situations, which should start operation in late 2022. We support the hydraulic engineering measures proposed by the German Federal Ministry of Transport’s “Low water on the Rhine” action plan, in particular optimizing fairways on the Middle Rhine to improve long-term shipping conditions on the Rhine. We recorded no extended low water events that significantly restricted our logistics in 2020.

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 (TUIIS), in which BASF plays a coordinating role. In 2020, we provided assistance to public emergency response agencies and other companies in 112 cases (2019: 165). This included information on chemicals and their proper disposal, on-site operational support for transportation accidents involving hazardous goods, or information on human biomonitoring. We apply the experience we have gathered to improve our own processes and set up similar systems in other countries.

For more information on transportation safety, see basf.com/distribution_safety
For more information on emergency response, see basf.com/emergency_response

1. Hazardous goods are classified in accordance with national and international hazardous goods regulations.
Energy and climate protection

As an energy-intensive company, we are committed to energy efficiency and global climate protection. We want to further reduce emissions along the value chain. To achieve this, we rely on efficient technologies for generating steam and electricity, for example, and the increased use of renewable energies. We make our production processes as energy efficient as possible with the help of comprehensive energy management. We are researching and developing completely new processes and technologies to reduce our greenhouse gas emissions over the long term. In addition, our climate protection products make an important contribution toward emission reduction and resource efficiency.

Strategy

- **Climate protection target: CO₂-neutral growth until 2030**
- **Carbon management to reduce emissions**

Climate protection is very important to us and is an important part of our corporate strategy. As a leading chemical company, we want to achieve CO₂-neutral¹ growth until 2030. We aim to keep total greenhouse gas emissions from our production sites and our energy purchases stable at the 2018 level while growing production volumes. Based on our growth plans until 2030, this would mean reducing our specific greenhouse gas emissions by up to one-third compared with 2018. To achieve this, we have adopted comprehensive carbon management (see page 135) with three strategic levers: optimizing our plants, increasingly sourcing low-carbon energy, and developing completely new, low-emission technologies and processes. With these innovations, we want to lay the foundation for significant emissions reductions from 2030 onward. In connection with our climate protection target, we made Group-wide CO₂ emissions one of our most important key performance indicators at the beginning of the 2020 business year (see page 33). This makes emissions even more important to the operational and strategic steering of the BASF Group.

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 as well as the sector-specific standard for the chemical industry. Sharp increases in our greenhouse gas emissions, due for example to the startup of large-scale plants, are progressively offset. We assess investments and acquisitions with respect to the impact on our climate protection target. If, for technical or economic reasons, our carbon management activities cannot stabilize emissions at the 2018 level, we will also consider taking short-term external offsetting measures such as purchasing certificates.

Most of our greenhouse gas emissions are from the consumption of energy. At sites with internal supply capabilities, 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. More than 40% of our annual research and development spending² goes toward developing these products and optimizing our processes, as well as toward research projects to make our processes more energy and resource-efficient and to prevent greenhouse gas emissions.

We participate in the program established by the international non-profit organization CDP for reporting on data relevant to climate

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¹ The goal includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents.
² 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.
BASF Group’s greenhouse gas emissions according to the Greenhouse Gas Protocol*  
Million metric tons of CO₂ equivalents

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
<th>2018 (baseline)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASF operations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope 1*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ (carbon dioxide)</td>
<td>16.860</td>
<td>15.855</td>
<td>17.025</td>
</tr>
<tr>
<td>N₂O (nitrous oxide)</td>
<td>0.609</td>
<td>0.598</td>
<td>0.677</td>
</tr>
<tr>
<td>CH₄ (methane)</td>
<td>0.025</td>
<td>0.023&lt;sup&gt;f&lt;/sup&gt;</td>
<td>0.027</td>
</tr>
<tr>
<td>HFC (hydrofluorocarbons)</td>
<td>0.032</td>
<td>0.082</td>
<td>0.091</td>
</tr>
<tr>
<td><strong>Scope 2&lt;sup&gt;e&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>3.279</td>
<td>3.519</td>
<td>4.067</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20.805</td>
<td>20.077&lt;sup&gt;†&lt;/sup&gt;</td>
<td>21.887</td>
</tr>
<tr>
<td><strong>Offsetting</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total after offsetting</strong></td>
<td>20.805</td>
<td>20.077&lt;sup&gt;†&lt;/sup&gt;</td>
<td>21.887</td>
</tr>
<tr>
<td><strong>Sale of energy to third parties (Scope 1)</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>0.869</td>
<td>0.779&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.773</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21.674</td>
<td>20.856&lt;sup&gt;‡&lt;/sup&gt;</td>
<td>22.660</td>
</tr>
<tr>
<td><strong>Use of biomass&lt;sup&gt;i&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| CO₂                                                       | 0.024 | 0.004 | n/a  

* 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.  
† Emissions of NOₓ, CH₄ and N₂O have been translated into CO₂ equivalents using the Global Warming Potential (GWP), factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 2007, 4th assessment report. HFC emissions are calculated using the GWP factors of the individual compounds.  
‡ Market-based approach. Under the location-based approach, Scope 2 emissions were 3.052 million metric tons of CO₂ in 2019 and 3.362 million metric tons of CO₂ in 2020.  
§ Includes sales to BASF Group companies; as a result, emissions reported under Scope 2 can be considered twice in some cases.  
<sup>a</sup> Emissions are reported separately from Scope 1 and Scope 2 in accordance with the Greenhouse Gas Protocol.  
<sup>b</sup> Based on the greenhouse gas reporting framework of the Intergovernmental Panel on Climate Change (IPCC).  
<sup>c</sup> The comparative figure for 2018 has been adjusted to reflect updated data.  
<sup>d</sup> The comparative figure for 2019 has been adjusted to reflect updated data.  
<sup>e</sup> The comparative figure for 2019 has been adjusted to reflect updated data.  
<sup>f</sup> Emissions are reported separately from Scope 1 and Scope 2 in accordance with the Greenhouse Gas Protocol.

Global target and measures

We want to achieve CO₂-neutral growth until 2030. In other words, we aim to maintain total greenhouse gas emissions from our production sites (excluding emissions from sale of energy to third parties) and our energy purchases at the 2018 level (21.9 million metric tons of CO₂ equivalents) while increasing production. In 2020, the emissions reported under this target amounted to 20.8 million metric tons of CO₂ equivalents, an increase of 3.5% compared with the previous year (2019: 20.1 million metric tons of CO₂ equivalents). The decline in emissions due to measures to increase energy efficiency and optimize processes as well as lower production volumes were more than offset by the integration of the polyamide business acquired from Solvay in January 2020 and the fact that there were fewer shutdowns of large-scale, emission-intensive plants. Despite the global economic recovery and growing demand for chemical products, CO₂ emissions are expected to be at the prior-year level in 2021. We will implement targeted measures to stabilize emission levels. These include the implementation of further projects in 2020 that BASF plans to report in our annual report for 2021.

**2030 target**

**CO₂-neutral growth:**

Annual greenhouse gas emissions compared with baseline 2018 (BASF operations excluding sale of energy to third parties, including offsetting)
to increase energy efficiency and optimize processes, for example, to significantly reduce nitrous oxide emissions in Ludwigshafen, Germany. In addition, we are switching energy supply agreements to renewable energy sources, for example, in Freeport, Texas, where we have signed long-term supply agreements for wind power. Emissions will also be reduced by the divestiture of BASF’s global pigments business in 2021.

