

Covestro Group at a Glance

1. Group Structure and Business Model

Organization



See "Scope of consolidation and investments" section in note 5.1 of the Notes to the Consolidated Financial Statements

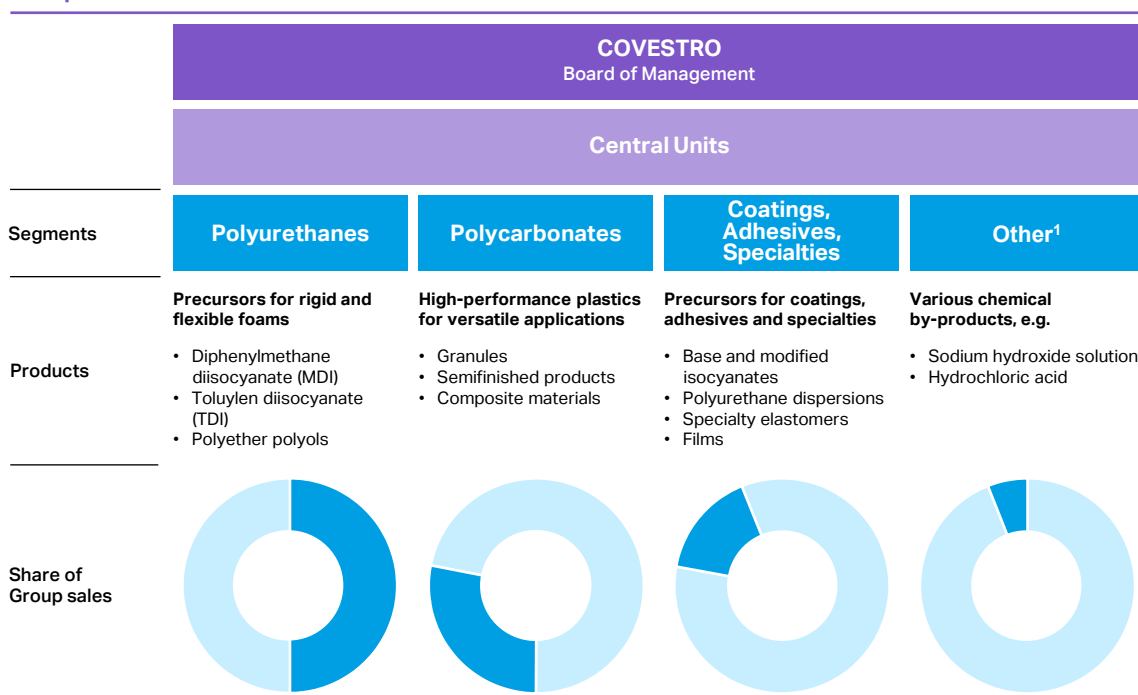


See section 22 "Declaration on Corporate Governance"

Covestro is one of the leading global suppliers of high-tech polymer materials and application solutions developed for these materials. Covestro AG, the parent company of the Covestro Group, is headquartered in Leverkusen (Germany). It is listed on the stock exchange in Germany and has been included in the leading German index DAX since March 19, 2018. In line with its product portfolio, Covestro is divided into three operational reporting segments: Polyurethanes (PUR), Polycarbonates (PCS), and Coatings, Adhesives, Specialties (CAS). The administrative functions are consolidated within the central units. As of December 31, 2018, the Covestro Group comprised 49 consolidated companies in 24 countries in addition to Covestro AG and employed around 16,770 employees².

The Board of Management of Covestro AG manages the operational businesses and defines and monitors corporate targets. Dr. Markus Steilemann became the Chief Executive Officer of Covestro in June 2018, succeeding Patrick Thomas in this position. In addition to this role, he remains responsible for innovation, marketing, and sales. Dr. Thomas Toepfer has been Chief Financial Officer since April 2018. Chief Technology Officer Dr. Klaus Schäfer is responsible for production and technology on the Board of Management and for overseeing all production sites. He also carried out the role of Labor Director through December 31, 2018. Dr. Thomas Toepfer assumed the role of Labor Director as of January 1, 2019. The twelve-member Supervisory Board advises and oversees the Board of Management. In accordance with the German Codetermination Act, half the members of the Supervisory Board are elected by the stockholders and half by the company's employees. Dr. Richard Pott holds the office of Chair of the Supervisory Board.

Group Structure



¹ Business activities that cannot be assigned to the Polyurethanes, Polycarbonates, or Coatings, Adhesives, Specialties segments. These include, for instance, the marketing of by-products of chlorine production and use.

² The number of employees on either permanent or temporary contracts refers to full-time equivalents (FTE). Part-time employees are included on a pro-rated basis in line with their contractual working hours.

Business model

We produce precursors for polyurethane foams and the high-performance plastic polycarbonate as well as precursors for coatings, adhesives, sealants and specialty products, including specialty films. Other precursors such as chlorine and by-products like styrene are also part of Covestro's range of products.

The company's materials are used in many areas of modern life – the array of products ranges from insulation for refrigerators and entire buildings through laptop and cell phone cases to scratch-resistant and fast-drying vehicle coatings and film coverings for personal identification cards. Covestro therefore covers a wide variety of sectors. The company's main customers are from the automotive, construction, wood processing and furniture industries, and from the electrical and electronics industries. The products are also used in sectors such as sports and leisure, cosmetics and health, as well as in the chemical industry itself.

Going forward, Covestro aims to position the company even more broadly, thus further reducing the product range's exposure to cyclical fluctuations. Covestro's focus in this connection is on innovation and sustainability. To this end, we closely monitor the developments in our sales and consumer markets and support the growth of our customers. Together with customers as well as with business and scientific partners, Covestro works continuously to further advance products, technologies and application solutions.

Global megatrends play a considerable role in this process: progressing climate change, increasing mobility, a growing global population and rising urbanization are changing the lives of billions of people. Consequently, the polymer industry will have to change. Businesses such as Covestro are facing new tasks and require innovative solutions to handle them. The focus is primarily on the topics of "Renewable energy," "Energy-efficient transportation," and "Sustainable and affordable living."

Covestro's aim is to pave the way and support these trends with its materials. By replacing traditional materials with durable, light, environmentally-compatible and cost-effective materials, Covestro contributes to lightweight construction in the automotive industry, increases the energy efficiency of living spaces through the use of new insulating materials and improves the shelf-life of food through improvements in insulation along the entire refrigeration chain.

Segments

Polyurethanes

In the PUR segment, Covestro primarily develops, produces and markets chemical precursors for the manufacture of polyurethane foams. These precursors are toluene diisocyanate (TDI), diphenylmethane diisocyanate (MDI) and polyether polyols. Flexible polyurethane foam is used in products such as mattresses, upholstered furniture and car seats, thus making day-to-day life more comfortable. Rigid polyurethane foam is used mainly to efficiently insulate buildings and refrigeration appliances. In doing so, it contributes to reducing energy consumption. In 2018 Covestro was among the top suppliers in the global polyurethane industry in 2018.

Polycarbonates

In 2018, Covestro was also one of the leading global suppliers of polycarbonates. In the PCS segment, Covestro not only produces and distributes this high-performance plastic but also works to continually improve it. Polycarbonates are extraordinarily light, transparent, unbreakable and moldable. Available as granules, composite materials and semifinished products, manufacturers use this versatile material in a wide variety of products such as vehicles (e.g. passenger compartment and vehicle lighting), buildings (e.g. roof structures), electrical and electronic devices (e.g. cords and laptop cases), and for medical equipment.

Coatings, Adhesives, Specialties

In the CAS segment, Covestro was once again among the leading global suppliers in 2018. The focus hereby is on both aliphatic and aromatic isocyanates and their derivatives as well as polyurethane dispersions. These are required for the production of coatings, adhesives sealants, and specialty products. The latter comprise specialty elastomers, high-quality films and precursors for cosmetics, textiles and medical products. These materials serve to protect, bond, seal or functionalize a wide variety of surfaces. The main areas of application are automotive and transportation, infrastructure and construction, wood processing and furniture.

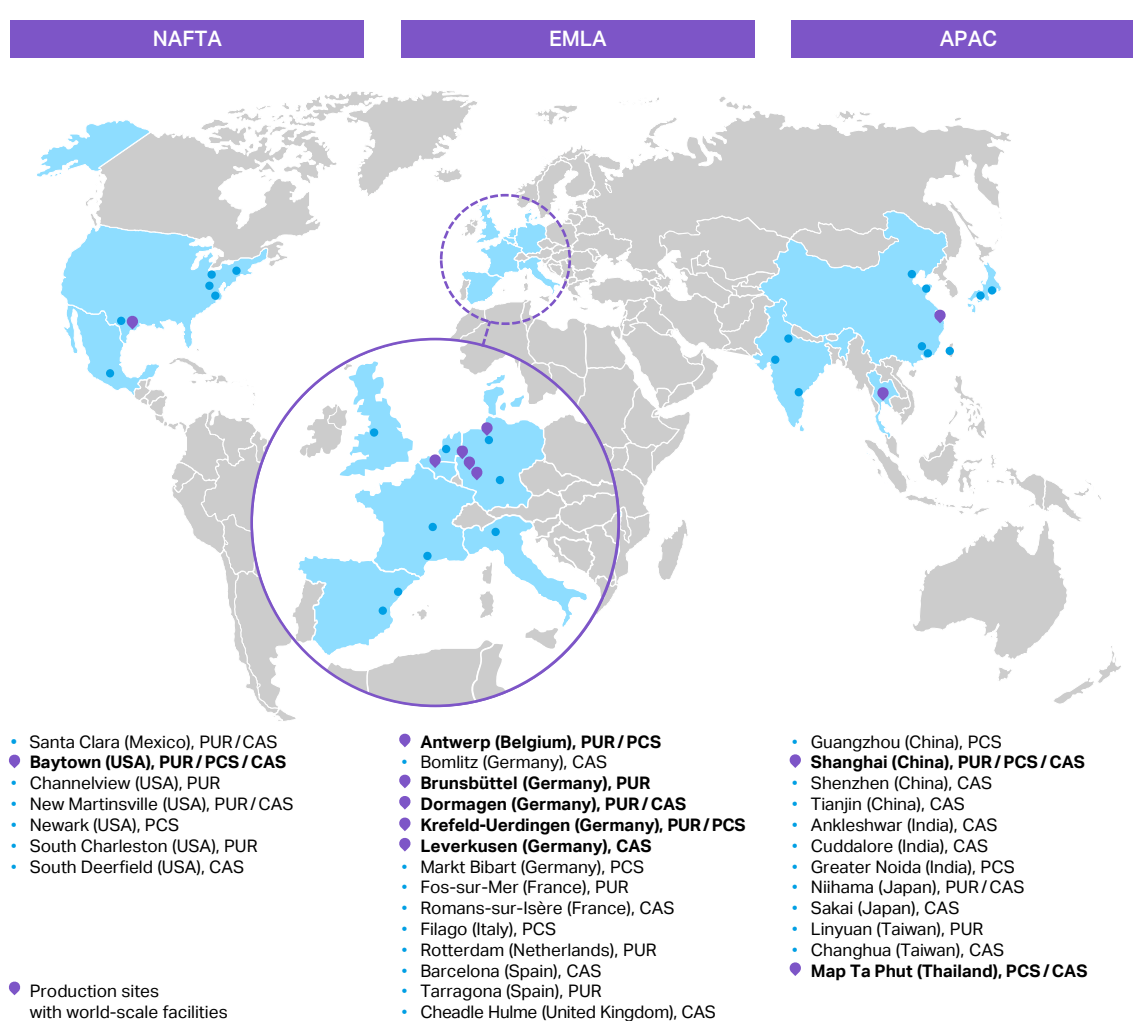
Production sites

Covestro operates production facilities throughout the world for the different product groups. In terms of our production processes, the plant structure is characterized by a backward integration for key raw materials, such as chlorine and propylene oxide, thus ensuring optimal value creation. In addition, Covestro has installed comprehensive measures to secure and steadily improve performance in the fields of safety, costs and plant availability.

Covestro has 33 production sites located in Europe, America and Asia, eight of which have world-scale facilities. The latter are large-capacity production facilities that serve in particular to ensure that customers around the world are supplied reliably and efficiently. We operate additional plants in selected countries to manufacture polyurethane precursors and products of the Coatings, Adhesives, Specialties segment. Moreover, we operate production plants in selected countries where we compound polycarbonate resins to meet specific customer requirements.

The following table shows Covestro's geographical presence and the 33 production sites.

Covestro Production Sites¹



¹ Excluding sites of PCS sheet business and PUR system business



See note 14
"Property, Plant and
Equipment" in the
Notes to the Consol-
idated Financial
Statements

We invest continuously in our global production network in order to maintain our production facilities and their infrastructure, to optimize manufacturing processes and to expand capacities in line with market developments. To do so, Covestro relies on advanced and environmentally friendly production processes and continually optimizes its technologies. As part of the Group's strategy, Covestro conducts a program under the name OSI2020 for the digitalization of technical, operational and maintenance activities.

Procurement market

Procurement provides all areas of the company around the world with goods and services in a timely manner and at suitable market conditions. In doing so, it ensures the adherence of our Group's high quality standards. Furthermore, Procurement makes sure that Covestro's ethical and ecological principles are upheld. The principles of our procurement policy are set forth in a directive that is binding on all employees throughout the Covestro Group.

