



Sustainability report 2021
factbook



BOSCH

Editorial

Dear Readers,

The year 2021 was a challenging one in many respects. I am therefore all the more pleased that Bosch continues to make good progress on its path to sustainability – as we pursue climate action and the sustainable design of our supply chains, close commodities and materials loops, and also promote diversity, equity and inclusion.

All of this has been possible at Bosch because we see sustainability as a task we must all tackle together. At each of our more than 400 locations worldwide, division coordinators are working with their local colleagues

to optimize Bosch's use of energy and materials. Our teams of software engineers are writing code that will improve how we manage energy and natural resources.

Sustainability is already today an integral part of our corporate culture, which has made Bosch a successful and high-performing organization for

over 100 years – among our competitors, as an employer of choice, and as a partner in society. There are many examples in Bosch's history that demonstrate the power of this culture. Combining the creativity of individuals with the innovative strength of many enables the creation of future-proof solutions – for the environment and society, for people today, and for future generations.

We want to leverage this power. In the coming years, we will therefore not only continue to systematically implement our sustainability strategy but also involve the people in the company even more than before. Because it is their behavior that shapes our culture – it is their knowledge, dedication, and creativity that moves Bosch forward. In a nutshell, it is the people at Bosch who turn abstract goals into measurable achievements.

To activate this potential, we provide targeted impetus – from the company-wide Sustainability and EHS Award, which we have been using for many years to honor the sustainability performance of teams at our company locations, to the Green Heroes campaign, which encourages associates to make a personal contribution toward greater sustainability. Worldwide, this gave rise to a wide range of activities in 2021, most of which met with an overwhelming response within the company. Colleagues at Bosch want to get involved and make their contribution to shaping the company – and thus their own personal future – in a sustainable way that makes life worth living.

All this makes me more than optimistic as I look ahead to our goals and challenges in the coming years. This is true not least with respect to the tightening legal requirements and regulations, among them the Act on Corporate Due Diligence Obligations in Supply Chains in Germany or the regulations on taxonomy and sustainability reporting at EU level. Policymakers are sending an unmistakable message: companies are called on to play their part for greater sustainability.

Our factbook shows: Bosch is already playing its part today! It illustrates what we accomplished in detail in 2021 and what goals we have set ourselves for the coming years. It makes Bosch's path transparent and paints a comprehensive picture of our commitment. And it gives an impression of what more than 400,000 people can achieve when they set their minds to shaping the future. I am very pleased at your interest in our company's activities!

Yours sincerely,



Filiz Albrecht

Member of the board of management
and director of industrial relations

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Foreword

by the board of management



Dear Readers,

As this sustainability report is published, the war in Ukraine is casting a long shadow over our lives. We are deeply distressed by the violence and extremely concerned about the people on the ground as well as those who have had to flee their country out of fear for their lives. It is still impossible to predict how the war will end or what its long-term consequences will be. We are doing everything in our power to help our local colleagues and others in the areas affected.

This sustainability report looks back on 2021, a year marked by the continuing Covid-19 pandemic as well as supply-chain disruptions and material shortages. Over the past year, we were again impacted by the new reality of reduced personal contact and increased uncertainty in both in our private lives and our business activities.

The year 2021 was also one in which the effects of climate change were increasingly apparent. An unprecedented number of extreme weather events and natural catastrophes compel us to take decisive action to combat global warming. The future of our planet depends on it.

We as a company have been carbon neutral worldwide since 2020 – the first global industrial enterprise to achieve this. As pleased as we were to achieve this goal, we do not see it as the end of the road for our climate action efforts. While we continue to improve existing measures – such as further increasing our energy efficiency and minimizing our use of carbon offsets – we are now also actively tackling our scope 3 emissions. Here, we're working to reduce emissions generated along our supply chains and during the entire life cycle of our products by 15 percent before the end of this decade. This may not sound hugely ambitious, but it is: in terms of volume, it amounts to 67 million metric tons. By contrast, the amount of scope 1 and 2 emissions we're saving each

year is around 3.3 million metric tons. This will of course entail a joint effort with our suppliers and other partners to achieve – but climate action is a joint necessity.