Energy supply of the BASF Group 2020

Electricity supply
- Purchased 30%
- Internally generated 70%

Steam supply
- Purchased 6%

Waste heat 45%
- Internally generated 49%

Specific greenhouse gas emissions from BASF operations (excluding sale of energy to third parties) compared with baseline 2018

<table>
<thead>
<tr>
<th>%</th>
<th>2018 baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
</tr>
</tbody>
</table>

Specific greenhouse gas emissions from BASF operations (excluding sale of energy to third parties) compared with baseline 2018

<table>
<thead>
<tr>
<th>Metric tons of CO₂ equivalents per metric ton of sales product</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased</td>
<td>0.574</td>
<td>0.639</td>
</tr>
</tbody>
</table>

We achieved our goal of introducing certified energy management systems according to DIN EN ISO 50001 at all relevant production sites by the end of 2020.

Through the introduction and ongoing maintenance of certified energy management systems, we want to identify and implement further potential for improvement in energy efficiency. This not only reduces greenhouse gas emissions and saves valuable energy resources, but also increases our competitiveness.

A global working group is responsible for steering the introduction of certified energy management systems and providing ongoing implementation support. All energy efficiency measures are recorded in a global database, analyzed and made available to BASF sites as best practices. We are currently pursuing more than 200 technical and organizational measures to reduce energy consumption and increase competitiveness. Further sites across all regions were

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1 Sales product volumes include sales between BASF Group companies; merchandise is not taken into account.
2 The selection of relevant sites is determined by the amount of primary energy used and local energy prices; does not yet include the polyamide business acquired from Solvay.
Energy and climate protection

In 2020, we were thus able to avoid a total of 6.2 million metric tons of carbon emissions.

We further improved energy and resource consumption in production with numerous projects around the world in 2020. For example, in China, we reduced our steam demand by optimizing steam traps at the Caojing site and installing a steam cooler at the Nanjing site. In the United States, we saved electricity by replacing a cooling tower at the Geismar site and modernizing a chilling unit in Freeport, among other measures. Process improvements at many other sites led to additional savings in steam, electricity and fuel.

We also rely on locally available sources to supply our sites with power. We generally consider the use of renewable energies in our decision-making processes, especially when purchasing electricity. Our research also helps to increase the efficiency of technologies for using renewable energy sources.

Reporting on greenhouse gas emissions along the entire value chain

Customers’ use of BASF climate protection products avoids greenhouse gas emissions

Calculation of product carbon footprints to increase transparency for our customers

BASF has published a comprehensive corporate carbon footprint every year since 2008. This report on all emissions along the value chain – from raw materials extraction to production and disposal. It also shows, on the basis of selected climate protection products, the emissions avoided through the use of these products.

The greenhouse gas emissions arising before and after BASF’s activities in the value chain (Scope 3 in accordance with the Greenhouse Gas Protocol) amounted to around 92 million metric tons of carbon emissions in 2020.
Greenhouse gas emissions along the BASF value chain in 2020\textsuperscript{a, b}

\begin{tabular}{|c|c|c|c|c|}
\hline
 & BASF & Customers & Disposal & Other \\
\hline
 & Production (including generation of steam and electricity) & Emissions from the use of end products (C 11) & Incineration with energy recovery, landfilling (C 12) & \textbf{Total} \\
\hline
\textbf{Suppliers} & 52 & 21 & 4 & 6 \\
\textbf{Purchased products, services and capital goods (C 1, 2, 3a)} & & & & \\
\hline
\textbf{Transport} & 4 & 6 & 24 & 6 \\
\textbf{Transport of products, employees’ commuting and business travel (C 4, 6, 7, 9)} & & & & \\
\hline
\textbf{BASF} & & & & \\
\textbf{Production (including generation of steam and electricity)} & & & & \\
\hline
\textbf{Disposal} & & & & \\
\textbf{Incineration with energy recovery, landfilling (C 12)} & & & & \\
\hline
\textbf{Other} & & & & \\
\textbf{(C 3b, 3c, 5, 8, 13, 15)} & & & & \\
\hline
\end{tabular}

Million metric tons of CO\textsubscript{2} equivalents

\textsuperscript{a} According to Greenhouse Gas Protocol; Scope 1, 2 and 3; categories within Scope 3 are shown in parentheses. For more information on Scope 3 emissions reporting, see basf.com/corporate_carbon_footprint

\textsuperscript{b} Emissions figures do not yet include the polyamide business acquired from Solvay.

CO\textsubscript{2} equivalents in 2020 (2019: 100 million metric tons of CO\textsubscript{2} equivalents). In 2020, BASF implemented a new digital application to calculate transport-related emissions, which evaluated around 68 billion metric ton kilometers for transport within BASF and to BASF customers by distance and transportation mode.

Our climate protection products offer our customers solutions to avoid greenhouse gas emissions over their entire life cycle compared with reference products. The systematic analysis we conduct on our portfolio – Sustainable Solution Steering (see page 45) – rates the use of these Accelerator solutions as particularly good with respect to climate protection and energy.

One example of Accelerator products are our lubricant additives, which give hydraulic fluids long-term lubrication stability combined with wear and corrosion protection. These can be used to design high-quality products with a longer service life. Together with our customer Fuchs Petrolub, we examined the environmental and climate friendliness of different hydraulic fluids. A joint eco-efficiency analysis analyzed three mineral oil-based fluids from Fuchs over their entire life cycle, including over 8,000 hours of use in a crawler excavator.

This showed that a standard hydraulic fluid has the lowest carbon footprint during the production stage. BASF uses more energy to produce the lubricant additives needed for high-performance hydraulic fluids, which means that these have higher carbon emissions. However, these products offer a significant advantage during the use phase: Compared with a standard hydraulic fluid, these reduce friction and increase pump efficiency, which significantly reduces the excavator’s fuel consumption. They save 9,600 liters of diesel over 8,000 hours of crawler excavator operation. Viewed over the entire life cycle, the high-performance hydraulic fluids therefore have a much better carbon footprint than standard hydraulic fluids.

Overall, the reduction in greenhouse gases corresponds to around 30 metric tons of CO\textsubscript{2} equivalents. In addition, high-performance hydraulic fluids have a much longer service life, which also saves fossil resources.

The findings of the study show that the advantages of high-performance oils first become clear in a holistic cradle-to-grave assessment that also considers the use phase. The product-related greenhouse gases emitted from resource extraction to the production of precursors and the BASF product (cradle to gate) are an important part of this approach.

In the future, we will calculate cradle-to-gate greenhouse gas emissions for almost all of our products to increase carbon transparency for our customers. We use an in-house digital solution to calculate the product carbon footprint (PCF). The methodology follows general standards for life cycle analysis such as ISO 14044 and ISO 14067, as well as the Greenhouse Gas Protocol Product Standard. We used the new method to calculate PCFs for the first products in 2020. We want to make the data for around 45,000 sales products available by the end of 2021. The transparency this creates enables us to target our CO\textsubscript{2} reduction measures to those areas where our customers can later achieve the greatest value added from lower carbon emissions in the value chain.