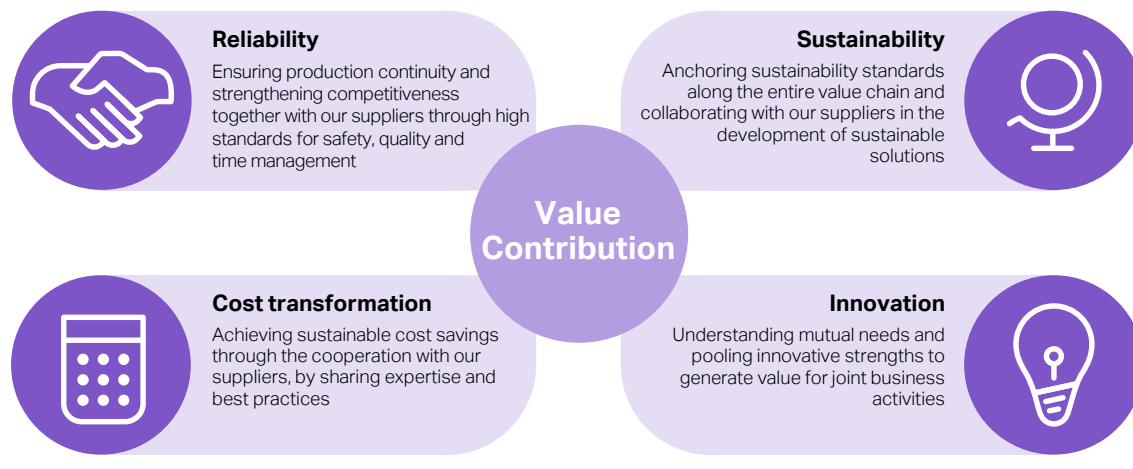
In 2018, goods and services were procured from some 15,500 suppliers (previous year: some 15,400) in 71 countries (previous year: 72) for approximately €10.1 billion (previous year: €9.3 billion). Distribution of purchasing volumes was balanced across the regions.

Procurement at Covestro is centrally steered and managed by the Procurement unit. The objective is to generate a competitive advantage for Covestro and make a decisive contribution to the overall value. In doing so, Covestro is guided by four strategic principles: reliability, sustainability, cost transformation and innovation.



See section 6
"Sustainability in
Supplier Management"

Strategic principles in Procurement



The main precursors for our products are petrochemical substances such as benzene, toluene, propylene/propylene oxide, phenol and acetone – which collectively account for some 40% of our procurement spend. In addition, the operation of our production facilities requires large amounts of energy, that we primarily procure from external sources and in the form of electricity and steam. We endeavor to procure critical raw materials from within the Group or through joint ventures in order to reduce the dependency on external supply sources. To name just two examples: Covestro produces chlorine in-house and procures propylene oxide through a joint venture. We regularly monitor the sustainability and quality of our suppliers and ensure that they comply with internal and external standards.

Distribution and logistics

We are committed to supplying our customers reliably. We understand this to mean that the right product arrives at the right place at the right time and in the agreed upon quality without requiring subsequent improvements. To achieve this goal, our distribution maintains close contact with our customers and supports the operational business. In addition, it advises our customers on how to make the best use of our range of e-commerce services such as the web shop and online trading platform, serves as a point of contact for complaints and endeavors to acquire follow-up orders. In this way, distribution is a key contributor to the satisfaction of our customers and their loyalty to Covestro. Distribution is also responsible for new business.

Covestro relies on a regional distribution and marketing structure for its distribution activities. Each operational reporting segment distributes and markets its own products through its own distribution organization and through trading houses and local distributors. Major customers with global operations are an exception to this. These are serviced directly by our key account managers. Chemical by-products such as sodium hydroxide solution are marketed primarily outside of the operational reporting segments. Certain by-products such as styrene are also marketed within the operational reporting segments.

Three regional Supply Chain Centers for the EMLA, NAFTA and APAC regions provide assistance to the offices in supporting our customers and processing customer orders – from order acceptance through shipment planning, to invoicing and complaint acceptance. This organization enables us to process orders particularly smoothly and swiftly. We make use of channels such as e-commerce platforms for handling orders. Our customers can place orders and check the status of their orders at any time through the Order@Covestro online shop.

The transportation of our products to customers is handled by logistics service providers that are selected and evaluated according to stringent safety, environmental, and quality criteria. Alongside the protection of people and the environment, delivery reliability is particularly important. The preferred mode of transportation is rail or inter-modal – in other words using a combination of different modes of transportation. When selecting the mode of transportation, we also consider resource efficiency and seek to reduce associated CO₂ emissions. Customers are supplied from close-to-production warehouses, wherever permitted by transportation times and delivery reliability. In the case of longer distances and according to the reliability of the mode of transport, goods are temporarily stored in regional distribution centers and then dispatched with shorter delivery times.

In order to ensure a high level of customer satisfaction, our foremost quality target is avoiding errors in all of our processes. Customer satisfaction is regularly gauged and analyzed worldwide in a global management system. In doing so, we take into account customer satisfaction analyses and supplier assessments. Furthermore, we request feedback from our customers from which we derive corrective and preventive measures for the purpose of further increasing quality and customer satisfaction and lowering the error rate and the incidence of complaints. In 2017, Covestro recorded 6.88 complaints for every 1,000 deliveries. In the year under review, that number fell to only 6.72 complaints per 1,000 deliveries.

2. Strategy and Management

Principles guiding our actions

Vision and mission

Climate change, increasing mobility, a growing global population, and rising urbanization: global megatrends such as these represent tremendous challenges. Covestro is facing these challenges, uniting business success with sustainability. The goal is to realize Covestro's vision: to make the world a brighter place.

We aim to promote innovation and growth with profitable products and technologies that benefit society and reduce the impact on the environment. This is our mission. In pursuing it, we rely on technologies that reduce energy consumption and emissions in our production processes. And we are replacing traditional materials such as glass and metal, which are manufactured less sustainably or have a less sustainable life cycle, with products and plastics we develop. We accomplish this by thinking ahead and, instead of fossil resources, developing alternative building blocks for our chemicals that are either omnipresent or far more sustainable.

Corporate values

Covestro is proud of its corporate values, summarized as C³: curious, courageous and colorful. These values guide all of the Group's employees and are reflected in their daily thoughts and actions.

Curious

We are proud of our past, but we are not defined by it. We never settle for the status quo and think ahead. Our curiosity drives us to listen to our customers and suppliers and respond with creative and unexpected solutions. We are responsive to what is happening around us and believe that speed and flexibility will give us an advantage over our competitors. We are open to new ideas and hungry for progress.

Curiosity is the engine that drives us.

Courageous

We look toward the future and see opportunities where others see limitations. Where others ask "why?", we reply "why not?" Our courage permeates our entire business – from partnerships to business models. We stand on a foundation of knowledge and experience that allows us to act courageously and push the boundaries of innovation.

We have courage and integrity. We do what is right, not just what is convenient.

Colorful

In a corporate world that can often be dull, we make a difference. We are optimistic and resourceful and use every color in our palette to create solutions that inspire our customers and partners. We value strong customer, supplier and employee relationships and believe that humanity helps us to create a rainbow of opportunities. We are convinced that diversity and inclusiveness not only promote innovation, sustainability and employee engagement within our workforce, but also improve decision-making processes and contribute to our success.

We believe diversity drives creativity and multiple viewpoints allow us to solve problems in innovative ways.

Corporate culture and leadership profile

The corporate culture is a key strategic pillar for Covestro and is based on the company's values and vision. Moreover, a culture firmly rooted in the company enables the implementation of the strategy, therefore ensuring the company's long-term success. We live in a culture that facilitates fast decisions, innovative approaches and close proximity to the customer. At the same time, diversity is at the heart of our corporate culture. Diversity is our strength – inclusion is our obligation.

This culture is influenced by the employees and in particular by the managers who are responsible for setting a good example through their conduct and embodying the culture. The expectations for this transformational leadership are described as follows: we want value-based leadership motivated by personal mindset as well as corporate values. Conducive leadership helps to improve employees' ability to maximize their full potential. It also ensures that the employees possess the necessary decision-making authority and have access to optimal work and safety conditions.



For more information, see section 2, sub-section "Company policies and voluntary commitments" in the GRI Supplement

Sustainability approach

In keeping with our vision, we want to make an equal contribution to increasing the overall value at the economic, environmental and social levels. Our decisions and our actions always take into account the three Ps of sustainability – people, planet and profit. Our actions are oriented toward a positive impact on at least two of the three Ps, while at the same time ensuring no harm is done to any of them. We take a holistic view of every decision and every action as well as their consequences – which, all in all, reflects an integral part of the Group's strategy and corporate governance.

Strategic goals and activities

Group strategy

Our overarching goal is to make the world a brighter place, which is in keeping with our vision. To this end, the company provides innovative products, technologies and application solutions. In particular, our activities are aligned with the UN Sustainable Development Goals (SDGs) in support of global progress at the ecological, economic and social levels. Experts agree that these goals have significant economic potential and could lead to profound changes and above-average growth in the industrial sectors important to Covestro.

Our current strategy was developed with a view primarily to taking full advantage of business opportunities resulting from global megatrends and sustainability issues. This is all part of our efforts to continue growing profitably in the years to come and to exceed global economic growth rates overall. We intend to achieve this using six strategic pillars.

Strategic pillars



Investing to strengthen the core business

Covestro expects to see strong growth in its markets and plans to successfully leverage this development through optimal participation. We will therefore significantly expand production capacities in our core lines of business. To this end, we plan to invest in excess of the depreciation level in the years to come. As a rule, this concerns production facilities across all product groups and at all of the major sites. We are adding skilled staff and resources in order to ensure optimal technical implementation of the corresponding projects.

Innovating to promote greater sustainability

Sustainability is a central concern, and it shapes our activities all along the entire value chain. We consider sustainability to represent an economic opportunity benefiting all interest groups. In the years to come, we therefore intend to focus our research and development even more on sustainability issues such as electromobility as well as energy- and cost-efficient construction. Accordingly, we plan to invest even more heavily in research and development projects oriented toward the UN Sustainable Development Goals.

Growth options within the circular economy are one key element. This pertains both to our existing business with polycarbonate recyclates as well as to the area of polyurethanes. Here, we closely analyzed products that are at the end of their life cycle as the basis for future raw materials. Over the years to come, we will conduct the corresponding economic and environmental analyses of both recycling technologies and new product developments. This underscores our commitment to creating sustainable solutions for meeting the challenges of the future.

Acquiring to create value and accelerate growth

We are actively seeking acquisition options in order to expand our portfolio. They represent another way to participate in the rapid market growth that we anticipate in the years to come stemming from issues related to the future and sustainability. We carefully evaluate potential acquisitions to determine whether they – with regard to our stockholders – increase Covestro's enterprise value and the impact they may have on other stakeholders. Furthermore, takeover candidates must also suit our existing lines of business, our entire company and our corporate culture.



For more information, see section 2, subsection "Covestro and the UN Sustainable Development Goals" in the GRI Supplement

Becoming more efficient and effective

To increase effectiveness and efficiency throughout the entire company, Covestro rolled out a Group-wide performance program entitled Perspective in 2018. The program's primary objectives are to further refine work methods and cross-divisional processes, in addition to continually improving our competitive and cost position. These measures are expected to generate a long-term cost savings of approximately €350 million by 2021 at the latest, which in turn will be used to limit an increase in operating costs.

Drive digitalization

With an extensive program, we aim to increasingly take advantage of the opportunities arising from digitalization. Our primary aim is to set new standards for how we work with our customers. At the same time, all employees should benefit from digitalization. To achieve this goal, Covestro anchors digital technologies and work activities in production, along the supply chain, in research and development, in the administrative functions and at all points of contact with the customer. In 2018, we continued to work on and test a digital trading platform where customers will be able to purchase standard products from Covestro and also, where applicable, from other providers. Selected business entities have partially or entirely shifted their sales to the platform, which is now integrated into the SAP processing system, and have managed to reach the expected volumes and sales with products sold through fixed-price and auction-style listings. Meanwhile, we are cooperating closely with customers in other industries on a global scale. The goal of this collaboration is to implement the customers' requests with regard to the design and functionality of our digital sales channels. To this end, we opened a flagship store on the leading Chinese B2B platform 1688.com, which is owned by the Alibaba group.

Shaping our corporate culture

In the coming years we intend to improve our corporate culture in such a way that it bolsters our efforts to successfully address future trends and meet market requirements. The purpose here is to tap into our internal potential to the fullest extent and reach our business goals by more intensively promoting innovative ideas and short chains of command. Influenced by the responsible conduct of our managers, this culture provides our employees with the framework for their day-to-day activities and ensures that all employees share the same values. In this way, we aim to put every employee in a position to be able to achieve their best performance.

Strategy of the Individual Segments

Polyurethanes

In the years to come, demand for polyurethanes is expected to grow at an above-average rate compared to the global economy. In the Polyurethanes segment (PUR), we aim to provide the precursors needed to tap into this development.

The construction industry is one of the strategic industries where we are already strongly represented, and we intend to further expand this position. At the same time, we plan to take into account the growing need for sustainable solutions. In the future, our range of products should satisfy the demand for energy-efficient and affordable living spaces, mainly in the emerging economies. Considering the UN Sustainable Development Goals, there are some not yet fully developed segments that also warrant our attention – such as wind energy, where we provide materials for generation.

The PUR segment manufactures largely standardized products and the focus there is thus also on increasing efficiency through cost management as well as product and process innovations. In addition, we plan to develop new business models and improve existing ones. To achieve this, we are continually evaluating the potential for optimizing facilities and sites, in addition to opportunities to cooperate with other companies.