Of course, being a technology company means we also see it as our strategic imperative to find technological responses to societal and ecological challenges. This is what we mean by “Invented for life,” and we’re driving the development and application of a broad range of technologies to help us deliver on this claim. We continue to be fully committed to the hydrogen economy, for instance, and are investing in solutions ranging from hydrogen-ready boilers to stationary and mobile fuel-cell solutions. Our advances in these fields will help to boost sustainable living as well as sustainable mobility. By combining Internet of Things connectivity with artificial intelligence (AI) – a fusion also known as AIoT – we can smarten up everything from home appliances to entire manufacturing facilities and reduce carbon footprints substantially. Our global forests can benefit from this technology too: an exciting addition to our portfolio is an AI-powered, tree-mounted sensor that identifies wild-fires at an extremely early stage and wirelessly notifies authorities, thus helping to save lives, homes, and tons of carbon emissions.

Across the company, we’re also broadening the scope of our efforts beyond CO₂ and focusing our innovative strength on improving our sustainability in all areas. Our circular economy strategy is a key pillar of these efforts. Here, we’re finding ways of keeping materials and products in the usability loop for as long as possible through reuse, repair, remanufacturing, and recycling. It may sound like a no-brainer, but it requires innovative approaches along the entire value chain to ensure that waste is minimized and everything we use or produce can recirculate back into the economy as another product, component, or material. Here again, we want to lead by example by showing what’s possible – we owe it to future generations!

We’re not the only ones to see such planet-saving potential in technology. In the inaugural Bosch Tech Compass, a global survey we conducted last year on consumer attitudes to technology, more than three-quarters of respondents around the world said that they see technology as the key to combating climate change. As a high-tech leader, this is certainly encouraging. But it also confirms what we’ve known all along: that companies don’t have to choose between being profitable and doing what’s best for the planet. If the right path is chosen, both aims go hand in hand.

I know we still have a long way to go and many challenges ahead. I’m excited about our huge opportunity to be part of the solution – as are the more than 400,000 Bosch associates worldwide who are committed to making our company a beacon of sustainability.

Thank you for your interest and be well.

Yours sincerely,



Dr. Stefan Hartung
Chairman of the board of management

COM- PANY

Our ambition: By acting in an economically, environmentally, and socially responsible manner, we want to improve people's quality of life and safeguard the livelihoods of present and future generations.



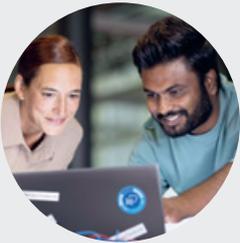
CO₂ Challenge

► Eco-friendly commute to work: that is how some 2,000 associates clocked up more than two million kilometers in 2021.



Once again best score

► Scored an “A” in CDP’s “climate change” category.



Responsible corporate governance

► Web-based training on the Code of Business Conduct updated as scheduled.



Diversity, equity, and inclusion

► Focusing on the individual: dimension of diversity introduced in our target vision of sustainability.

1.1 Bosch Group profile

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading Internet of Things (IoT) provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility.

Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life."

The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiaries and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since 2020.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as a "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by a company owned by the Bosch family and Robert Bosch GmbH. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. Further information on the organization of the Bosch Group and the company's economic situation can be found in the current annual report.