\textsuperscript{a} For more information on the sustainability analysis of our product portfolio, see page 45 onward

\textsuperscript{b} For more information on our emissions reporting, see basf.com/corporate_carbon_footprint
Climate protection is firmly embedded in our corporate purpose, “We create chemistry for a sustainable future,” and is a cornerstone of our strategy. We are committed to the Paris Climate Agreement and the goal of limiting global warming to below 2 degrees Celsius. Our innovative climate protection products such as insulation materials for buildings or battery materials for electromobility play a role here. We are also continually working to reduce our own carbon emissions. We have already almost halved our carbon emissions since 1990 through improvements to processes and methods – while simultaneously doubling sales product volumes.

Until 2030, we want to grow our production without adding further CO₂ emissions.¹ Our carbon management bundles our global activities to meet this climate protection target and further reduce our greenhouse gas emissions over the long term. We have adopted a three-pronged approach: We aim to increase production and process efficiency, purchase electricity from renewable sources, and develop completely new low-emission technologies and processes. We want to use these to significantly reduce our CO₂ emissions from 2030 onward.

Further improving process and energy efficiency

We aim to make our plants and processes even more efficient and resource-saving. When investing in our sites, we draw on our expertise and innovative technologies to optimize the use of raw materials and in this way, reduce CO₂ emissions. For example, our gas and steam turbine power plant at the Schwarzheide site in Germany is currently undergoing a €73 million modernization. Once it is started up in 2022, it will produce 10% more electricity and the CO₂ emissions factor of the power generated will be around 10% lower thanks to higher fuel efficiency.

That is why we will continue to invest in the creation and optimization of Verbund structures and drive forward the consolidation of production at highly efficient sites.

Increasing use of renewable energy

Our carbon management aims to increase the share of renewables in our energy supply. Nineteen sites in Europe and North America already source partially or fully emission-free electricity from suppliers.

Number of sites partially or fully powered by emission-free electricity in 2020

19

Wherever possible, we incorporate renewable energies when constructing plants and modernizing or establishing new sites. For example, we only used hydropower for the construction of our new battery materials plant in Harjavalta, Finland, in 2020 (planned startup: 2022). We plan to mainly use locally generated renewable electricity in the operational phase as well. This will enable us to offer cathode active materials with a lower carbon footprint. In 2020, we also started up photovoltaic plants with a nameplate capacity of around 1,300 kWp (kilowatt peak), for example at the Caojing and Pudong sites in China.

Developing climate-smart technologies

Most of our production processes and methods are already highly optimized, making further improvements to existing plants an increasingly difficult task. As a result, completely new technologies are needed to reduce greenhouse gas emissions over the long term and on a large scale. BASF researchers are working at full speed on this in our Carbon Management R&D Program, which focuses on the production of basic chemicals. These are the basis for many

¹ The goal includes other greenhouse gases according to the Greenhouse Gas Protocol, which are converted into CO₂ equivalents.
value chains and account for around 70% of the chemical industry’s greenhouse gas emissions in Europe.

As part of this R&D program, we are developing an innovative, climate-friendly production process for hydrogen (methane pyrolysis) together with partners from academia and industry in a project sponsored by the German Federal Ministry of Education and Research, to name one example. Hydrogen is used as a reactant in many chemical processes, such as ammonia synthesis. However, the processes currently used to produce hydrogen from methane, such as steam reforming, are extremely CO₂ emission-intensive. In methane pyrolysis, by contrast, methane is split directly into hydrogen and carbon. The resulting solid carbon could be used in the future to produce aluminum, for example. Methane pyrolysis requires around 80% less electricity than the alternative method of producing hydrogen using water electrolysis. If this energy comes from renewable sources, the process could be made carbon-free. Following extensive groundwork, including research into the reaction kinetics of the pyrolysis process and technical feasibility studies, we started up a test facility for methane pyrolysis at the Ludwigshafen site in Germany in 2020. It will provide insights into the heating concept, as well as the use of new types of high-temperature materials.

Another focus area of the R&D program is alternative heating concepts for our steam crackers. These large-scale industrial plants are used in the chemical industry to split petroleum into olefins and aromatics. To do this, it needs to reach temperatures of 850°C and higher. The cracker’s furnaces are usually operated with natural gas. An interdisciplinary team is working on developing a fundamentally new furnace concept based on an electrical resistance heater (e-furnace). If powered by renewable energy, this could avoid up to 90% of CO₂ emissions.

Another example from our Carbon Management R&D Program, which has been marketed since mid-2019 in cooperation with Linde, is a process known as dry reforming to produce syngas from methane and CO₂. Thanks to BASF’s newly developed SYNSPIRE™ catalyst in combination with an innovative process technology from Linde, less water vapor is required in syngas production and CO₂ is used in the process as a raw material. In this way, the DRYREF™ technology improves plants’ energy and carbon footprint.

The framework for the transformation

The transition toward a climate-friendly society remains a fundamental challenge of the 21st century. There are many ways in which the chemical industry can be part of the solution. The political and regulatory environment is also crucial to the development and industrial application of completely new production processes. Demand for green electricity will increase sharply with innovative, more climate-friendly technologies. At the Ludwigshafen site in Germany alone, we would need to roughly triple or quadruple our current electricity use (2020: 6.0 TWh) to fully implement new, low-carbon electricity-based production processes. As well as its availability, the price of green power is also a critical success factor. High prices are already hindering the more widespread adoption of green power today and impact the economic feasibility of future, new production processes. Sectors like the chemical industry, which compete in an international market, cannot pass on the additional costs caused by low-carbon technologies to their customers until a comparable carbon pricing mechanism exists globally – or at least at G20 level. Until then, governments must implement measures to ensure the competitiveness of climate-friendly processes.

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

1. Methane flows into the reactor.
2. Methane is heated to over 1,000°C using electricity from renewable sources (such as solar and wind power).
3. The methane is split in the hot center of the reactor. Gaseous hydrogen and solid carbon are formed.
4. The hydrogen rises to the top and can be extracted.
5. The carbon produced is a solid granulate.
Air, waste and soil

We want to minimize the impact of our activities on people and the environment by further reducing emissions to air, preventing waste and protecting the soil. Our plants are operated responsibly and we use natural resources with respect. We have set ourselves standards in global requirements and are continually improving the resource efficiency of our processes with our Operational Excellence program.

Strategy

- Minimizing environmental impacts
- Maximizing recovery options

Regular monitoring of our emissions to air is a part of our environmental management. In addition to greenhouse gases (see page 130 onward), we also measure and analyze emissions of air pollutants to avoid potentially harmful substances as best possible.

Our waste management is based on the systematic tracking of material flows and follows a clear hierarchy. We aim to avoid waste as far as possible. If this is not possible, we review the options for recycling or energy recovery in terms of a circular economy. Non-recyclable waste is disposed of properly and in an environmentally responsible manner. BASF’s Verbund structure helps us to avoid or reduce waste. We regularly audit external waste disposal companies to ensure that waste is disposed of properly. 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 sites, appropriate remediation measures are reviewed and implemented.

Emissions to air

- Emissions to air slightly lower

Total emissions of air pollutants from our production plants amounted to 23,791 metric tons in 2020 (2019: 25,040 metric tons). Emissions of ozone-depleting substances as defined by the Montreal Protocol totaled 14 metric tons in 2020 (2019: 26 metric tons). The successive changeover to alternative coolants has significantly reduced these emissions, down from 299 metric tons in 2002. Emissions of heavy metals in 2020 amounted to 4 metric tons (2019: 5 metric tons).