Polycarbonates

New forms of mobility call for innovative solutions. In the Polycarbonates segment (PCS), we are continually improving our product portfolio to take this trend into account. After all, materials with low weight, high-quality optics and transparency are particularly in demand in the automotive industry, such as in the promising electromobility market.

We intend to further increase the share of stable-margin business by focusing on the applications with more stringent requirements in the automotive as well as in the health and electronics/LED areas. Furthermore, through innovations such as fiber-reinforced composite materials, we plan to consolidate the technological position of the PCS segment and generate even more growth in differentiated markets.

With its distinct application expertise and global alignment, the PCS segment should grow at a higher rate than that of the global economy.



For more information, see section 3 in the GRI Supplement

Coatings, Adhesives, Specialties

Producing precursors for coatings and adhesives is our main area of business in the Coatings, Adhesives, Specialties (CAS) segment. In this segment, we supply coatings and adhesives producers whose products are used in the automotive, construction and furniture industries, among others. We aim to secure and further build on our strong position. Of particular importance in achieving this are consistent cooperation along the entire value chain, the efficient expansion of our capacities and product development close to the customers. Furthermore, we are working on products that are as environmentally friendly as possible, do not require the use of solvents and utilize alternative raw materials such as plant biomass.

As in past years, Covestro also plans to grow at an above-average rate in the area of specialties thanks to our superior technological knowledge and our expertise in chemical formulations. In this way we aim to achieve new and profitable application areas for our products.

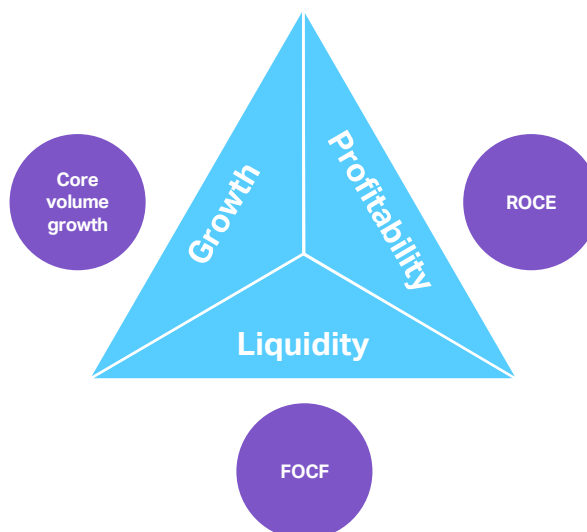
Management

Covestro's management system is aligned with long-term, profitable growth and continuous value creation. The Board of Management, the main decision-maker for the company, is responsible for our global business and approving the planning derived from our corporate strategy. In order to plan, manage, and monitor the development of our business, we use steering parameters which enable the company's business performance to be evaluated in a comprehensive and holistic manner. In addition, the Board of Management uses defined sustainability goals and selected nonfinancial performance indicators to govern the Group's sustainable orientation.

Business performance

The Covestro Group assesses business performance using key management indicators in the areas of growth, profitability and liquidity.

Covestro's Key Management Indicators



Growth of the Covestro Group is also measured in terms of the development of core volume growth³. In contrast to sales, this indicator is less influenced by raw material prices or currency effects.

The return on capital employed (ROCE) is the indicator used to assess the profitability of the Covestro Group, measuring the return the company achieves on the capital it uses. If ROCE exceeds the weighted average cost of capital (WACC), i.e. the minimum return expected by equity and debt capital providers, the company has created value.

Income after income taxes plus financial result, income tax expense, and depreciation and amortization (EBITDA) is the other indicator used to assess the operating profitability of Covestro and its reporting segments.

³ Core volume growth refers to the core products in the Polyurethanes, Polycarbonates and Coatings, Adhesives, Specialties segments. It is calculated as the percentage change in externally sold volumes in thousand metric tons compared with the prior year. Covestro also takes advantage of business opportunities outside its core business, for example the sale of precursors and by-products such as hydrochloric acid, sodium hydroxide solution and styrene. These transactions are not included in core volume growth.

The ability to generate a cash surplus is measured by the free operating cash flow (FOCF). FOCF is an indicator of our company's capacity to finance itself and of its liquidity, and corresponds to the operating cash flow less the cash outflows for additions to property, plant, equipment and intangible assets. A positive FOCF serves in particular to pay dividends and interest and to repay debt.

These management metrics also come into play in the Group's bonus system, which applies uniformly to all staff – from the Board of Management to employees under collective bargaining agreements. The three growth factors, profitability and liquidity each account for one-third of the final assessment and bonus calculation formula. As a result, all employees whose personal efforts contribute to Covestro's overall positive performance can share in the company's success.

Sustainability

Sustainability is a core element of our mission and an integral part of our strategy. We are committed to a conscientious approach in terms of how we handle both our environment and our surroundings. We fuse our economic growth with sustainability – by offering profitable products and technologies that are beneficial to society and reduce environmental impacts to push the boundaries of what is possible. Our commitment to sustainability is anchored in our vision.

We are driven by ambitious sustainability goals that we intend to achieve by 2025: we aim to reduce our specific emissions, i.e. the CO₂ equivalent emissions per metric ton of product manufactured, by 50% by 2025 compared with 2005 benchmarks, convey our sustainability requirements to all of our suppliers, align our research with the UN Sustainable Development Goals, improve the lives of ten million people in underserved markets and get the most out of carbon.

Our five sustainability goals are aligned with the UN sustainability goals and have different positive impacts on the implementation of all 17 sustainability goals. In our corporate principles, we commit to finding ways of contributing toward reaching the UN sustainability goals.

We regularly review the sustainability topics of importance to Covestro as part of a materiality analysis. During this process, we also incorporate input from external stakeholders and update our nonfinancial goals as well as our activities and programs accordingly.

We have adopted the principles of the United Nations Global Compact. The principles of the charter we signed are mandatory for all our employees throughout the world. We are also committed to the industry-led Responsible Care initiative and are involved in global sustainability forums such as the World Business Council for Sustainable Development (WBCSD). Furthermore, we expect our suppliers to adhere to the same high standards of sustainability that we hold ourselves to. We have developed a Code of Conduct that all suppliers must observe, regardless of where they are headquartered or where they do business. The principles set out in this code serve as drivers of innovation for us and support the implementation of our strategy.



See section 5
"Company-wide
Sustainability
Management"



For more information,
see section 5, sub-
section "Stakeholder
dialog" in the GRI
Supplement

3. Innovation

Innovation is a core element of Covestro's strategy and is part of our identity. This is why our understanding of innovation is broadly defined: we do not rely on traditional research and development alone, but rather also on the great potential for creativity throughout the entire company. Promoting innovation at Covestro should be something that involves every individual employee.

In order to maintain and reinforce our position in the global arena, we work tirelessly at all levels to develop new products, improve established ones and optimize manufacturing and processing procedures. Application areas, business models and business processes are also subject to ongoing review. We draw on decades of experience and demonstrable success in these endeavors.

Innovation management



For more information,
see section 3 in the
GRI Supplement

By managing innovation systematically throughout the Group, we ensure that our ongoing activities and our project pipeline always satisfy the needs of our customers, user industries and consumer markets. The Innovation Excellence department uses a wide variety of tools to achieve this. For example, we use a standardized method to assess every research and development project and incorporate the resulting findings into ongoing and future projects. The global, digital platform idea.lounge is available for discussing and processing ideas from all parts of the company. A new electronic platform for the operational suggestion system for managing and tracking improvement suggestions has been in development since 2018.

At "Innovation Celebrations," we recognize employee projects from around the world that reflect our broad understanding of innovation. The awards serve to recognize innovative ideas for products and applications, production and production processes, business models and commercialization, internal business processes, as well as patents and intellectual property.



For more information,
see section 2, sub-
section "Covestro
and the UN Sustainable
Development
Goals" in the GRI
Supplement

We seek to systematically align our research and development portfolio with the UN Sustainable Development Goals (SDGs) – in a manner consistent with our corporate vision. Our target for 2025 is to have 80% of project expenditures for research and development go toward areas that contribute to reaching these goals. The Group-wide evaluation process for existing and new innovation projects is currently being refined internally. One particular focus of our research activities is on the search for and development of solutions that help to address climate change.

In fiscal 2018, our research and development expenses amounted to €276 million after totaling €274 million in the previous year. As of December 31, 2018, Covestro had 1,123 employees⁴ working in research and development worldwide (previous year: 1,072), most of them at major innovation centers in Leverkusen (Germany), Pittsburgh (United States), and Shanghai (China). Its global presence allows Covestro to respond to regional market trends and customer requirements.

Use of digital technologies

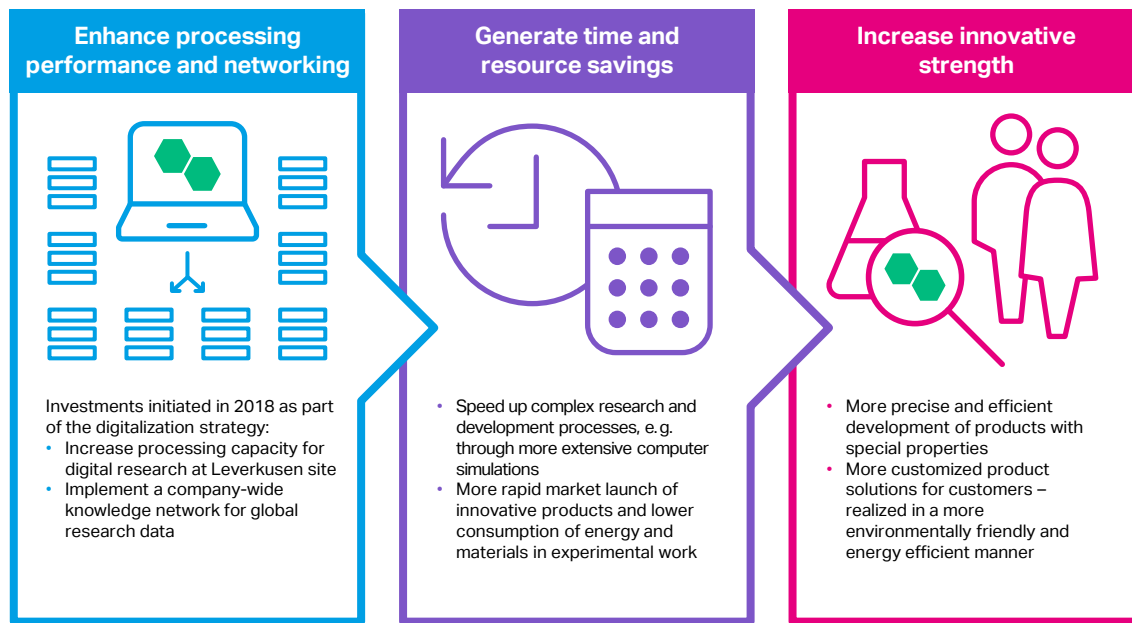
Covestro is committed to pursuing digitalization along with the associated new opportunities for the entire chemical and plastic value chain. Covestro utilizes the opportunities arising from digitalization with a comprehensive strategic program and particularly the intelligent use of data, thus setting new standards in cooperation with customers. To achieve this goal, we anchor digital technologies and work activities in production, along the supply chain, in research and development, and at all points of contact with customers as well as for developing new business models. The focus is on the specific benefit for our customers.

At the same time, all of our employees benefit from the opportunities of digitalization. Covestro recognizes digitalization as a comprehensive ongoing development that includes various priorities and advances at different speeds. The company has already used data analysis for a number of years primarily for production processes and continually invests in employees and infrastructure to systematically promote digitalization – and therefore improve the efficiency of work and production processes using modern data processing and the intelligent interconnection of systems. This also includes supply chain management and mobile work arrangements.

⁴ Employees calculated as full-time equivalents (FTE)

In this connection, Covestro is ramping up the digitalization of research and development.

Expansion of digital research and development



Strategic partnerships

To remain innovative, Covestro not only closely cooperates with its customers around the world, it also collaborates with partners from academia and industry under the banner of open innovation, which is of great strategic importance for the company. Bilateral cooperations and collaboration in large, publicly funded consortiums characterize the partnerships with research facilities and universities as well as with companies along the value chain.

Covestro's "Inclusive business" teams focus on improving the living conditions of people in underserved markets around the world. Their work in this area involves developing affordable solutions based on our innovative and sustainable products and technologies. These efforts focus particularly on food security and sustainable and affordable construction, e.g. for housing, schools and training centers, including water supply and sanitary facilities.

Our activities are aligned with the UN Sustainable Development Goals. Our guiding principle is to effect a positive change in the lives of ten million people and to contribute to social improvements by 2025. We would like to work with other organizations sharing similar values as part of a collaborative approach aimed at developing innovative solutions and business models.

Covestro maintains long-standing and strategic partnerships with various universities. This includes cooperating with outstanding partners throughout the world, such as RWTH Aachen University, Tongji University in Shanghai (China) and Carnegie Mellon University in Pittsburgh (United States).

On the industrial side, we are working more intensively with young start-ups and established partners that support us in our intensive efforts to develop alternative, nonfossil resources and biobased processes. A prerequisite for making biobased raw materials usable is their direct contribution to optimizing resources compared to traditional processes.

Our innovation project aimed at manufacturing biobased aniline is one example of this. We are now able to manufacture the important basic chemical aniline on the pilot plant scale from biomass, rather than using the traditional method benzene, a raw material based on crude oil. This innovative procedure is the result of a cooperation between University of Stuttgart, the CAT Catalytic Center at RWTH Aachen University and Bayer AG. Covestro has thus succeeded in positioning itself as an innovative and sustainable company and as an ideal partner for future research and development projects.