Research for greater sustainability

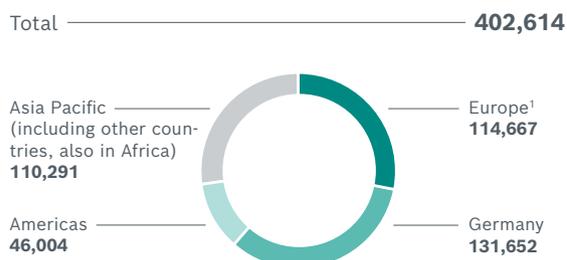
Bosch's innovative strength is the basis for the company's future growth. Bosch employs some 76,100 associates in research and development at 128 locations around the globe. Some 38,000 of those are software engineers working on digital transformation and the development of foundational technologies such as AI. Sustainability is a central theme of Bosch research, with a focus on three fields of innovation:



Annual report
2021

01 | Headcount

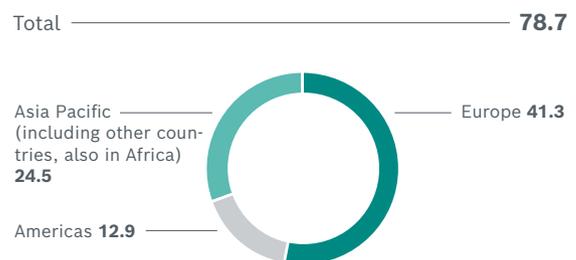
Bosch Group by region, as of December 31, 2021



¹ Without Germany

02 | Sales revenue

Bosch Group 2021 by region, in billions of euros



► **Sustainable innovations for resource and energy**

efficiency: In view of the growing scarcity of resources, any sustainable development strategy must find solutions for decoupling economic growth from resource consumption. We consider the circular economy to be a crucial element in the sustainable use of resources. In the building sector, for example, the electrification of building heating using heat pumps helps reduce greenhouse gas emissions.

► **E-mobility and electrified systems:** Electrification in the mobility sector makes a significant contribution to achieving climate targets. To this end, the company is developing concepts for electric drive vehicles and is working on integrated powertrains at both the system and component level.

► **Chemical energy conversion:** In the field of chemical energy conversion, Bosch is already developing the systems that will significantly lower carbon emissions in the future. To secure a sustainable energy supply in the future, Bosch is conducting research into generating electricity from renewable energy sources and storing it in a climate-friendly way. Innovative technological solutions for mobile and stationary fuel cell systems and for the production of hydrogen as an energy carrier are called for.

Mission statement and values

The Bosch Group is undergoing a phase of fundamental change in technologies and markets. Besides digitalization, increased connectivity via the IoT, and the opportunities that AI opens up, this is also due in particular to growing global concern about climate change, geopolitical developments, and social trends such as increasing urbanization. As affirmed in our “We are Bosch” mission statement, one of our strategic focal points is shaping change, taking into account the aspects of connectivity, electrification, energy efficiency, automation, and emerging markets. It is our ambition to play a part in molding the far-reaching changes in markets and technology. Apart from shaping change, our strategic focal points are customer focus and excellence. When putting our strategy into practice, we build on the Bosch culture, our high level of innovation – also measured in terms of our research and development spending – and quality, as well as our broad sectoral and global presence. Our actions are based on the Bosch values: future and profitability focus, responsibility and sustainability, initiative and determination, openness and trust, fairness, reliability and credibility, legality, and diversity.



Mission statement “We are Bosch”

Robert Bosch Stiftung

Robert Bosch Stiftung GmbH is one of Europe's largest foundations associated with a private company. Active in the areas of health, education, and global issues, it contributes to the development of viable solutions to social challenges through its charitable work. To this end, the foundation implements its own projects, enters into alliances with partners, and supports third-party initiatives. The global issues support area centers around the topics of peace, inequality, climate change, democracy, migration, and immigration society. When it comes to education, the focus is on individual and organizational learning, while with its support for health, the foundation is committed to securing a sustainable healthcare system that focuses more on people. Robert Bosch Stiftung is committed to upholding the values and example of its

founder Robert Bosch and continuing his philanthropic work in keeping with the times. The foundation benefits from over 50 years of experience and a comprehensive global network of experts and practitioners. With the Robert Bosch Academy, it supports interdisciplinary exchange between decision makers and opinion leaders. The foundation also supports the work of high-profile, practice-focused think tanks. Robert Bosch Stiftung holds roughly 94 percent of the shares in Robert Bosch GmbH and funds its operations from the dividends it receives from this shareholding. Since its establishment in 1964, Robert Bosch Stiftung has invested over two billion euros in charitable work. For further information on Robert Bosch Stiftung, visit www.bosch-stiftung/en.