Emissions to air

<table>
<thead>
<tr>
<th>Metric tons</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants from BASF operations</td>
<td>23,791</td>
<td>25,040</td>
</tr>
<tr>
<td>CO (carbon monoxide)</td>
<td>3,507</td>
<td>3,530</td>
</tr>
<tr>
<td>NOx (total nitrogen oxides)</td>
<td>10,010</td>
<td>10,534</td>
</tr>
<tr>
<td>NMVOC (nonmethane volatile organic compounds)</td>
<td>4,702</td>
<td>4,496</td>
</tr>
<tr>
<td>SOx (total sulfur oxides)</td>
<td>1,981</td>
<td>1,982</td>
</tr>
<tr>
<td>Dust</td>
<td>2,000</td>
<td>2,320</td>
</tr>
<tr>
<td>NH4 (ammonia) and other inorganic substances</td>
<td>1,711</td>
<td>2,178</td>
</tr>
<tr>
<td>Total</td>
<td>23,791</td>
<td>25,040*</td>
</tr>
</tbody>
</table>

- The comparative figure for 2019 has been adjusted to reflect updated data.

We want to further reduce our emissions with various measures. For instance, we use catalysts to reduce nitrogen oxides or feed waste gases back into the production process. One example of this is the production of adipic acid at the Ludwigshafen site in Germany. The nitrous oxide generated in the process is not broken down, but isolated and used in the BASF Verbund as a feedstock for intermediates. This reduces our emissions and simultaneously increases process and resource efficiency.

In addition, our portfolio contains a variety of products to help reduce the emission of air pollutants – from process catalysts for industry applications and plastics additives to catalysts for the automotive industry.

Management of waste and contaminated sites

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

We use the BASF Verbund to efficiently manage our material flows. The by-products of one plant often serve as feedstocks for another plant, avoiding waste. At the Antwerp site in Belgium, for example, we re-use a carboxylate solution from the cyclohexanone plant in the production of soda ash. Other material flows can be used to generate steam, which saves fossil fuels.

We are working intensively on solutions for a circular economy (see page 30). We want to further reduce our demand for primary resources and at the same time, help to reduce waste generation through better recycling, for example, of platinum group metals, or the use of recycled feedstocks such as pyrolysis oil from mixed plastic waste or used tires (see page 119). We are also involved in various initiatives to avoid waste and strengthen the circular economy. For example, as a founding member of the Alliance to End Plastic Waste (AEPW), we cooperate with around 50 other companies along the value chain to put plastic waste to good use and reduce the amount that enters the environment. The AEPW intends to invest up to $1.5 billion in various projects and cooperative ventures to this end, mainly in Asia and Africa (see box on page 138).
### Waste generation in the BASF Group

<table>
<thead>
<tr>
<th>Million metric tons</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total waste generation</td>
<td>2.21</td>
<td>2.34</td>
</tr>
<tr>
<td>Waste recovered</td>
<td>0.96</td>
<td>0.99</td>
</tr>
<tr>
<td>Recycled</td>
<td>0.44</td>
<td>0.45</td>
</tr>
<tr>
<td>Thermally recovered</td>
<td>0.52</td>
<td>0.54</td>
</tr>
<tr>
<td>Waste disposed of</td>
<td>1.25</td>
<td>1.35</td>
</tr>
<tr>
<td>Through incineration</td>
<td>0.74</td>
<td>0.78</td>
</tr>
<tr>
<td>In surface landfills</td>
<td>0.35</td>
<td>0.38</td>
</tr>
<tr>
<td>Other</td>
<td>0.16</td>
<td>0.19</td>
</tr>
</tbody>
</table>

#### Classification of waste for disposal

- **Nonhazardous waste**: 0.36 (2020), 0.43 (2019)
- **Hazardous waste**: 0.89 (2020), 0.92 (2019)
- **Of which transported hazardous waste**: 0.25 (2020), 0.28 (2019)

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We have global standards for managing contaminated sites. A worldwide network of experts ensures these are implemented. We develop remediation solutions that balance 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 standards. Contaminated sites are documented in a database. Ongoing remediation work around the world continued on schedule in 2020 and planning was concluded on future remediation projects.

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**Alliance to End Plastic Waste**

In 2019, we co-founded the Alliance to End Plastic Waste (AEPW) with other companies from along the value chain – from plastics producers and consumer goods manufacturers to waste disposal companies. The AEPW has around 50 members, who together aim to develop solutions that stop plastic waste from entering the environment, especially the ocean. There are four main focus areas: developing infrastructure for waste collection, promoting innovative recycling methods, education and engagement of various stakeholders, and cleanup of areas heavily impacted by plastic waste. BASF supports the AEPW’s goal of establishing a circular economy for plastics with its ChemCycling™ project. BASF is also involved in Alliance initiatives such as cleanup efforts. For instance, almost 300 BASF employees participated in the AEPW’s All Together Global Cleanup campaign in Ludwigshafen, Germany, and Shanghai, China, in September 2020.
Water is of fundamental importance in chemical production. It is used as a coolant, solvent and cleaning agent, to make our products and transport our goods. 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 target for sustainable water management.

### Strategy

- **Using water responsibly with sustainable water management**

  BASF is committed to the United Nations’ Sustainable Development Goals. These cover topics such as the responsible use and sustainable management of water (SDG 6). We have defined global standards and processes in our Responsible Care Management System.

  Sustainable water management has been a central element of our strategy to use water responsibly for many years. We aim to introduce sustainable water management at all relevant production sites. These include our Verbund sites and sites in water stress areas.¹ Our sustainable water management aims to protect water as a resource, continuously improve water use efficiency, and consistently reduce emissions. We consider the quantitative, qualitative and social aspects of water use.

  We advocate the responsible use of water as a resource along the entire value chain. We audit supplier compliance with environmental standards in our regular supplier assessments (see page 113). In addition, we support a wide range of initiatives to promote sustainability in the supply chain (see page 117). Our Responsible Care Management System (see page 121) and global process and transport safety standards (see pages 123 and 129) aim to maintain good water quality and minimize the risk of product spillages into water bodies.

  We offer our customers solutions that help purify water and use it more efficiently while minimizing pollution. These include high-performance plastics to produce ultrafiltration membranes, seeds with higher drought and heat tolerance, or water-saving thin-film processes for metal pretreatment. Together with other companies from along the value chain, we are also involved in global initiatives such as the Alliance to End Plastic Waste (see page 138), the World Plastics Council and Operation Clean Sweep to prevent plastics from entering the environment, especially water bodies.

  We report transparently and comprehensively on water. For instance, we again provided detailed answers to the 2020 water survey from the nonprofit organization CDP. In the final assessment, BASF again achieved the top grade of A and thus Leadership status. CDP evaluates how transparently companies report on their water management activities and how they reduce risks such as water scarcity. The assessment also considers the extent to which product developments – including at the customers of the companies being evaluated – can contribute to sustainable water management.

  We pursue our goal by applying the European Water Stewardship standard, which rests on four principles: sustainable water abstraction, maintaining good water quality, preserving conservation areas, and ensuring continuous improvement processes. In addition, we are a member of the global Alliance for Water Stewardship.

  We identify and implement potential for improvement as part of sustainable water management. For instance, we use wastewater from municipal wastewater treatment plants to reduce our freshwater demand at our sites in Taragona, Spain (since 2013) and Freeport, Texas (since 2019). At the Pontecchio site in Italy, our need for river and groundwater is reduced by the use of rainwater and optimized sludge dewatering, which started up in late 2020. At the Ludwigshafen site in Germany, we have continually optimized cooling water needs over the past few years with technical improvements, most recently in the production of higher carboxylic acids, for example. In addition, the startup of a new recoling plant in 2020 makes the site less dependent on changes in water temperature and water levels on the Rhine. We have also taken numerous measures to secure the supply of raw materials to the site and the transportation of our products by ship on the Rhine River, even in the case of extended periods of low water (see page 129).