See section 5
"Company-wide
Sustainability
Management"

In addition to making alternative biobased raw materials usable in order to improve resource efficiency and expanding the CO₂ technology platform to close the carbon cycles, electrochemical processes represent an area of activity for visionary, circular economy solutions aimed at the energy-efficient manufacturing of basic chemicals. In pursuit of this goal, Covestro collaborated with RWTH Aachen University and the Jülich Research Center to establish the industrial electrochemical competence center ELECTRA.

Alliance Management, a central unit at Covestro, provides support throughout the Group in planning and implementing cooperations and networks and for positioning the issues of innovation and sustainability at the state, federal and European policy levels.

Resource-efficient circular economy solutions

Many process and product innovations that we develop with and for our customers strengthen the circular economy by achieving greater resource efficiency by means of longevity and energy efficiency. Another goal of this is to responsibly reuse or recycle the materials utilized throughout the value chain. In doing so, we aim to uphold the quality and must ensure the safety of the products and avoid waste and emissions to the greatest extent technically possible.

Covestro works in cross-industry consortiums on methods aimed at making it possible to use CO₂ and waste flows of other industrial sectors as future raw materials for its products. In order to live up to the growing significance of circular business models and the need for more efficient use of resources, a central coordinating office with global responsibility for circular economy was established at Covestro. In addition, a venture management team was established in 2018 in the Polyurethanes segment to work with the coordinating office on reviewing potential cooperative projects along the entire value chain and assessing future business potential and technology options pertaining to the integration of waste-based raw materials.

In 2018, we also promoted the exchange of scientific findings and supported and helped organize the conference "Circular Economy" hosted at the Leverkusen site by the German Chemical Society (Gesellschaft Deutscher Chemiker, GDCh). Furthermore, the event serves as a signal of the close collaboration between the chemical industry and science for the purpose of promoting circular and sustainable solutions.



For more information,
see section 3 in the
GRI Supplement

Our products consist primarily of chemical compounds that are based on carbon. We want to use carbon as intelligently as possible. Increasing carbon productivity means creating more value using fewer carbon-based fossil resources. We work with a group of international organizations in the Carbon Productivity Consortium to develop a generally recognized method for assessing carbon productivity and to make it a tool for change. Meetings were held in 2018 with other leading businesses and organizations, e.g. during the Covestro-Tongji Sustainable Development Forum in Shanghai (China).

Innovation in the individual segments

Polyurethanes

In the Polyurethanes (PUR) segment, we are working continually on improving the technology, costs and sustainability associated with polyurethane manufacturing. Using digital work techniques, we aim to address customer needs even more specifically during the development process. The research focuses on insulating properties and lightweight application developments as well as on efforts to improve flame-retardant properties, reduce emissions and manufacture cost-effective, sustainable precursors.

Covestro plays a decisive role in the industrial development of temperature-independent viscoelastic foams. The strategic, global partnership with the Haier Group, the world's largest manufacturer of large electric household appliances, underscores our innovative strength in improving energy-saving microcell foams. Together with other industrial partners, we are working on new processing technologies that can be used to manufacture lightweight composite materials. These include the innovative process called pultrusion, which we are further developing in cooperation with KraussMaffei Technologies GmbH and profine GmbH.

In addition, Covestro is conducting systematic research in the PUR segment to determine how CO₂ can be used intelligently. In the search for alternatives to petrochemical resources, we have succeeded in using CO₂ as a raw material for the synthesis of polyols on an industrial scale. Covestro has developed a new type of polyol for use as a component in flexible polyurethane foam that is manufactured to contain as much as 20% CO₂. This polyol is produced on an industrial scale in a facility at the Dormagen site in Germany, making use of a CO₂ waste gas flow from an adjacent facility. Products launched on the market already under the brand name cardyon™ include mattresses from RECTICEL NV/SA and, the most recent example, a sports flooring from Polytex Sportbeläge Produktions GmbH.

Furthermore, Covestro is working to expand the technology platform for the future production of molecules and products using CO₂. In order to better close the raw materials cycle, we are collaborating with industrial partners to research how foams can be recycled in various application areas and which technologies are visionary from a holistic perspective. We joined a partner in 2018 to commission a European waste study that analyzed the polyurethane waste flows and that can be used as a reference for future recycling scenarios.

New digital products such as our digital service platform also offer innovative solutions for customers. This platform has a forecast tool to identify the best online polyurethane recipes and processing conditions for a specific production environment.

A digital chemical reactor has also demonstrated initial success. Covestro developed software for this product to precisely calculate the changes in temperature and molecular composition, in other words, the progression of the chemical reaction.

Polycarbonates

In the Polycarbonates segment, we are developing products including new polycarbonate-based material solutions and customized products tailored to meet increasingly complex customer requirements in the mobility, health and electronics/LED technologies areas. The key here is to lower the weight of the components and final products, improve their energy efficiency and safety, and realize completely new design possibilities.

The trend toward modern and integrated light elements – made possible by LED technology – is a theme that can be traced through all industries, but particularly in the field of mobility. Due to their transparency and thermal stability, polycarbonates are the ideal material for realizing innovative solutions.

In the automotive sector, the growing number of driving assistance systems, sensors and camera systems can be seamlessly integrated with our sensor-transparent materials of the Makrolon™ brand. We also support the new requirements for electric drive systems by developing new flame-retardant products, e.g. for ultra-light honeycomb crash absorption structures for protecting batteries, vehicles and passengers.

In 2018, we provided consistent support in the lighting market for the growing trend toward LED technology. Our newly developed products combine outstanding optical properties with exceptional longevity. In this way, Covestro supports the trend toward maintenance-free, efficient LED lighting.

Our innovations in the field of health applications are also worth noting. We designed a new clear-transparent material that meets the exacting requirements for manufacturing diagnostic ampoules, thus improving occupational safety for medical technology staff when conducting time-sensitive blood analyses. In addition, our newly developed carbon-fiber reinforced Makrolon™ allows us to manufacture disposable surgery implements more efficiently.

For the electronics industry, our new product portfolio meets customers' stringent standards concerning optical and high-gloss display properties. Due to the new materials, it is now possible to realize larger displays with three-dimensional design. We have also made consistent advancements in the field of high-performance materials. At the Markt Bibart site we commenced operations in the commercial production of our Continuous Fiber-Reinforced Thermoplastic (CFRTP) composites, thus combining the stiffness and strength of carbon-fiber or fiberglass with the flexibility and efficient processability of thermoplastics. This makes applications lighter, increasingly stable and even more aesthetic and creates entirely new design possibilities in key areas such as IT, mobility and consumer products.

Coatings, Adhesives, Specialties

The Coatings, Adhesives, Specialties segment serves a number of specialized industries. Together with these customers and partners, we introduced significant innovations in 2018. A process and product innovation allowing even lower residual monomer content in our Desmodur™ and Bayhydur™ types had the biggest impact on our product portfolio in 2018. These are setting the new market standard in regard to work safety and industrial hygiene.

In 2018, we began launching a number of new products featuring biobased raw materials. Alternatives to petrochemical raw materials help to conserve resources and improve the carbon balance and are particularly successful wherever further product performance enhancement is required.

In addition to our standard products, our specialty areas are particularly strong drivers of innovation. The area of thermoplastic special elastomers is capitalizing on customized solutions for the electronics industry, such as cell phone cases. The Elastomers unit developed new polyurethane casting systems for the substitution of rubber products in mining. It also supplies suitable processing machinery and, in 2018, introduced a new generation of machinery that is intended to increase precision, productivity and efficiency for our customers. In the Specialty Films unit, significant investments were made in new capacities as a result of successful projects with the automotive, medical technology and security card industries.

We are pursuing new digital paths with regard to customer interaction. Based on the results of our research, we developed a digital tool to help customers make the right selection from our products and to provide the appropriate recipe for products. They can individually enter the desired properties themselves. In the area of processing machinery for elastomers, we introduced a digital interface to allow the maintenance of machinery while online, the management of innovative processing methods and the implementation of quality checks.

In the additive manufacturing (3D printing) area, we were able to implement critical, strategic steps using digital technologies. In the field of shoe technology, we worked with partners from the industry to establish new system solutions. As a result, efficient 3D printing processes replaced time-consuming work steps, and industry-standard materials were substituted by Covestro plastics.

4. Employees

The multifaceted abilities and personal efforts of all employees are the key to Covestro's success. Every employee has both the freedom and a mandate to act and contribute in line with our corporate values. Covestro thus promotes a working environment that is shaped by unconventional thinking, effective exchange of knowledge, creative problem-solving, constructive feedback and collegial cooperation. We aim to empower each of our employees to work to their full potential. Our managers are responsible for facilitating and supporting these objectives in close collaboration with our employees. In this way, we can work together to make an ongoing contribution to the company's success.

As of December 31, 2018, Covestro had 16,770 employees worldwide (previous year: 16,176). At the reporting date, the Group also had 541 employees in vocational training worldwide (previous year: 505), 516 of whom were based in Germany (previous year: 489).

Employees by Corporate Function¹

	Dec. 31, 2017	Dec. 31, 2018
	in FTE	in FTE
Production	10,115	10,479
Marketing and distribution	3,476	3,601
Research and development	1,072	1,123
General administration	1,513	1,567
Total	16,176	16,770
Employees in vocational training	505	541

¹ The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE). Part-time employees are included on a pro-rated basis in line with their contractual working hours.

Human resources profile and focus

The focus of human resources is on promoting employees' individual skills and advancing their expertise, thus enabling them to optimally contribute to interdisciplinary collaboration. Our cultural awareness and our corporate values set standards for performance-related behavior and the respectful interaction with each other. Covestro makes it possible for employees to be directly involved in change processes and contribute their own feedback in order to continually improve the work processes and conditions. We place the highest priority on health and safety in the workplace. The constant monitoring and improvement of occupational safety, along with the range of programs and initiatives aimed at promoting health, provide vital conditions for successful collaboration. In addition, we place a particular focus on further reinforcing diversity and inclusion.

In terms of its structure and its content, the HR organization is positioned in line with the previously mentioned goals, and together with the new personnel management system launched this year, it reflects the necessary processes on a global level.

Hiring and retaining highly qualified employees

It is a strategic challenge for Covestro to be regarded as an attractive employer worldwide. We aim to retain qualified employees for the long term, ensure their professional and personal development and hire new talent.

When recruiting new employees, the Employer Branding and Recruiting departments rely increasingly on digital channels. The company reaches out to different target groups through social media and digital platforms such as LinkedIn and Glassdoor to introduce Covestro as an employer. Career sites were launched in 22 countries in 2018 to allow different target groups to be contacted at regional and national levels. These sites showcase Covestro as a company but also as an attractive employer in the respective region. We also rolled out an application management system globally in all of the countries, providing interested candidates the opportunity to view our current job postings around the world and to apply directly online. In this way, we focus our recruiting activities on the applicant.

We engage in numerous activities to maintain our overall attractiveness and significance as an employer brand. In all countries in which we are present, we actively conduct HR marketing to attract employees, thereby relying on direct interactions. To achieve this, we maintain close contacts with leading universities, are involved in international networks of students and take part in career fairs. Furthermore, we hold career events, workshops and tours at various Covestro sites. For instance, Covestro is involved in UNITECH International, a network of prospective engineers from nine universities and 22 companies.



See note 9, "Personnel Expenses and Employee Numbers" in the Notes to the Consolidated Financial Statements



For more information, see section 4, sub-section "Employee metrics" in the GRI Supplement



For more information, see section 8, sub-section "Occupational health and safety" in the GRI Supplement

In addition to the vocational training options we offer in Germany, we bring in high-school and college students to take part in numerous attractive professional internships worldwide each year. This gives them insight into our company's operations as well as personal experience with Covestro as an employer. In addition, Covestro offers interesting trainee programs for university graduates. For job activity profiles, we actively approach candidates and introduce the entry level options.

We also hold global competitions, award ceremonies and other events to encourage special achievements and outstanding commitment. For example, Covestro was a partner company in the Carbon Footprint Challenge 2018, which recognized ideas for reducing the carbon footprint in the industrial sector. This competition was hugely successful. Teams of students from 81 countries submitted over 150 different suggestions featuring ideas for ways to optimize the carbon footprint of processes and products in the future.

Promoting and developing employees and their development

Well educated and trained staff is crucial for ensuring that the company can further develop and is essential to the company's success. We believe in the concept of lifelong learning. We support our employees in continuing their professional and personal education throughout all phases of their careers.

To this end, we offer a wide range of customized continuing education options for all employees through our in-house learning concept entitled Coversity (a term that combines Covestro and university). Coversity holds numerous in-person classes and virtual training sessions worldwide at its Functional Campus, Project Campus, Leadership Campus and Virtual Campus, each of which focuses on a different target group. In support of the corporate strategy, the following focal points were highlighted in 2018: digital transformation and expansion of e-learning offerings, engineering and project management programs and agile work methods.