1.2 Sustainability strategy and culture

Sustainability is defined as a central task within the Bosch Group. The goals are set jointly and tackled by all business sectors together on the basis of systematic sustainability management. The content, tasks, and related controlling are anchored in the company's processes, while clear responsibilities and decision-making channels ensure that our actions are effective. With our sustainability management, we are pursuing a clear objective: by acting in an economically, environmentally, and socially responsible manner, we want to improve people's quality of life and safeguard the livelihoods of present and future generations.

We use a materiality analysis as the basis for defining the content focus of our sustainability activities. We last updated our materiality matrix at the end of 2019: to this end, more than 1,000 international stakeholders

– including associates and prospective job applicants, business partners, representatives of the scientific community, policymakers, the capital market, and of nongovernmental organizations – gave their assessment of the relevance of sustainability issues. The fields of action identified as being of material importance to Bosch, and its stakeholders are shown in the following matrix. The survey confirmed in particular the high relevance of climate action and energy efficiency, data security and protection, and compliance and integrity. The outcome of this analysis also forms the basis for the choice of topics in this publication. The next update of the materiality matrix is scheduled for 2022.

03 | Materiality matrix

Sections: | **Company** | Products | **Environment** | **Associates** | **Society**

Relevance for stakeholders ↑ Very high Moderate ↓		Occupational health Sustainability awareness	Compliance and integrity Climate action and energy efficiency Data security and data protection	
	Water Sustainability reporting Diversity	Air quality Associate development Social commitment Resources and waste Environmental and social standards in the supply chain Occupational safety	Mobility transformation Employer of choice Sustainable product development	
	Demographic change Land consumption Biodiversity Investor relations Donations	Fire protection	Digitalization (IoT) and artificial intelligence (AI) Entrepreneurial freedom	
	Moderate	Relevance for Bosch		Very high →

Target vision sets the direction

Sustainability is frequently defined as a balance of economic, environmental, and social aspects. At the same time, sustainability has become an established concept on capital markets under the abbreviation ESG (environment, social, governance). Our comprehensive understanding of sustainability combines both of these approaches. We summarized the resulting main focus areas of our sustainability management in a target vision back in 2018. It describes six fundamental dimensions, each of which is specified and continuously elaborated further with reference to two focus activities with clearly defined, medium-term targets. Derived from the megatrends affecting our company and the findings of our materiality analysis, the dimensions set the framework for our actions. Our sustainability activities always con-

sider the entire value chain – from materials and goods purchasing or manufacturing operations at Bosch sites to the use phase of products sold to their end of life.

In 2021, we adjusted and specified our target vision. For the further we advance with our activities, the more precisely we can define each dimension. In this way, we combined climate and energy, which were previously treated as two separate focal topics, as one dimension. At the same time, we introduced the new dimension of diversity including the aspects of equity and inclusion in our target vision. In addition, we specified the circular economy dimension.

04 | Target vision **Our ambition: by acting in an economically, environmentally, and socially responsible manner, we want to improve people's quality of life and safeguard the livelihoods of present and future generations.**

Climate action

- 1 | Reducing CO₂ emissions
- 2 | Energy efficiency and renewable energies

Bosch is a climate action pioneer, advances the expansion of renewables, and strives continuously for energy efficiency.

Health

- 1 | Occupational health and safety
- 2 | Substances of concern

Bosch contributes to human health – with innovative products and services and by ensuring that people and the environment do not come to harm through its production processes.

Human rights

- 1 | Responsibility
- 2 | Transparency

Bosch takes on responsibility and is sensitive to human rights being respected – along the entire value chain.

Water

- 1 | Water scarcity
- 2 | Water quality

For Bosch, water is a resource to be treated sparingly. Regions in which water is scarce are a special concern.