¹ We define water stress areas as regions in which more than 40% of available water is used by industry, households and agriculture. Our definition is based on the Water Risk Atlas (Aqueduct 3.0) published by the World Resources Institute. For more information, see wri.org/aqueduct.

² Our water target also continues to take into account the sites that we identified as water stress sites in accordance with Pfister et al. (2008) prior to 2019.
Water balance

- Optimizing demand and efficient use

Our water abstraction totaled 1,728 million cubic meters in 2020 (2019: 1,717). This demand was covered for the most part by freshwater such as rivers and lakes (87% of water abstraction). At some sites, we use alternative sources such as treated municipal wastewater, brackish water or seawater. A small part of the water we use reaches our sites as part of raw materials and steam, or is released in our production processes. We abstract most of the water we need for cooling and production ourselves. In 2020, 5% of our total water demand was covered by third parties.

We predominantly use water for cooling purposes (87% of water abstraction), after which we discharge it back to our supply sources. We reduce our demand for cooling water by recirculating as much of it as possible. To do this, we use recoling plants that allow water to be reused several times. Around 13% of our total water abstraction is used in production plants, for example, for extraction or dissolution processes or for cleaning. Most of this water is discharged back to our supply sources after being treated in BASF or third party plants.

The BASF Group’s water consumption describes the amount of water that is not discharged to a supply source, meaning that it is no longer available to other users. Consumption is mainly attributable to the evaporation of water during closed-circuit cooling. A smaller amount is from the water contained in our products. Water consumption in 2020 amounted to around 63 million cubic meters (2019: 61).

In 2020, around 25% of our production sites were located in water stress areas. These sites accounted for 1% of BASF’s total water abstraction (2019: 1%). This demand was covered for the most part by freshwater (97%). We mainly source water from third parties (73%). Water consumption in water stress areas accounted for around 11% of our total water consumption (2019: 14%) and was primarily attributable to evaporation in cooling processes.

The supply, treatment, transportation and recoling 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. One example of this is the nitric acid Verbund at the Ludwigshafen site in Germany. Various recoling optimization measures not only significantly reduce the use of cooling water there, but also save 12 gigawatt hours of energy and avoid 3,500 metric tons of CO₂ every year.

Emissions to water

- Emissions slightly lower

A total of 1,429 million cubic meters of water were discharged from BASF production sites in 2020 (2019: 1,509), including 166 million cubic meters of wastewater from production. Total wastewater in water stress areas was less than 1%. As cooling water is recirculated as much as possible there, the share of wastewater from production processes is comparatively higher than at other BASF sites.

BASF carefully assesses the impact of wastewater discharge in accordance with the applicable laws and regulations. The responsible local authorities regularly review our analyses and precautions in accordance with the relevant local requirements to prevent contaminants from entering water bodies.

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1 Aqueduct 3.0 was used to identify sites in water stress areas to determine pro rata water abstraction and water consumption.

Our approach is to reduce wastewater volumes and contaminant loads at the source in our production processes, and to reuse wastewater and material flows internally as far as possible. To treat wastewater, we use both central measures in wastewater treatment plants and the selective pretreatment of individual wastewater streams before these are sent to the wastewater treatment plant. Suitable methods are used, depending on the type and degree of contamination – including biological processes, chemical oxidation, membrane technologies, precipitation or adsorption.

In order to avoid unanticipated emissions and the pollution of surface or groundwater, we have water protection concepts for our production sites in place. This is mandatory for all production plants as part of our Responsible Care Management System. 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
Biodiversity describes the variety of life forms on Earth. Animals and plants fulfill a variety of functions and guarantee the ability of their ecosystem to withstand alterations such as climate change. As a chemical company, we depend on ecosystem services like the availability of renewable resources and air, water and soil quality, while also influencing them. Protecting biodiversity is therefore a key element of our commitment to sustainability.

Thanks to responsible procurement practices, the efficient use of raw materials, our product solutions and involvement in numerous initiatives, our business conduct is consistent with the United Nations’ Sustainable Development Goals and we reduce our negative impact on biodiversity. It is currently extremely difficult to measure impacts on biodiversity and thus BASF’s impacts in full. At the same time, we help to measure significant impacts on land use in individual steps of the value chain, for example with our Value to Society method. We also initiated a pilot project in 2020 to improve methodological measurement of the impacts of individual product applications on biodiversity.

Our responsibility to our supply chains

The business activities of our raw materials suppliers often involve land use and the associated impact on biodiversity, whether it is in natural gas and crude oil production, mineral extraction or cultivation of crops such as oil palms and castor-oil plants. Our expectations with regard to environmental, labor and social standards in the supply chain are laid down in the Supplier Code of Conduct (see page 113).

We published our Position on Forest Protection in June 2020. In it, we commit to the preservation of areas of High Conservation Value, High Carbon Stock forest areas and peatlands when procuring renewable raw materials. Our aim is to prevent these areas from being developed for intensive economic use. Furthermore, we want any land use development activity to respect the rights of indigenous and local communities. We are working with partners to increase supply chain sustainability, for instance with the Roundtable on Sustainable Palm Oil (RSPO) in our supply chain for palm-based raw materials (see page 117).

BASF procures a variety of renewable raw materials. Particularly palm and palm kernel oil, soy oil and its derivatives as well as lignosulphonates, which are extracted from wood, have been determined to have a high deforestation risk. Based on purchasing volume, palm oil products are the most relevant renewable raw materials for BASF. To achieve greater sustainability in this supply chain, a detailed Palm Commitment went into effect in 2011 and was extended in 2015. It was put into practice through our Palm Sourcing Policy. Furthermore, we are involved in a range of projects in other supply chains promoting responsible use of natural resources and biodiversity (see page 118). BASF was rated for the first time in 2020 in the nonprofit organization CDP’s forest assessment (grade: A–). It evaluates companies’ management of environmental risks and opportunities. It is based on detailed insights into our palm value chain and the impact of our activities on ecosystems and habitats.

In cooperation with partners, we are also developing innovative solutions to reduce pressure for economic use of forests. For example, the Nutrition & Health division and Isobionics® launched Isobionics® Santalol in 2020, which is a biotechnologically produced fragrance and a convincing alternative to natural sandalwood oil. This oil is extracted from the wood and roots of the sandalwood tree, which is on the Red List of the International Union for Conservation of Nature (IUCN) because it is highly endangered by overexploitation. Our newly developed fragrance addresses customer demand for reliability in the supply of raw materials while conserving natural resources.

Our responsibility to our sites and our production

Preservation of biodiversity is also taken into consideration in the management of our sites. We respect natural resources at all our production sites and have committed to the following measures: We operate our facilities in a responsible manner and minimize negative effects on the environment, including forests, by keeping air, water and soil emissions as low as possible and reducing and avoiding waste (see page 137). Moreover, we conduct systematic assessments of sustainability aspects when making decisions about investments in the construction of new sites or expansion of existing ones, including the potential impact on forests and biodiversity. Our water management (see page 139) and our involvement in organizations such as the Alliance to End Plastic Waste (AEPW) (see page 138) contribute to the preservation of biodiversity in bodies of water.