In the area of personnel development, Covestro uses a model with clearly defined core and leadership skills that serves as a reference for all employees. This is intended to ensure that managers and employees use the same vocabulary and uniform criteria when assessing performance. This model is used to conduct sound career planning, performance assessment and potential assessment for employees. The requirement profile for top management at Covestro was also revised this year, particularly to specify the focal points of the leadership behavior expected in the future. We have also transferred our performance assessment approach to an ongoing dialog between staff and supervisors held during the year, thus ensuring the timely adjustment of goals and priorities. In addition, performance meetings are held between staff and supervisors in which individual strengths and improvement opportunities as well as professional development perspectives within the Group are discussed. Managers and employees alike can take the initiative at any time and run a development meeting on an ad hoc basis. The contents of these discussions are integrated into the ongoing human resources planning conferences to optimally develop employees in their own best interests and those of the company. Maintaining a constant dialog between the employees and management is a key concern. To this end, employees can use an application in the human resources system to provide or actively request feedback across hierarchical levels, a feature intended to further reinforce the feedback culture within the company.

Compensating employees transparently and competitively

Offering fair compensation in line with the market is an essential prerequisite for recruiting, retaining and motivating qualified employees. Covestro therefore combines a base salary reflecting the duties of a position with performance-related compensation components and extensive additional benefits to create an internationally competitive pay package, about which employees are informed transparently.

Tasks and responsibilities are classified on the basis of a job evaluation conducted without considering the individuals in the positions. In the area of managerial functions, an internationally recognized evaluation method is used if the job evaluation has not already been stipulated by a local collective agreement. Based on this classification, the amount of the base salary in all countries is aligned with regional market conditions. Regular compensation benchmarking is conducted to ensure this orientation is maintained for the long term.



See notes 21, "Other Provisions" in the Notes to the Consolidated Financial Statements

Through the Group-wide bonus program Covestro Profit Sharing Plan (Covestro PSP) that has been in place since 2016, we have made it possible for our employees to participate in the success of the company each year with a uniformly calculated bonus payment. In addition, employees in managerial functions participate in the global compensation program Prisma, which bases payments on the Covestro share price, including in comparison to that of our competitors, and in this way rewards the long-term changes in the company's share price. Furthermore, a global budget is available from which supervisors can promptly grant Individual Performance Awards to recognize outstanding conduct, commitment and performance of all employees with a view to our values.

As in previous years, the stock participation program Covestment was once again offered in 2018 and provides employees with the opportunity to purchase Covestro stock at a discount. Over 50% of all eligible employees in Germany took advantage of this offer. This program was introduced in the United States in 2017. In the year under review, more than 40% of all eligible employees there made use of it. In 2018, Covestment was expanded to Hong Kong (China) in addition to Belgium, Italy, Mexico, Netherlands, Spain, Taiwan and Thailand. Approximately 75% of Covestro's global workforce is thus able to purchase Covestro stock at discounted prices.

Promoting diversity and inclusion

Covestro provides a working environment in which a wide variety of skills, talents, experiences and beliefs are welcomed and treated with respect. We promote unconventional thinking, creative ideas, and open-mindedness. Covestro is advancing the topic of "Diversity and Inclusion" as an important part of its corporate culture. Targets and a greater understanding for diversity and inclusion are being further solidified in global action plans and regional implementation teams. We are confident that a diverse workforce will lead to outstanding innovation and employee commitment. The inclusion of different perspectives results in more balanced decisions and thus contributes significantly to Covestro's success.

Creating the best working conditions and work models

The health, safety and professional and personal dedication of our employees are extremely important to us. Continuous monitoring of and improvements to occupational safety, combined with the range of programs and initiatives aimed at promoting health, serve as the fundamental principles for creating working conditions. Human resources management is supported in this task by the areas of Health, Safety, Environment and Quality (HSEQ) together with Law, Intellectual Property and Compliance (LIPC) and Corporate Audit. They assist Covestro in ensuring that all internal and relevant requirements of compliance and labor laws are met.

We also offer our employees modern working conditions so they can always be successful in a changing working environment and balance their professional interests with personal interests such as family life. In many countries, we exceed our legal obligations, e.g. by offering solutions such as flexible working hours, part-time working and working from home if this is compatible with operational requirements. A direct dialog with our employees is also particularly important to us. In this regard, we take into account national and international notification duties.

Our social responsibility as a company and an employer is based on our corporate values and our unreserved commitment to supporting and fostering human rights in our sphere of influence. At Covestro, social responsibility also includes creating working conditions that are based on mutual respect and appreciation among employees and, in particular ensure safety at the workplace. Our sustainable personnel policy also features a strong social safety net for our employees.

In addition, Covestro actively encourages awareness of healthy lifestyles. This is particularly true in regard to the challenges facing us as a result of demographic change and the raising of the retirement age in many countries.

We offer comprehensive workplace health management that is continuously expanded in response to employee surveys. The intention is to ensure that all employees have access to adequate and affordable health offerings such as sports programs, regular medical check-ups, help in overcoming illness and on-site medical care. The nature and scope of the health promotion programs differ around the world with regard to the respective country-specific level of development and access to national health systems. We offer our employees comprehensive measures aimed at preventing illness, in many cases exceeding statutory requirements.

New, flexible working environments for greater contact and communication

The work environment, contents and working methods are undergoing constant changes due to the digital transformation and the increasing level of momentum and complexity at our workplace. In order to meet these ever-changing requirements, Covestro provides a modern working environment. This applies particularly to cases such as moving into or creating new workspaces. Special emphasis is placed on a working environment that promotes learning and development while supporting agility and the exchange of knowledge. To achieve this, we provide not only the appropriate facilities, but also the IT infrastructure and media technology that works simply and intuitively.

We call this way of working our C³ methodology. It is intended to allow a change of perspective, creativity and effective collaboration to bring together all employees across team, department and national borders.

Our managers play a special role in this system. In addition to the established leadership standards and work methods, they are increasingly called upon to work together with their employees in the development of flexible and customized solutions for the purpose of leading Covestro into the new working environment at all levels, thus ensuring ongoing success.

Conducting business responsibly

5. Company-wide Sustainability Management

Covestro aims to help protect the environment, conserve limited resources, advance society and create value, all by firmly integrating sustainability into the corporate strategy and management.

Moreover, Covestro underlines the significance of the topic of sustainability and its identity as a sustainably operating company through its membership in key sustainability initiatives and its voluntary commitment to apply the guidelines and principles of those initiatives. Upon gaining economic and legal autonomy in September 2015, Covestro immediately signed up to the UN Global Compact and adopted its ten internationally recognized principles.

Strategic alignment

We would like to inspire innovation and drive growth – with profitable products and technologies that benefit society and reduce the impact on the environment. Similarly, we aim to serve our customers, society and the environment alike through our sustainability commitment, in accordance with our corporate vision of making the world a brighter place. Our Group-wide sustainability program approved in 2016 reflects these aspirations which are defined in ambitious nonfinancial targets to be achieved by 2025:

- Our project portfolio for research and development is aligned with the UN Sustainable Development Goals. By 2025, 80% of project expenditures for research and development will go toward areas that contribute to reaching these goals.
- 100% of our suppliers to comply with our sustainability requirements
- Reduce specific greenhouse gas emissions by 50% from the 2005 baseline figures
- Ten million people in underserved markets to benefit from our business solutions
- Get the maximum benefit out of carbon. Increasing carbon productivity enables us to create more value with fewer carbon-based fossil resources. We work in a group of international organizations on projects such as developing a generally recognized method to evaluate carbon productivity and making it a tool for change.

Targets are also agreed for the health, safety, environment and quality (HSEQ) topics and regularly reviewed using defined performance indicators. For instance, we defined another sustainability target pertaining to energy efficiency: we will halve the 2005 level of energy consumption per metric ton of product produced by 2030. Using the results achieved, existing action plans and measures are dynamically adapted to enable further improvements.

Covestro strongly endorses the comprehensive and global approach of the UN Sustainable Development Goals. As the world's leading supplier of high-tech polymer materials, we aim to make a significant contribution to mastering the greatest challenges of our time and finding suitable solutions.

Operational management

Our principles are anchored in internal Group policies. They provide concrete specifications on the important issues of value creation, sustainability, innovation, people, HSEQ and compliance. The six Group policies describe Covestro's goal of developing solutions that create added value for all stakeholders, promote sustainable development, drive innovation, motivate employees to implement our corporate vision, and create attractive jobs for talented employees. Moreover, we strive to continually improve our occupational safety and health, environmental performance, energy efficiency and quality activities while strictly adhering to all legal requirements as well as our more extensive voluntary commitments.



For more information, see section 2, sub-section "Company policies and voluntary commitments" in the GRI Supplement



See section 24
"Compliance"

Binding, Group-wide directives that support meeting HSEQ targets are accessible to all employees in an internal Group database. Compliance with these directives is verified during annual internal audits. In addition, issues and action plans as well as target achievement are monitored in a management review. Global and local operating procedures for the relevant processes implement the Group policies and directives at the operational level. Binding ethical and legal principles are anchored in our Corporate Compliance Policy (Directive). This policy includes important guidelines on fair and respectful working conditions and on fighting corruption. Covestro has implemented a reporting process so that employees can report potential compliance violations anonymously. The contents of the Corporate Compliance Policy are conveyed regularly through targeted communication measures and employee training sessions.

In addition to the intra-Group issues described above, social and societal matters are also of great significance to Covestro. We address our responsibility to society comprehensively through corporate citizenship, ongoing constructive dialog with authorities, neighbors and stakeholders and organizations interested in Covestro. To this end, we maintain constant contact with authorities, operate neighborhood offices and conduct regular plant tours. Donations, support programs and specific partnerships are further expressions of Covestro's active commitment to society.

The high standards of sustainability that we hold ourselves to also apply to our suppliers. We have developed a Code of Conduct that all suppliers must observe. This applies regardless of where they are headquartered, where they do business, or the scope or size of their respective services. Covestro⁵ is also a founding member of Together for Sustainability (TfS). The goal of this initiative is to standardize supplier assessments and audits worldwide while applying international standards.

Sustainability management and the integrated HSEQ management system are an integral part of all functions and positions in the Group. The Sustainability Community and the HSEQ Community are the central coordinating bodies and comprise members of the Board of Management and managers from the central sustainability and HSEQ functions. All segments and the regions in which Covestro operates (EMLA, NAFTA and APAC) are represented. They coordinate the relevant strategies and goals as well as update them on an ongoing basis. Committees are responsible for developing and setting goals and action plans. These in turn work closely with employees in key positions in the departments and business units which coordinate and monitor implementation.

⁵ Part of the Bayer Group when TfS was founded

Materiality matrix

The materiality analysis was updated in 2018. The following materiality matrix illustrates the result of the analysis.

Materiality Matrix 2018

Stakeholder relevance (external view)	Very high		<ul style="list-style-type: none">• Resource-efficient circular economy¹	<ul style="list-style-type: none">• Innovative solutions that contribute to the UN Sustainable Development Goals• Innovative solutions for addressing climate change (mitigation and adaption)• Product stewardship
	High		<ul style="list-style-type: none">• Business ethics, human rights and transparency• Sustainability in the supply chain	<ul style="list-style-type: none">• Occupational health and safety• Environmentally efficient operations
	Medium	<ul style="list-style-type: none">• Biobased plastics/resources²• Social engagement• Inclusive business• Political and social acceptance	<ul style="list-style-type: none">• Employer attractiveness	
		Medium	High	Very high
Relevance for Covestro (internal view)				

¹ Innovative products, business models, and process developments making circular material flows resource-efficient and economically viable, incl. biobased approaches

² Biobased alternatives to products produced from fossil resources without taking into consideration the associated changes in resource efficiency



For more information, see section 5, sub-section "Material sustainability issues" in the GRI Supplement

As part of the assessment of material topics, expectations and requirements of our key stakeholders were once again reviewed this year and considered accordingly in our sustainability program. Our external stakeholders evaluate the company not only in terms of financial and legal aspects but also with regard to behavior in line with sustainable and ethical principles. The stakeholders are our business partners, with whom we work closely on a daily basis; financial market participants, who judge our performance; regulators, with whom we discuss changes in our company and in the legal framework within which we operate; and societal stakeholders, whose acceptance and interest in the company is necessary for us. The materiality matrix visualizes the sustainability topics of key importance to Covestro and external stakeholders.



For more information, see section 5, sub-section "Stakeholder dialog" in the GRI Supplement

This year, some sustainability issues and their definitions were refined, e.g. by summarizing topics or separating out particular aspects. During this process, the topic of key importance "Innovative solutions for addressing climate change" was updated to include content from the topic "Adapting to climate change," and the title was changed accordingly. The titles of the key topics "Inclusive business" (previously: "Partnering for scalable solutions"), "Business ethics, human rights and transparency" (previously: "Business ethics and transparency"), "Sustainability in the supply chain" (previously: "Sustainable procurement"), and "Occupational health and safety" (previously: "Occupational health and safety in operations") were defined more precisely to better align them with the individual sub-topics they encompass. The topics "Biobased plastics/resources" and "Political and social acceptance" were added based on the results of external interviews and the in-house consultation with experts. Compared to the previous year, "Inclusive business" was classified as being somewhat less relevant. Going forward, the topics with high or very high relevance for Covestro and the stakeholders overall will become more important and will be more heavily integrated into our strategic and commercial business focus. These sustainability topics are also the basis for selecting the main aspects and indicators as required for the GRI core reporting.

Sustainability reporting

Our reporting is in accordance with recognized sustainability reporting standards. We report on fundamental topics and nonfinancial performance indicators pursuant to Section 315 (3) of the German Commercial Code (HGB) in our Group Management Report and supplement this information with additional content, which is additionally required in accordance with the GRI standards. Furthermore, as a member of the UN Global Compact, we submitted a corresponding progress report in May 2018.



For more information, see section 1 in the GRI Supplement

Nonfinancial Group statement

We publish the nonfinancial Group statement pursuant to Sections 315b and 315c in conjunction with Sections 289c through 289e HGB as an integrated part of the Group Management Report. The respective sections include the strategies we pursue in addressing environmental, labor and social issues as well as protecting human rights and fighting corruption and bribery, including the due diligence processes followed and measures implemented, as well as the outcomes of these strategies.

We applied the Global Reporting Initiative (GRI) standards as a framework for preparing the nonfinancial Group statement.

Topics relevant to the nonfinancial Group statement are identified on the basis of the results of the materiality matrix in an internal process and in consideration of their significance and implementation within the company. The following table provides an overview of the key sustainability topics with an eye to the relevant aspects and contains references to the specific sections in the Group Management Report.

In order to identify and address current developments and sustainability-related opportunities and risks at an early stage, we also review whether there are any new findings relevant to opportunity and risk management.

As an integral part of the Group Management Report, the Group's nonfinancial statement was audited with reasonable assurance by the auditor, KPMG AG Wirtschaftsprüfungsgesellschaft. The results provided by the external providers EcoVadis SAS and Together for Sustainability AISBL (TfS) were not subject to this audit.

Key Sustainability Topics of the Group's Nonfinancial Statement (HGB)

Key topics of the Group's nonfinancial statement (HGB)	Relevant aspects in accordance with the Group's nonfinancial statement (HGB)	Section reference in the Group Management Report
Innovative solutions that contribute to the UN Sustainable Development Goals	Environmental matters, social matters	"Innovation" section 3, "Integrated Management System for Occupational Health, Safety, Environmental Protection and Quality" section 7
Environmentally efficient operations	Environmental matters	"Environmental Protection" section 9, "Integrated Management System for Occupational Health, Safety, Environmental Protection and Quality" section 7
Occupational health and safety	Employee matters	"Safety" section 8, "Integrated Management System for Occupational Health, Safety, Environmental Protection and Quality" section 7
Employer attractiveness	Employee matters	"Employees" section 4
Product stewardship	Social matters	"Product Stewardship" section 10
Social engagement	Social matters	"Company-wide Sustainability Management" section 5
Inclusive business	Social matters	"Innovation" section 3
Sustainability in the supply chain	Respect for human rights	"Sustainability in Supplier Management" section 6, "Compliance" section 24
Business ethics, human rights and transparency	Fighting corruption and bribery, Respect for human rights	"Employees" section 4, "Sustainability in Supplier Management" section 6, "Opportunities and Risks Report" section 21, "Compliance" section 24



Stakeholder dialog

We work closely with our stakeholders in a collaborative manner. After all, they evaluate the company not only in terms of legal aspects, but also with regard to our adherence to sustainable and ethical principles. To identify crucial sustainability issues, we continually analyze the interests, expectations and requirements of our key stakeholders (materiality analysis) and incorporate them into our target program.

For more information, see section 5, sub-section "Stakeholder dialog" in the GRI Supplement

Covestro's Key Stakeholders

Partners	Financial market participants	Regulators	Social interest groups
Customers	Investors and creditors	Authorities	Media and the public
Suppliers	Rating agencies	Legislators	Neighboring communities
Employees	Analysts	Politicians and opinion leaders	Nongovernmental organizations
Associations			
Scientific community			

As a company, Covestro is part of society and public life. Continuous dialog with our stakeholders is therefore particularly important to us.

An open exchange is the foundation for mutual understanding and social acceptance of our entrepreneurial decisions. At the same time, these conversations provide us with new inspiration and crucial input. We therefore engage in an ongoing dialog with our stakeholders.

We maintain a regular exchange with authorities, ministries, politicians and important opinion leaders regarding regulatory matters at the local, regional, national and international levels because, in essence, these groups design the framework conditions within which our company operates. The dialog takes place by way of contributions to public consultations, involvement in specialized workshops, association activities and targeted meetings with political opinion leaders. Covestro has defined clear and binding rules for involvement in the political sphere in its code of conduct for responsible lobbying.

At our sites around the world, we pay close attention to the impact our activities have on the directly neighboring communities and on society in general and take this into account in making operational and strategic decisions. This includes an active, open and constructive dialog allowing Covestro to be recognized as a reliable and trustworthy partner that takes its social responsibility seriously.

The dialog with neighbors, the public and nongovernmental organizations (NGOs) is initiated on an ad hoc basis. In doing so, we adhere to national and local guidelines, often even exceeding them. In the case of investment projects, the neighboring community is actively informed and involved. In the United States, for instance, the dialog takes place through community advisory panels (CAPs). These panels meet regularly with local governments and/or neighborhood representatives to learn about current issues. In Germany, the Chempark neighborhood offices are used to communicate with neighbors. We engage in an active dialog with social interest groups particularly when new facilities are planned, built and commissioned.

Dialog with our partners is very important to us. You will find additional information on our ongoing dialog with customers, suppliers, employees, industry associations and scientific institutions in sections "1. Group Structure and Business Model," "3. Innovation," "4. Employees" and "6. Sustainability in Supplier Management."

We also conduct intensive dialog with capital markets. You can also read more about this topic in section 22 "Declaration on Corporate Governance" in the Group Management Report.

Social engagement

As a global enterprise, we are aware of our social responsibility. We demonstrate responsibility for our decisions and our actions, for our products and services, toward our customers and investors, and toward the environment and the society in which we live. We are committed to compliance with all applicable tax laws. Furthermore, we feel committed to the principle that, in each case, our tax payments in all of the countries where we operate are in line with the value we create there. We also want to increase access to education, technology and a better life. In doing so, we are using our social engagement as a catalyst to rapidly reach the UN Sustainable Development Goals, which aspire to create a world characterized by greater justice, resilience and well-being for humans and the planet by 2030. As one of the world's largest polymer companies, Covestro would like to use its position to work with different organizations in numerous regions in the world to advance projects for protecting the environment, improving the welfare of society and stimulating the economy. To achieve this, a central unit in the company supports Group-wide efforts to plan and implement cooperative efforts with partners and award donations in order to work toward reaching the UN sustainability goals. Donations are allocated on the basis of an annual financial planning that is approved by the Board of Management and implemented in accordance with a Group directive.



6. Sustainability in Supplier Management

For more information,
see section 6 in the
GRI Supplement

Covestro regards adherence to sustainability standards within the supply chain as a crucial factor in value creation and also an important lever for minimizing risks. For this reason, Covestro sets not only economic standards but also social, ethical and ecological standards, as well as those related to corporate responsibility when selecting new suppliers and in our relationships with existing suppliers. These standards are defined in Covestro's Supplier Code of Conduct, which is available online in 13 languages and provides the basis for collaboration. The Code is derived from the principles of the UN Global Compact and our position on human rights. It is integrated across the Covestro Group into the electronic ordering systems and contracts. Furthermore, relevant new and renewed supply agreements generally contain special clauses requesting suppliers to observe the sustainability requirements contained in the Code of Conduct and entitling Covestro to monitor their compliance.

Covestro has set ambitious and measurable targets through 2025 aimed at systematically promoting sustainability in supplier management. All suppliers must agree to comply with our Code of Conduct by accepting our contracts and orders. Suppliers accounting for a repeat purchasing value exceeding €100,000 per year are also assessed and must comply with Covestro's sustainability standards by means of meeting the minimum requirements as defined by us in the supplier assessments described below. In the year under review, around 95% of our total purchasing value was attributable to these suppliers. We work closely with our strategically most important suppliers to improve their sustainability performance. We have also incorporated this into our sustainability goals.

Evaluation methods and processes of the TfS initiative

Covestro is a member of Together for Sustainability AISBL (TfS), a joint initiative undertaken by the chemical industry that now numbers 22 companies. The nonprofit organization founded in 2011 pursues the goal of establishing a program of global standards for responsibly sourcing goods and services and standardizing supplier evaluation methods worldwide. Covestro supports all TfS criteria concerning the areas of ethics, employee rights, human rights, health and safety, and the environment.

As a member of TfS, Covestro is responsible for monitoring and auditing the sustainability performance of its suppliers. To support this, TfS offers the infrastructure for supplier assessments by third parties using online assessments and on-site audits. The TfS infrastructure enables the results of these assessments to be distributed via an online platform. In the year under review, Covestro played an active role in all TfS work groups in designing and improving the TfS program and the associated evaluation process.

Covestro uses the standardized TfS assessment process to audit how well its suppliers maintain the sustainability standards required by Covestro. Covestro uses a structured prioritization process to select the suppliers to be audited and initiates either an online assessment or an on-site audit for the selected suppliers – provided that there are no current results. In prioritizing the suppliers for these assessments, Covestro considers a combination of country and material risks as well as strategic importance in accordance with Group targets. The risk assessment for country and material groups that we use for our risk analysis is based on recognized external sources.

EcoVadis SAS (EcoVadis), an established external provider accredited by TfS, conducts the online assessments. The goal is to assess the suppliers' business practices in regard to their sustainable orientation (Corporate Social Responsibility, or CSR). The questionnaire suppliers complete for the online assessment is based on internationally recognized sustainability standards and includes 21 sustainability criteria grouped into the categories environmental protection, working conditions and human rights, fair business practices and sustainable procurement. The questionnaire's section on sustainable procurement also inquires as to the extent to which the sustainability standards of upstream suppliers are considered.

This questionnaire is dynamically adapted by EcoVadis depending on factors such as the industrial sector, company size and country risk. Suppliers must document the responses provided to the questionnaire by submitting corresponding supporting documents. The CSR analysts at EcoVadis assess supplier responses and supporting documents in consideration of international standards, such as the United Nations Global Compact, and consolidate the data into a scorecard available online that shows results by category. This scorecard provides an overview of identified strengths and improvement areas for the suppliers analyzed, among other details.

External, independent auditors trained and accredited by TfS conduct on-site audits of selected companies – and follow-up audits, if needed – based on the TfS sustainability criteria. For the purpose of monitoring the quality of the audits, the initiating TfS member periodically takes part in audits selected on a random basis and evaluates them using a standardized checklist.

Covestro analyzes and documents the online assessments and on-site audits of our suppliers, and – in the event of noncompliance with our sustainability requirements – jointly defines with suppliers specific improvement measures and corresponding targets. Covestro continuously verifies the implementation of the required improvements.

The following table shows the status of the supplier assessments.

Key Data from the Sustainability Assessments of our Suppliers

	2017	2018
Share of relevant purchasing value from suppliers meeting Covestro's sustainability criteria^{1,2}	71%	80%
Supplier assessments conducted in the reporting year²	719	736
of which through online assessments	690	712
of which through on-site audits	29	24
Total supplier assessments conducted²	1,349	1,584
of which through online assessments	1,215	1,400
of which through on-site audits	134	184
Supplier assessments meeting Covestro's sustainability requirements	870	1,074

¹ Only suppliers accounting for a repeat purchasing value exceeding €100,000 per year are taken into account.

² Online assessments (conducted by external, independent, TFS-accredited provider EcoVadis) and on-site audits (conducted by external, independent TFS-accredited auditors) of Covestro's suppliers, both initiated by Covestro and shared within the TFS initiative, are taken into account. Only assessments of our active suppliers that are no more than three years old are taken into account.

Results of online assessments and on-site audits

At the end of 2018, 80% (previous year: 71%) of our relevant purchasing value was attributable to suppliers whose externally conducted assessments meet our sustainability requirements. Covestro thus exceeded its own intermediate goal of 75%. Furthermore, 75% of our strategically most important suppliers who conducted a repeat assessment in 2018 have improved their results.

In 2018, assessment results considered critical by Covestro were identified for eleven suppliers; in other words, they failed to meet the required minimum result by a significant margin. This corresponds to 1% of all suppliers assessed (previous year: 2%). Covestro responds to such infractions with specific action plans and demands that the suppliers in question implement appropriate corrective measures; follow-up audits are conducted to verify compliance.

As in the previous year, Covestro had no cause to terminate a supplier relationship in the reporting year because the assessment revealed an unsatisfactory performance, or a serious sustainability deficit, e.g. human rights violations like child labor or forced labor.

Training measures and dialog on the issue of sustainability

Covestro maintains an ongoing dialog with its suppliers and supports its procurement specialists in implementing the sustainability requirements by providing Group-wide training. Last year, workshops were held worldwide with our strategic procurement specialists aimed at strengthening cooperation with suppliers in regard to the four strategic principles in Procurement: reliability, sustainability, cost transformation and innovation. Further progress was made on implementing the four strategic principles in 2018. Regional Program Managers were posted in each of the EMLA, NAFTA and APAC regions to promote the establishment and optimization of our sustainability program during the reporting year.

Dialog and close collaboration are essential in enabling suppliers to successfully comply with Covestro's sustainability requirements. We therefore offer a range of training and dialog opportunities for them as the basis for building reliable relationships that enable us to identify and eliminate any obstacles to collaboration at an early stage.

7. Integrated Management System for Occupational Health, Safety, Environmental Protection and Quality



For more information, see section 2, subsection "Company policies and voluntary commitments" in the GRI Supplement

Covestro's stated aims are to take preventive measures to protect employees, suppliers and service providers, ensure uninterrupted operations and continually improve quality. The integrated management system implemented throughout the Group pertains to the topics of health, safety, environment and quality (HSEQ). The head of the integrated HSEQ management system is commissioned by the Board of Management. The integrated management system ensures implementation of the specifications of the HSEQ Group guidelines based on internationally recognized standards governing occupational safety (OHSAS 18001), the environment (ISO 14001), energy (ISO 50001) and quality (ISO 9001). Adherence to processes and workflows is regularly verified through internal audits, annual self-assessments and external certifications. The insights we gain from these measures are incorporated into our annual management assessment. Every process is thus subject to ongoing monitoring and is updated as required. Our existing HSEQ management system corresponds to the requirements of the current ISO 9001:2015 and ISO 14001:2015 standards and was also successfully certified in 2018 based on the new ISO standards. Specific targets in line with the aforementioned ISO standards have been defined.