Our management of our product impact

We want to ensure that our products meet our customers’ standards in quality and, through appropriate use, pose no risk to humans, animals or the environment. Our commitment to the objectives set forth by the Responsible Care® charter of the International Council of Chemical Associations (ICCA) obligates us to continuously minimize the negative effects of our products on the environment, health and safety and to optimize our products on an ongoing basis. For example, we evaluate our products and solutions in crop protection and seeds throughout the entire research, development and registration process. After they have been approved for the market, we continue assessing them regularly for potential risks and impact to the ecosystems in which they are used. We have initiated various projects and offer training to prevent inappropriate application of our products (see page 126).
Biodiversity

The “Lark’s Bread” project to foster biodiversity

With this project, BASF is showing in Germany that striking a balance between productive agriculture and biodiversity is possible. In a pilot project with a local bakery chain and a mill, four farmers from the BASF FarmNetwork Sustainability have created “lark windows” on a total of 40 hectares of winter wheat fields. These “lark windows” are open spaces in fields with an area of about 20 m², which skylarks use as “runways” when they brood in the fields and search for food. The harvested wheat is processed into “lark’s bread” and sold at a markup that compensates farmers for their efforts and yield loss as well as supports further biodiversity measures.

The BASF FarmNetwork Sustainability was established in 2013 with the goal of developing feasible measures to increase biodiversity across intensively farmed land. The network is composed of farms in Europe, including in Germany, the United Kingdom, France, Italy and Poland. Independent external experts on nature conservation and environmental protection assess the development of biodiversity at some of these farms.

The Mata Viva® Initiative in Brazil is a collaboration between BASF and the Fundação Espaço ECO® organization as well as partners from many facets of society. It was established in 1984 to preserve water quality and soil and create a natural habitat for indigenous animal and plant species. To date, a total of 730 hectares of land have been reforested and 1.2 million seedlings have been planted. A program started in 2020 restores forests in the Mata do Barreiro Rico green reserve. The reserve is one of the last sanctuaries of the southern muriqui monkey (Brachyteles arachnoides), which is classified by the IUCN as critically endangered.

Our biodiversity initiatives

Engaging in an ongoing dialog with a variety of stakeholders is of utmost importance to BASF. For this reason, we will continue to pursue an exchange with partners in the value chain, in government and in civil society to preserve the natural habitats of plants and wild animals and thus play our part in protecting biodiversity. We work with a number of organizations including the Roundtable on Sustainable Palm Oil (RSPO), the Sustainable Palm Oil Forum, the Brazilian Coalition on Climate, Forests and Agriculture and the High Carbon Stock Approach Steering Group. We seek to collaborate with additional relevant stakeholders and organizations to raise and increase awareness and drive the necessary market transformation to make an impact on the ground. To promote biodiversity, we are pursuing various initiatives such as the BASF FarmNetwork Sustainability, the Mata Viva® Initiative and the “Lark’s Bread” project (see box on the right).

All types of land development, such as agriculture and forestry, play a role in changing biodiversity. Activities such as tillage, drainage, fertilization and the use of crop protection products can affect flora and fauna by influencing their food sources.

We strengthened our commitment to sustainable agriculture in 2020. We focus on four areas to help farmers to find the right balance: climate-smart farming, sustainable solutions, digital farming and smart stewardship (see page 102). In this context, we work with farmers to create balanced agricultural systems which enable productive and efficient farming of high-quality food products and at the same time promote biodiversity in the field. For example, we advise them on soil cultivation and look for suitable ways to improve biodiversity in farmlands. Our many years of experience in sustainability measurement and evaluation in agriculture are particularly useful here. Our AgBalance® method and the biodiversity calculator, which has been available since 2020, enable a scientifically sound assessment of the impact of agricultural practices on biodiversity.

Based on these assessments, we issue recommendations for measures such as planting flower strips or establishing nesting places to benefit pollinators, like wild bees, and farmland birds. Our modern seed solutions also enable better yield on existing farmlands and thus help protect natural habitats.

For more information on our responsible management of resources, see page 116
For more information on product stewardship, see page 126
For more information on our commitment to biodiversity, see basf.com/biodiversity
For more information on our position on forest protection, see basf.com/forestprotection
Employees

Our employees make a significant contribution to BASF’s 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.

110,302
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. We are 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. Our corporate strategy promotes a working atmosphere based on mutual trust, in which employees are given the space to optimally develop their individual talents and potential. This positions us to meet the challenges of an increasingly rapidly changing environment, demographic change and the digital workplace. 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. 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

As of December 31, 2020, the number of employees decreased to 110,302 employees compared with 117,628 employees as of December 31, 2019. The decrease was due primarily to the sale of the construction chemicals business, which affected around 7,500 employees. An offsetting factor was the acquisition of Solvay’s polyamide business due to which around 1,200 employees joined the BASF Group including the employees of the Butachimie SNC and Alsachimie S.A.S. joint operations, both in Chalampé, France, which were counted on a pro rata basis. We employed 3,120 apprentices1 (2019: 3,161). 2,128 employees were on temporary contracts (of which 44.0% were women).

BASF Group employees by region

(Total: 110,302, of which 25.5% women, as of December 31, 2020)

<table>
<thead>
<tr>
<th>Region</th>
<th>Employees</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>16,948</td>
<td>15.4%</td>
</tr>
<tr>
<td>Europe</td>
<td>68,849</td>
<td>62.4%</td>
</tr>
<tr>
<td>South America, Asia, Africa, Middle East</td>
<td>6,752</td>
<td>6.1%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>17,753</td>
<td>16.1%</td>
</tr>
</tbody>
</table>

1 Of which Germany 51,961 (47.1%) 24.0% ↑ 76.0%
Of which BASF SE 34,484 (31.3%) 21.7% ↑ 78.3%

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

- Own employee engagement target met
- Engagement index of 82%

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. Global employee surveys and pulse checks are 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, the Supervisory Board and stakeholders. We have performed regular global employee surveys since 2008. We aim to keep the employee engagement determined by these surveys at a high level and increase it even further as far as possible. As part of the BASF strategy, we therefore set ourselves the following goal in 2018: More than 80% of our employees feel that at BASF, they can thrive and perform at their best. We regularly calculate the employee engagement level as an index score based on five questions on set topics in our employee surveys. Overall, more than 72,000 employees worldwide participated in this year’s survey, representing 66% of survey recipients.¹

The 2020 survey revealed an engagement index of 82% (2019: 79%). This result reinforces our existing approach taken by our corporate strategy, even in a difficult environment. It also shows that we can rely on our engaged employees, even in a challenging year dominated by the coronavirus pandemic.

What we expect from our leaders

- Leaders as role models
- CORE Leadership Values as the basis for our leadership culture

Our leaders and their teams should make a sustainable contribution to BASF’s success. This is why we promote high-quality leadership and measure its impact. We understand impactful leadership as leaders that serve as role models by having a positive influence on the engagement and development of their employees, and developing and implementing business strategies in line with our corporate values. These expectations are part of the standard global nomination criteria for leadership positions. Our leadership culture is based on BASF’s corporate values: creative, open, responsible and entrepreneurial – CORE. Our specific expectations of leaders’ conduct are derived from these: the CORE Leadership Values (see box on the right).