The integrated management system comprises the following subsections:

Occupational health and safety

In the area of occupational health and safety, globally applicable processes include detailed rules governing the safety of production facilities and manufacturing processes, the investigation of accidents and environmental and transportation incidents, health screening and occupational safety, and emergency management at Covestro. The rules stipulated by international standards such as OHSAS 18001 comprise the minimum requirements applicable worldwide and are supplemented with additional regulations as needed. This is intended to prevent accidents and incidents during day-to-day business as well as during transportation that could affect people or the environment. We also offer support to our customers, for example by providing training on the safe handling of our products in and outside of our facilities.

Environment and energy

In the areas of environment and energy, global minimum standards were specified in the form of rules and regulations similar to internationally recognized standards and rules such as ISO 14001 (environmental management) and ISO 50001 (energy management) to ensure that we satisfy our ambitious expectations of resource efficiency and emission reductions. Each year we analyze and evaluate the effects of our activities on the environment. From our environmental performance assessment, we derive measures to reduce and minimize environmental impacts. Global process and workflow descriptions help us implement these throughout the Group. In the year under review, the energy efficiency system we introduced in 2008 was recertified to ISO 50001 for the seventh time at the main German production sites.

Quality

We have very high expectations when it comes to the quality of the raw materials we use, and set standards for their processing into high-tech plastics and polyurethane precursors. Within the framework of our integrated HSEQ management system, our quality management meets the requirements of the current, newly revised standard ISO 9001:2015. In doing so, we are creating the underlying conditions for addressing the customers' needs to a large degree with regard to our products and services.

8. Safety

The continuous improvement of a safe work environment is both a high priority and a key component of Covestro's corporate responsibility and corporate culture. Our primary goals include preventing injuries, disruptions at plants and accidents during transportation, as well as safeguarding the health of all employees in the workplace and during work-related activities. This also applies to third-party employees (contractors) who work for our company within the scope of operational activities. Detailed rules and regular checks are instrumental in meeting these goals, as are safe production processes, plants and transportation. There is an equal focus on protecting the environment and the well-being of everyone who comes into contact with our products. In addition, we developed and launched the SafeGuard program, which allows us to address all aspects of safety of importance to Covestro in a comprehensive and global manner. Please continue reading for details on SafeGuard.



For more information, see section 8 in the GRI Supplement

Occupational health and safety

A harmonized reporting system implemented throughout the Group exists for reporting and processing work accidents and potential hazards. The classification complies with U.S. OSHA standard 1904 "Recording and Reporting Occupational Injuries and Illness". After an accident is reported to the plant or site officer, the data is then consolidated in the Integrated Information Management System (IIMS), a software application developed by Covestro. IIMS makes it possible to identify both positive and negative developments and trends in the area of safety in real time so that corresponding short-term corrective and long-term improvement measures can be implemented if necessary. Covestro's safety experts, supported by external expertise if needed, analyze the background circumstances and the consequences of an incident. The results of the cause analysis conducted after an incident occurs and the corrective measures taken are published throughout the Group in order to raise employees' safety awareness; as a result, everybody can better assess comparable hazards and situations as well as proactively remedy them.

Covestro processes workplace accidents involving the company's own staff and contractors as part of the recordable incident rate (RIR) and lost time recordable incident rate (LTRIR), as per OSHA 1904. This statistic measures the number of accidents per hours worked (standard of 200,000 hours per year). It takes into account all work accidents with injuries requiring medical treatment beyond first-aid measures.

Work-related Accidents

	2017	2018
Lost time recordable incident rate (LTRIR ^{1,2})		
in relation to Covestro employees ³	0.25	0.20
in relation to contractor employees ⁴	0.23	0.10
Recordable incident rate (RIR ⁵)		
in relation to Covestro employees ³	0.35	0.38
in relation to contractor employees ⁴	0.43	0.24
Fatal injuries (total)	0	0
of which Covestro employees	0	0
of which contractor employees	0	0

¹ LTRIR (Lost time recordable incident rate): Number of workplace accidents resulting in at least one day of lost time per 200,000 working hours annually

² The LTRIR for contractor employees in the previous year was amended due to the subsequent change of a recordable workplace accident in 2017 to a workplace accident resulting in at least one day of lost time.

³ The number of hours worked was calculated by multiplying the average number of employees for the year by average values determined using OECD statistics and other figures. The number of underlying working hours was retroactively adjusted for fiscal 2017.

⁴ Employees of external companies contracted by Covestro whose accidents occurred on our company premises. Due to more stringent requirements for the validation of hours worked, the data for hours worked by external company employees on Covestro premises in 2018 refer exclusively to sites whose time reports already satisfy these requirements. The key data reported for contractor employees in 2018 are maximum values that are only comparable to the 2017 values to a limited extent.

⁵ RIR (Recordable incident rate): Number of workplace accidents per 200,000 working hours annually

We continuously work to keep the accident figures as low as possible in the future as well. In recent years, for example, we have developed a comprehensive concept of measures to prevent accidents by employees of external companies. Through special safety programs for contractor employees and the consistent inclusion of outside companies in ongoing safety activities at our sites, we have helped to ensure that the number of accidents involving contractor employees has declined significantly. In recent years we have reached a year-on-year safety plateau with our own employees. In other words, the accident figures show only minor positive or negative changes. We began developing a program in 2018 with an eye to breaking through this plateau and ushering in a long-term positive trend. This program intends to reduce the incidence of errors and improve the consistency of decision-making in crisis situations. By implementing the SafeGuard program, we expect to generate further momentum that will help to raise the safety level and consequently register fewer accidents. To this end, Covestro is currently defining 24 focal points and developing corresponding, discipline-specific solutions.

Since 2016, we have analyzed all near-misses for their potential risk of a serious accident. We expanded this procedure in 2018 to include all other types of events, which we evaluate according to a defined set of criteria with regard to an event's potential which, under other circumstances, could have led to a High Potential Event (HPE). Events classified as HPEs are thus treated as events that have actually occurred; they require a detailed cause analysis and must be communicated. The analysis of the data in 2018 resulted in the same priority activities that had already been identified in 2017. The priorities concern protecting employees' hands at work and human-machine interaction. Promoting safety awareness among employees is essential for minimizing hazards during day-to-day operations. In 2018, Covestro celebrated an anniversary, awarding the CEO Safety Award for the tenth time. All employees were once again called upon to submit suggestions for improving safety and to apply for the annual internal CEO Safety Award. All of the ideas were evaluated by a jury of in-house participants; the Chair of the Covestro Board of Management, Dr. Markus Steilemann, presented awards to the winners.

Process and plant safety

We aim to ensure the safety of our processes and plants in a way that avoids unacceptable risks to our employees, our neighbors and the environment. We conduct extensive, systematic safety inspections at regular intervals. A globally standardized KPI, Loss of Primary Containment (LoPC), applies to all Covestro plants and is an early indicator integrated into Group-wide safety reporting. LoPC refers to, for example, chemicals in amounts above defined thresholds leaking from their primary containers, such as pipelines, pumps, tanks or drums. We use the LoPC Incident Rate (LoPC-IR) to determine the number of LoPC incidents per 200,000 working hours per year in areas relevant to plant safety. The continuous improvement in plant safety at Covestro is also reflected in the decline in the LoPC rate compared with the previous year.

Plant Safety Incidents

	2017	2018
LoPC IR ^{1,2}	0.52	0.35

¹ LoPC IR (Loss of primary containment incident rate): Number of plant incidents per 200,000 working hours annually

² The number of hours worked was calculated by multiplying the average number of employees for the year by average values determined using OECD statistics and other figures. The number of underlying working hours was retroactively adjusted for fiscal 2017.

Every LoPC incident as well as minor and near-miss incidents are carefully analyzed to determine their causes, and the results and corrective actions taken are publicized throughout the Group. The criteria (e.g. very low threshold or nonhazardous substance releases) were selected so that even releases of substances or energy that have no impact on employees, neighbors or the environment are systematically recorded. This contributes to maintaining the integrity of our facilities. The findings of last year's analyses were evaluated in a company-wide program called SafeGuard, and a Group-wide initiative was launched focusing on "Development of the organization and qualifications," "Process and plant safety," "Technological standardization" and "Process control technology and process analysis technology." The global exchange of experiences relevant to safety and the definition of globally binding standard processes and their uniform implementation are intended to help maintain the existing high standard of procedural and plant safety within the company.

Environmental and transportation incidents

Side by side with continuous improvement of process and plant safety and safety in the workplace, we are constantly working on making the transportation of our products safer. We report all incidents at all sites operated by Covestro worldwide in line with our internal directives. These are documented according to defined criteria such as quantity of loss of containment, material hazard class, degree of personal injury and blocked transportation routes. In the case of hazardous materials, we voluntarily record and categorize all leaks starting with as little as 50 kilograms. In addition to numerous regional monitoring activities, a gap analysis was conducted in 2018 to verify compliance with the rules of the Group-wide guideline entitled Transport and Logistics Safety. Corresponding corrective measures were derived from the findings and implemented.

9. Environmental Protection

Environmental protection and the efficient use of resources are fundamental drivers for Covestro's actions, both in terms of our own business activities and the development of innovative product solutions. We continually strive to use materials and energy more efficiently and to reduce emissions and waste generated. Our innovative products also support the efforts of our customers in many industries such as the automotive, construction and electronics sectors, as well as the furniture, sports and textile industries, to improve their own resource efficiency and cut emissions.



For more information, see section 9 in the GRI Supplement

Energy consumption

Covestro's energy consumption includes the primary energy used in production and during electricity and steam generation by the company as well as the purchase of additional electricity, steam and refrigeration energy and the use of process heat. It also comprises the energy lost during the generation and distribution of electricity and steam. All told, these figures make up Covestro's equivalent primary energy consumption.

The use of energy and materials and the level of greenhouse gases emitted are closely related to the quantity of materials we produce. In 2018, total energy consumption in the Group decreased by 1.8% while equivalent primary energy consumption grew slightly by 0.5%, with a slight decrease of 0.7% in production volumes. As a result, the equivalent primary energy consumption for a given production volume (energy efficiency) deteriorated by 1.2%. Our long-term positive trend indicating an overall 35.7% improvement in energy efficiency compared to the base year 2005 is attributable to factors including our ongoing efficiency improvement programs and the global energy efficiency system observed by Covestro.

Energy Consumption in the Covestro Group

	2017	2018
Equivalent primary energy consumption ¹ (in TJ)	75,202	75,553
Production volume ² (in million metric tons)	14.97	14.87
Specific energy consumption (energy efficiency)³ (in MWh per metric ton)	1.40	1.41

¹ Sum of all individual energy figures translated into primary energy at our main production sites, which account for more than 95% of our energy consumption

² Sum of the in-spec key products, which in addition to our core products also include products such as precursors and by-products, at our main production sites, which account for more than 95% of our energy consumption

³ Quotient of equivalent primary energy and in-spec production volume at our main production sites

In addition to the successful implementation of energy efficiency measures, a series of energy-related improvements at our production site in Caojing, China, is of particular note. Examples include the use of process-related waste heat and optimized processes that reduce steam requirements.



For more information, see section 9 in the GRI Supplement

Covestro currently plans to build a chlorine production plant at its Spanish site in Tarragona, where it will use a particularly energy-efficient manufacturing process. The plant intends to use what is known as oxygen-depolarized cathode technology, which consumes around one-quarter less energy than the conventional process. In Tarragona, Covestro is building the first industrial-scale plant to operate solely on the basis of this state-of-the-art technology.

Greenhouse gas emissions

Along with governments, nongovernmental organizations and other private-sector companies, Covestro supports implementation of the results of the 21st UN Climate Change Conference, which took place in Paris at the end of 2015, and is committed to the UN Sustainable Development Goals (SDGs).

Covestro calculates greenhouse gas emissions according to the internationally recognized standards of the Greenhouse Gas Protocol (GHG Protocol). The calculations include both direct emissions from the burning of fossil fuels and indirect emissions from the procurement and consumption of energy generated outside the company such as electricity, heating or refrigeration energy. In addition to CO₂, all other relevant greenhouse gases are also documented. The emissions factors for the calculation of CO₂ equivalents for the global warming potential were taken from the 1995 IPCC Assessment Report.

In 2018, these specific emissions totaled 0.4342 metric tons of CO₂ equivalents per metric ton of product (previous year: 0.4064). This corresponds to a cumulative drop of 40.0% compared with the base year 2005, while an increase of 6.8% compared to the previous year was recorded. In 2018 we transitioned to calculating emissions based on the market-based method of the current GHG Protocol. The prior-year figures were recalculated to enable comparison based on consistent methodology. The cumulative change until 2017 is calculated using the method established in the GHG Protocol until 2014. The 2018 figure is calculated using the market-based method of the current GHG Protocol.