We offer our leaders a wide variety of learning and development opportunities for each phase of their career, as well as various formats that enable them to learn from one another and external experts. Global, regional and local offerings are optimally coordinated. We aim to develop leaders who lead their teams with optimism, empathy and trust, and in this way, create a competitive advantage for BASF. Regular feedback plays an important role in the development of leaders. This is why we implemented the comprehensive FEEDback&forward program for all leaders Group-wide in 2020, in which employees provide regular feedback on their managers’ leadership skills. The questionnaire focuses on behaviors like empathy or the ability to make difficult decisions and approach change positively. Employees can also report back to their leaders which leadership behaviors they want in the future. In this way, FEEDback&forward promotes regular and open dialog between employees and leaders, and encourages them to reflect on themselves and their own skills. This enables them to drive forward change together with their teams.

CORE Leadership Values

The CORE Leadership Values serve as the guiding principles for all leaders and set out BASF’s expectations of leadership behavior. We have derived specific descriptions of desired leadership skills from each individual CORE corporate value.

Excellent leadership is crucial to our customer focus, growth, value creation, employee performance, sustainable goals and new ways of working. The expectations surrounding specific leadership behaviors are aligned with BASF’s strategic goals and reflect our company’s leadership vision.

Regular training and company-wide dialog on best practices in implementing the CORE Leadership Values in all relevant processes across the company – such as the recruitment and development of talented employees – are important tools to ensure a consistent global leadership culture.

¹ Scope of employees surveyed goes beyond the scope of consolidation presented on page 6. However, there are exceptions for companies that represent joint ventures and joint operations, as well as companies held for sale.
To optimally support our leaders – including during the challenging times of the coronavirus pandemic – existing leadership development tools were converted to virtual formats and our internal toolbox was expanded to include new elements such as a CORE leadership podcast or a website with information on how to handle challenges during the pandemic.

**Inclusion of diversity**

- Fostering diversity is part of our company culture
- Progress made in increasing the proportion of women in leadership positions

The global character of our markets translates into different customer requirements. We want to reflect this diversity among our employees, too, because it enables them to better meet our customers’ needs. 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. By valuing and promoting employee diversity, we boost our teams’ performance and power of innovation, and increase creativity, motivation and employees’ 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 with various, flexible offerings. For instance, we have provided a toolbox with a wide range of content to enable a change of perspective and on promoting diversity and inclusion. A new podcast series from leaders shows the importance of appreciative, fair and inclusive leadership.

Integrating different perspectives is very important to BASF. There are a large number of Employee Resource Groups around the world dedicated to different aspects of diversity.

In North America, conversational formats on the inclusion of diversity were developed for employees and leaders. These led to the creation of further action areas, such as promoting talent and training on intercultural communication and leadership, with the aim of further increasing the inclusion of diversity. BASF took a stand against racism with various internal and external activities in 2020.

BASF Group employee age structure

(Total: 110,302, of which 25.5% women, as of December 31, 2020)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to and including 25 years</td>
<td>7,635</td>
<td>74.6%</td>
</tr>
<tr>
<td>26–39 years</td>
<td>37,715</td>
<td>70.0%</td>
</tr>
<tr>
<td>40–54 years</td>
<td>43,322</td>
<td>74.5%</td>
</tr>
<tr>
<td>55 years and up</td>
<td>21,630</td>
<td>82.4%</td>
</tr>
</tbody>
</table>

We also promote diversity in leadership development. Since 2015, BASF has set itself global quantitative goals for increasing the percentage of women in leadership positions.

After achieving our original target for women in leadership positions ahead of schedule, BASF set a new, more ambitious target in 2020 to further strengthen diversity. By 2030, we aim to increase the proportion of women in leadership positions to 30%. We have made important progress toward this goal. In the BASF Group, the global proportion of female leaders with disciplinary responsibility was 24.3% at the end of 2020 (2019: 23.0%). We intend to employ various measures to reach our ambitious target.

**2030 target**

Proportion of women in leadership positions with disciplinary responsibility

30%
Another step toward digitalization is the jobsharing app introduced in 2020, which leaders and employees that wish to share a position can use to network with each other. Job sharing is a future-ready working model that offers benefits for both sides and makes it easier for employees to balance their personal and professional lives.

BASF also renewed its commitment to promoting gender equality by endorsing the United Nations’ Women’s Empowerment Principles (WEPs) in 2020. The WEPs are seven principles providing guidance to business on how to promote gender equality and women’s empowerment in the workplace, the labor market and the community.

In the global Business for Inclusive Growth (B4IG) initiative, which we joined in 2019, we campaign together with other companies alongside the G7 and the OECD for inclusive growth, greater gender equality, and the promotion of diversity and inclusion in business. We are also involved in other external initiatives to promote inclusion of diversity at work, such as the Chefsache initiative and the European Round Table.

Leaders and professionals in the BASF Group

<table>
<thead>
<tr>
<th></th>
<th>December 31, 2020</th>
<th>Of which women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Senior) executives²</td>
<td>8,881</td>
<td>24.3</td>
</tr>
<tr>
<td>Professionals²</td>
<td>38,484</td>
<td>31.8</td>
</tr>
</tbody>
</table>

² Employees with disciplinary leadership responsibilities

² Specialists without disciplinary leadership responsibilities

For more information on health protection, see page 124

For more information on diversity in the Board of Executive Directors and the Supervisory Board, see page 169 onward

For more information, see basf.com/diversity

Competition for talent

Positioning as an attractive employer

Addressing specific target groups, including during the coronavirus pandemic

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 qualified employees and leaders. This is why we are constantly working on measures to increase BASF’s appeal in the global labor markets. Target group-specific campaigns focus on sustainability, digital ways of working and innovation for the future – reflecting our strategic action areas and key labor market trends.

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 appropriately address different target groups.

In light of the coronavirus pandemic, we used digital solutions for our talent search activities in 2020. For instance, in order to still be present at career fairs, we participated virtually. As a result, we were able to continue to attract and recruit talented employees. We also offered virtual tours of the Ludwigshafen site for universities in Germany. In addition, we consistently take part in specific career events to directly reach and attract talented female recruits in the natural sciences.

The talent program for external students and former interns was redesigned and expanded to include targeted retention measures. For example, special online events on different career opportunities and an exclusive journal help to maintain contact with talented students who impressed us with their outstanding personal qualities and skills. Mentors at BASF also keep in contact until they have completed their degree and can be recruited.

To combat the shortage of skilled workers in production and technical areas, due among other factors to demographic-related declines in Ludwigshafen, Germany, we have strengthened our social media presence, for example, to alert qualified specialists to new career prospects at BASF.

We once again achieved high scores in a number of employer rankings in 2020. For example, in a study conducted by Universum, engineering and IT students ranked BASF as the 51st most attractive employer in the world (2019: 47th). In North America, DiversityInc named BASF as one of the top 50 companies for diversity in recruiting for the eighth consecutive year. In Asia, Top Employer recognized BASF China as one of the best employers for the eleventh time in succession. In South America, BASF was recognized by Valor Econômico newspaper as one of the employers with the best personnel management in Brazil.