Covestro Group Greenhouse Gas Emissions¹

	2017	2018
Specific greenhouse gas emissions (metric tons of CO ₂ equivalents per metric ton of production volume ²)	0.4064 ³	0.4342

¹ Portfolio-adjusted based on the GHG Protocol; financial control approach; global warming potential (GWP) factors correspond to the "IPCC 2nd Assessment Report"

² Total greenhouse gas emissions (Scope 1 and 2, GHG Protocol) at the main production sites, which are responsible for more than 95% of our energy consumption (total of 6.5 million metric tons of CO₂ equivalents in 2018) divided by the in-spec production volumes for key products. Market-based emissions factors were mostly used when calculating specific Scope 2 greenhouse gas emissions; wherever these were not available, calculation was based on country-specific emissions factors from a generally accepted source (e.g. International Energy Agency (IEA)).

³ Prior year figures adjusted due to the conversion to market-based emissions method in accordance with the current GHG Protocol. The indirect emissions were calculated partially on the basis of the IEA data from the IEA Emission factors 2018 © 2019 IEA Online Data Services, www.iea.org/statistics. The greenhouse gas emissions calculated are based in part on estimates such as the previous year's data.

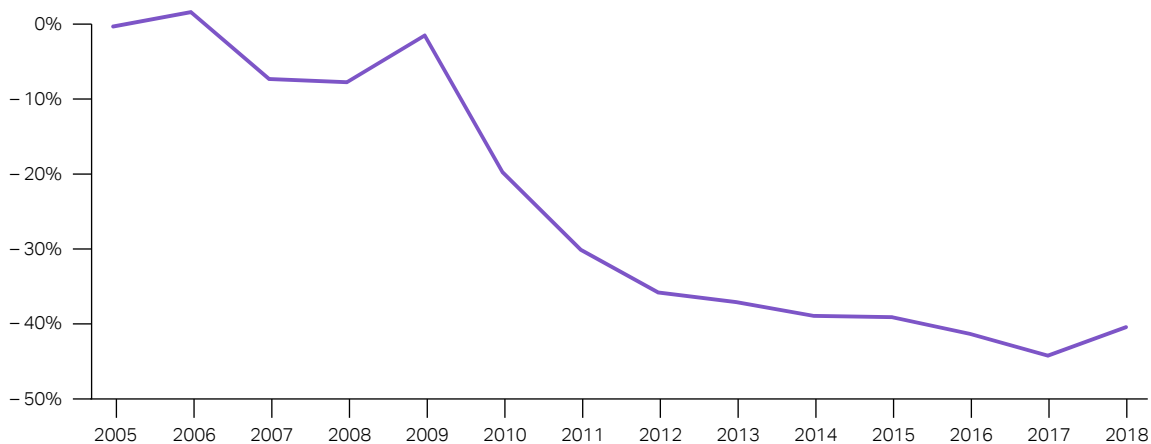


See section 5
"Company-wide
Sustainability
Management"

The main cause of the increase was unfavorable developments in the energy mix for the generation of steam and electricity at several of our large sites in Germany and the United States. This necessitates redoubled efforts in coming years to reach our target of cutting our greenhouse gas emissions in half by 2025.

Development of Specific Greenhouse Gas Emissions

(Cumulative annual change in the specific greenhouse gas emissions per metric ton of product manufactured, compared with the base year 2005 – expressed in percent¹)



¹ The calculation methods for the fiscal year 2018 were changed to the current market-based method, in accordance with the Scope 2 Guidance of the GHG Protocol. Values recognized from 2005 to 2017 are calculated throughout in accordance with the methods established in the GHG Protocol and which were in effect until 2014. When calculating changes in percentage points from 2017 to 2018, the value for 2017 was recalculated on the basis of the market-based method, for comparability purposes.

Moreover, Covestro develops products whose manufacture results in lower CO₂ emissions than those of conventional products – by using CO₂ as a raw material, for instance. To this end, the company began marketing an innovative binder for which a key component is produced using as much as 20% CO₂. In this way, the same quantity of petrochemical raw materials is saved and the CO₂ footprint improves.

Water, effluents and waste

Covestro takes a holistic view of water as a resource. We not only take our water consumption and the related problems of water scarcity and water quality into consideration but also the wastewater we generate and the growing concern of plastic waste in the oceans.

As part of this, we initiated a risk assessment of our production sites to examine water availability, quality and accessibility. In our production activities, we strive to use water several times and to recycle it. Covestro primarily generates wastewater from once-through cooling systems and production. All wastewater is subject to strict monitoring and analysis according to the applicable legal regulations before it is discharged into disposal channels.

For economic considerations alone, Covestro's manufacturing processes are already as efficient as possible when it comes to the use of materials, so only relatively little waste is produced as a result. Ongoing observation and evaluation of the manufacturing processes additionally minimize material consumption and disposal volumes as much as possible. This is achieved by safe disposal channels with separation according to the type of waste

and economically expedient recycling processes. Production fluctuations, building demolition and refurbishment, and land remediation also influence waste volumes and recycling paths. Accordingly, the volume of hazardous waste generated was reduced, whereas the total waste volume produced (hazardous and nonhazardous) in 2018 increased significantly. This was primarily due to the higher volume of construction waste resulting from the construction of the new administrative building at the Leverkusen site. Targeted projects are in place to determine specific opportunities for waste reduction and put these into practice within the context of our existing manufacturing processes. For instance, a new procedure is currently being tested in the manufacturing process for our bulk product toluene diisocyanate (TDI), which serves to significantly reduce the resulting process waste volumes. After its successful implementation, the findings can subsequently be transferred to additional plants at other Covestro sites.

Covestro also supports the reuse and treatment of its materials in accordance with economic and environmental criteria. Some of the waste created by our production processes with a high heating value is burned as fuel to generate steam for our production facilities.

Our commitment to the topic of sustainability plays an increasingly vital role with regard to the purchasing of packaging materials. The responsible unit has implemented measures to address this, including establishing a new procedure in the packaging procurement process. This allows Covestro to now review whether and to what extent used or reconditioned packaging can be used in the place of new packaging. For instance, Covestro uses PCR (post consumer regrind) plastic barrels for waste transportation. Drums made of recycled polyethylene (PE) replace PE drums from newly produced material. Thus, Covestro uses fewer raw materials, reduces emissions and has established the initial building blocks for a circular economy in the area of transport and packaging.

Covestro supports initiatives such as Operation Clean Sweep® (OCS), which focus on preventing plastic particles from entering waterways and oceans. We have introduced global measures to minimize as best as possible the loss of plastic pellets on the way from production to the finished product at our customers' locations. In 2018, we once again urged our partners in the supply chain to join the initiative, while at the same time continually monitoring our own progress. In 2019, we would like to further strengthen our commitment to the OCS initiative and provide additional encouragement to our supply chain partners.



10. Product Stewardship

For more information,
see section 10 in
the GRI Supplement

Product stewardship for Covestro means the comprehensive evaluation of health, safety and environmental risks. We want to ensure that our products are safe throughout their entire life cycle – from research, production, marketing and use by the customer through to disposal.

Monitoring the quality of our products and their suitability for particular applications is anchored in the operational units. Safe transportation, training for specifically regulated applications and marketability are centrally managed at Covestro. The obligation to report to the Board of Management is also allocated to these central offices.

The safe use and application of our products has high priority. It is therefore important to convey product safety information transparently and comprehensively. In addition to the legally required documentation, we also provide further information. What's more, we offer corresponding training in line with the Global Product Strategy of the International Council of Chemical Associations (ICCA). Furthermore, experts in all areas of the company work closely with suppliers, customers, industry associations and the public. Covestro aims to ensure the effective communication and observance of health, safety and environmental information along the supply chain.

Management of product stewardship

Product stewardship involves both compliance with statutory requirements and voluntary commitment. Here we also take into account the precautionary principle as explained in Principle 15 of the Rio Declaration of the United Nations and communication COM(2000) 1 of the European Commission.

The precautionary principle is an important means of protecting consumers and the environment within the context of risk management. It may be applicable if, according to an objective and comprehensive scientific evaluation, material or irreversible harm to people and the environment may occur, but the risk of this cannot be established with sufficient certainty. In this, we follow the general principles of the European Commission for application of the precautionary principle. These include especially the proportionality of the measures taken, examination of the benefits and costs of all relevant options, and review of the measures taken in light of new scientific developments.

In particular, arbitrary decisions cannot be justified by invoking the precautionary principle.

As a contribution to the safe handling and use of chemicals, risk assessments are carried out applying recognized scientific principles such as those described by the European Chemicals Agency (ECHA) in its Guidance on Information Requirements and Chemical Safety Assessment. A determination is made based on a hazard assessment and exposure estimation as to which additional information is required for the risk characterization of a product.

A product safety assessment at Covestro takes place in several steps. First, we identify chemicals that are subject to statutory regulations and document the corresponding regulation. We then examine the risk potential of our products.

Should the assessment or new findings reveal that it is not safe to use a certain chemical, we take the necessary steps to mitigate risks. Such steps can range from technical measures such as protective gear and revised application recommendations to the withdrawal of support for a certain application and substitution of a substance. In this case, an adequate replacement must be sought which can be produced in a technically and economically feasible way.

Finally, we produce the legally required material safety data sheets, technical information sheets and labeling for the chemicals. We also compile these documents for chemicals that are not subject to this legal obligation, whereby we go beyond the statutory requirements. All product groups undergo this process.

All information about the safe and compliant use of our products is documented and analyzed, and thus provides a jumping-off point for further improvements. This includes product monitoring and reporting on product-related and compliance incidents. Our global regulations contain rules and guidance on when and how this information is to be used.

Fundamentally, the optimization of products and processes is an ongoing task of the chemical industry and is integral to our commitments as part of the Responsible Care initiative. We also participate in the further development of scientific risk assessments through our involvement in associations and initiatives.

International associations such as the European Chemical Industry Council (CEFIC) and the International Council of Chemical Associations (ICCA) are working to improve the scientific assessment of chemicals and research new testing methods. Moreover, they monitor implementation of legal regulations. Covestro is actively involved in industry association activities. We also endorse the initiatives of the World Health Organization (WHO) and the EU to improve health and the environment, for example with the further development of human biomonitoring through an alliance with the German Chemical Industry Association (Verband der Chemischen Industrie, VCI) and the German Federal Ministry of the Environment.

Implementation of regulations and voluntary programs pertaining to chemicals

Covestro adheres to the applicable regulations pertaining to chemicals, such as the regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) in Europe and the Toxic Substances Control Act (TSCA) in the United States. These regulations are aimed at protecting human health and the environment from the risks posed by chemicals and shape our activities as a manufacturer, importer and user of chemicals. We have established internal regulations to adequately address the scope and complexity of the relevant requirements.

Substances registered according to REACH are assessed by regulators. This can result, for example, in additional testing requirements, new risk management measures, or inclusion in the REACH authorization procedure. A number of Covestro substances are also affected by this procedure, which restricts the use of particularly hazardous substances or can lead to their replacement or prohibition. The planned restriction on diisocyanates currently being discussed in EU committees is one example of a potential restriction. Although diisocyanates will still be available on the market, their use in the workplace will require specific training and the implementation of (risk) management measures in the future. Following a special examination of diisocyanate applications, it is possible to be excluded from this restriction. Covestro supports this measure and advocates a practical and effective arrangement, for example regarding the preparation of training materials.

Covestro continues to pursue the goal of completing the assessment of the hazard potential for all substances used around the world in quantities exceeding one metric ton per annum by 2020. We thus exceed statutory requirements. In addition, we ensure that substance assessments comparable to those meeting the high standards of REACH or the TSCA will also be applied at Covestro sites that are not subject to these regulations. The relevant procedure is established in the Group Regulation "Product Stewardship" in the annex entitled "Substance Information and Availability." In accordance with the European guideline on the classification and labeling substances (CLP Regulation), we revised our assessment procedure last year and added new endpoints of particular relevance for the application of Covestro products. This results in a temporarily lower assessment rate; however, actively addressing the matter will ultimately allow us to further improve our substance information availability in the long term. When it comes to purchased substances, we are dependent on information provided by our suppliers. In this regard, however, we expect that the availability of data will also continue to be limited in the future, particularly outside of the EU.

Another example of our commitment to Responsible Care is the worldwide support we provide for customers for safely handling large quantities of reactive products through tank-farm safety assessments.

We support the Global Product Strategy (GPS), a voluntary commitment by the chemical industry initiated by the ICCA. Its objective is to improve knowledge about chemical products, especially in emerging and developing countries, and thus increase safety in the handling of these products. The ICCA has established an information portal through which summarized details on products are made available. GPS is accessible at Covestro through the Product Safety First internet portal and is available worldwide. On this website, we inform customers and other interest groups about safety-relevant properties and the safe handling of our products.

Substances that are the subject of public debate

Covestro is following the scientific discussion about the chemical bisphenol A (BPA), a main feedstock for various plastics. Critics, but also some authorities, are concerned that risks could result for users and the environment if traces of BPA are released from products. At this time, these concerns are primarily being addressed under the European chemical regulation REACH.

Based on numerous scientifically valid and high-quality studies, Covestro is confident that BPA can be safely used in its intended areas of application. In the case of food safety, for example, this is supported by the latest evaluations from the responsible European and American authorities, namely the European Food Safety Authority (EFSA) and Food and Drug Administration (FDA). Reflecting this conviction, Covestro is actively working within the framework of regulatory processes to dispel uncertainties and answer open questions.

We continue working to make the discussion more objective based on all of the scientific data and in cooperation with the PlasticsEurope association, the American Chemistry Council (ACC) and the China Petroleum and Chemical Industry Federation (CPCIF). Covestro is involved in the debate, providing information to customers and the public through associations and the Covestro website.