The BASF Group hired 6,340 new employees in 2020. The percentage of employees who resigned during their first three years of employment – the early turnover rate – was 1.0% worldwide in 2020. This turnover rate was 0.7% in Europe, 1.5% in North America, 1.8% in Asia Pacific and 1.8% in South America, Africa, Middle East. Our early turnover rate is therefore at a desirable low level.
BASF Group new hires in 2020

<table>
<thead>
<tr>
<th>Region</th>
<th>December 31, 2020</th>
<th>Of which women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>3,163</td>
<td>30.0</td>
</tr>
<tr>
<td>North America</td>
<td>1,396</td>
<td>33.0</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>1,234</td>
<td>28.1</td>
</tr>
<tr>
<td>South America, Africa, Middle East</td>
<td>544</td>
<td>38.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,340</strong></td>
<td><strong>31.0</strong></td>
</tr>
</tbody>
</table>

As of December 31, 2020, the BASF Group was training 3,120 people in 15 countries and around 50 occupations. We spent a total of around €113 million on vocational training in 2020. For more information, see basf.com/apprenticeship

Learning and development

- **Lifelong 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 ideas 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.

Digital learning formats play an important role in our development offerings. Even before the coronavirus pandemic, training for leaders and employees was updated to meet the challenges of the digital transformation and modern working life with appropriate learning formats and content. For example, the Digitalization & Me platform was established as a central resource where employees and leaders can find a wide range of online training, learning paths on LinkedIn Learning, or virtual continuous professional development events. Both target groups can also hold joint workshops in an avatar-based 3D working and learning environment.

We enable our employees to take responsibility for their own professional development within the company with digital and novel offerings. To support multidisciplinary teams in the development of products, services or business models, workshops on design thinking empower participants to find creative and innovative solutions to complex problems. This fosters an agile learning and working culture, which will ultimately also help us to master the digital transformation.

To harness the opportunities of the digital transformation for BASF, the #liveitleadit initiative for leaders focused on agility in 2020. Over 3,000 participants discussed methods, best practices and insights into agile working and digital leadership in monthly digital events.

In addition, more and more academies in the divisions and service 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.

- **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 level.

We want our employees to contribute to the company’s long-term success. This is why the compensation granted to the 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. We use 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. 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 2020, for example, around 27,600 employees worldwide (2019: around 25,400) participated in the “plus” share program.

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1 In calculating ROCE, adjustments are made for negative and positive special items resulting from acquisitions and divestitures (for example, integration costs in connection with acquisitions and gains or losses from the divestiture of businesses) when these exceed a corridor of +/-5% 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.
BASF offers senior executives\(^1\) the opportunity to participate in a share price-based compensation program, the long-term incentive (LTI) program. The BASF Group’s share price-based compensation program (BASF Option Program, BOP), which has existed since 1999, was offered for the last time in 2020. Around 87% of the people eligible to participate in the program around the world did so, investing up to 30% of their actual variable compensation (for the 2019 business year) in BASF shares. From 2020 onward, the previous LTI program for senior executives will be replaced by a new LTI (Strive!) in the form of a performance share plan. The new, four-year program takes into account the development of the total shareholder return and incentivizes the achievement of strategic growth, profitability and sustainability targets. To take part in this new LTI, participants must hold BASF shares, the amount of which is based on their individual fixed compensation. In 2020, around 94% of the people eligible to participate in the new LTI around the world did so, investing between 30% and 70% of their fixed annual compensation in BASF shares.

\(^{1}\) For more information, see the Notes to the Consolidated Financial Statements from page 307 onward

### Personnel expenses

The BASF Group’s expenses for wages and salaries, social security contributions and pensions and assistance in 2020 totaled €10,576 million (2019: €10,924 million). This amount included proportional personnel expenses for 2020 from the disposal group for the construction chemicals business in the amount of €291 million. In 2019, personnel expenses from the disposal groups for the construction chemicals business and proportionally for the oil and gas business totaled €557 million. The decrease in personnel expenses was primarily due to lower bonus provisions and the lower average number of employees which resulted, in particular, from the divestiture of the construction chemicals business. A higher wage and salary level as well as higher pension expenses because of increased service costs had an offsetting effect.

<table>
<thead>
<tr>
<th>BASF Group personnel expenses</th>
<th>2020</th>
<th>2019</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages and salaries</td>
<td>8,416</td>
<td>8,825</td>
<td>-4.6%</td>
</tr>
<tr>
<td>Social security contributions and assistance expenses</td>
<td>1,424</td>
<td>1,545</td>
<td>-7.8%</td>
</tr>
<tr>
<td>Pension expenses</td>
<td>736</td>
<td>554</td>
<td>32.9%</td>
</tr>
<tr>
<td>Total personnel expenses</td>
<td>10,576</td>
<td>10,924</td>
<td>-3.2%</td>
</tr>
</tbody>
</table>

\(^{2}\) The term “senior executives” refers to leadership levels 1 to 4, whereby level 1 denotes the Board of Executive Directors. In addition, individual employees can attain senior executive status by virtue of special expertise.

### Balancing personal and professional life

- **Wide range of offerings for different phases of life**
- **Flexible working models support employees during the coronavirus pandemic**

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 qualified personnel. To achieve this, we have a wide range of offerings aimed at employees in different phases of life that accommodate the growing demand for flexibility in when and where they work. BASF helps employees to adapt working hours and location to their personal circumstances with a wide range of established options, including flexible working hours, part-time employment and remote working. We are constantly working to expand these options and increasingly support the effective use of digital solutions here.

Our flexible tools proved extremely helpful during the coronavirus pandemic. They help our employees to master the increased challenges around work and personal life during the pandemic. One of the tools that increases flexibility is moving larger employee events that were previously held in-person to virtual formats and recording these. We have developed a global policy and framework for the future of work to integrate the positive experiences from the surge in remote working into our working culture. The aim is to further promote and facilitate flexible working models for interested employees.
Regional initiatives specifically address the needs of our employees at a local level. For example, our startup 1000 Satellites continued to expand the number of flexible co-working spaces in the Rhine-Neckar region in Germany and tested these in pilot projects.

Our Work-Life Management employee center in Ludwigshafen, Germany, (LuMit) offers a number of services under one roof: childcare, fitness and health, and social counseling and coaching offered by BASF Stiftung. We also provide employee assistance programs at other sites in Germany and around the world to help employees overcome difficult life situations and maintain and restore their employability.

[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. In 2020, this happened in connection with the transformation of the newly created Global Business Services unit, for example. Our actions are aligned with the respective legal regulations and the agreements reached, as well as operational considerations. During the coronavirus pandemic, we developed solutions together with employee representatives to continue our trust-based cooperation, despite the necessary pandemic-related restrictions. This enabled us to sign a new site agreement with the Works Council of BASF SE for the Ludwigshafen site in Germany in May 2020, which contains a clause that excludes forced redundancies until 2025.

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. The BASF Europa Betriebsrat (European Works Council) addresses cross-border matters in Europe. In South America, we foster dialog with the Diálogo Social.

For more information, see basf.com/employeerepresentation

[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 applies Group-wide. This guideline makes concrete 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 regularly monitor changes to the national law of all the countries in which BASF operates and evaluate our adherence to international labor and social standards. If the national law contains no or lower requirements, action 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.
We monitor our voluntary commitment to international labor and social standards as part of our management process. As before, individual elements of the guideline are also reviewed as part of internal control processes such as Responsible Care audits at BASF Group companies. In addition to these quality assurance measures, compliance with international labor and social standards is an integral part of the standard questionnaire in the compliance management audit conducted by BASF’s Corporate Audit department.

For more information on global standards, see page 31
For more information on our responsibility for human rights, see page 111
For more information on compliance, see page 177 onward
For more information on labor and social standards, see basf.com/labor_social_standards