Circular economy

- 1 | Materials efficiency
- 2 | Second life

Bosch is reducing its ecological footprint and striving to create social benefit. In this endeavor, Bosch takes its lead from the circular economy principle.

Diversity

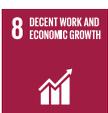
- 1 | Equity
- 2 | Inclusion

For Bosch diversity, equity, and inclusion are key to long-term success in business. In addition, Bosch contributes to the common good in the communities near its locations.



05 | Goals and goal achievement

Dimension	Goals	2021 status	UN SDGs
	<p>Reducing CO₂ emissions Operating climate neutral in scopes 1 and 2 and continuously improving the mix of measures by 2030</p> <p>Lowering absolute scope 3 CO₂ emissions by 15 percent by 2030</p> <p>Energy efficiency and renewable energies Saving 1.7 TWh through increased energy efficiency by 2030</p> <p>Increasing own renewable generation at our sites to 400 GWh and significantly expanding purchase of green electricity from new plants by 2030</p>	<p>Since 2020, Bosch and its over 400 company locations worldwide have been climate neutral (scopes 1 and 2). 89 percent of the electricity the Bosch Group consumes worldwide is green. In 2021, we offset a total of 0.9 million metric tons of CO₂ using carbon credits. This represents a slight decrease on the previous year's level (see the "Environment Energy and climate action" section).</p> <p>Reducing CO₂ emissions in the upstream and downstream supply chain (scope 3):</p> <ul style="list-style-type: none"> ▶ "Goods and services purchased" category: In 2021, we contacted around 1,000 suppliers directly to obtain real data on their CO₂ emissions. This way, we have now created transparency on the status of carbon accounting and corresponding activities of our suppliers for around a quarter of our purchasing volume. ▶ "Logistics" category: Whenever possible, the aim is to switch shipments destined for Bosch from air to sea or rail freight. Since 2019, this approach has allowed us to save around 200,000 metric tons of CO₂ (see the "Supply chain Social and environmental requirements for suppliers" section). ▶ "Use phase of products" category: In 2020, we identified additional potential for further reducing CO₂ emissions in our products' use phase. Pertinent levers are increasing energy efficiency, shaping the product portfolio, and using the transformation of the energy sector. In 2021, we derived specific performance indicators to track the contribution of the identified measures up to 2030 (see the "Environment Energy and climate action" section). <p>Since 2019, we have initiated more than 3,000 energy-efficiency projects worldwide, with some 1,000 new projects added in 2021 alone. With them, we have so far captured savings potential of 559 GWh in total. This corresponds to 33 percent goal achievement.</p> <p>In 2021, we generated 94 GWh of power from renewable sources in-house at our company sites. Accordingly, we already reached 23 percent of our target value. In parallel, we entered into long-term supply agreements with energy suppliers in three countries in 2021. In total, this will allow us to obtain an additional 150 GWh or more of electricity from renewable sources each year from 2022 (see the "Environment Energy and climate action" section).</p>	  
	<p>Water scarcity Reducing absolute water withdrawal at company locations in regions with water scarcity by 25 percent by 2025</p> <p>Water quality Improving the quality of wastewater flows</p>	<p>Since 2019, we have launched more than 200 projects and reduced water withdrawal by 21.5 percent compared with 2017 at company locations in regions with water scarcity. The company locations were identified using the WWF's Water Risk Filter (see the "Environment Water and wastewater" section).</p> <p>In 2021, Bosch's wastewater volume increased to 14.7 million m³ (previous year: 14.5 million m³). We have defined wastewater quality standards that are binding worldwide and monitor their compliance (see the "Environment Water and wastewater" section).</p>	

Dimension	Goals	2021 status	UN SDGs
	Materials efficiency Improving materials efficiency	For years, materials efficiency has been a fixed criterion in the Bosch product development process, where it is anchored in our Design for Environment (DfE) principle (see the " Products Management approach " section).	
	Second life Extending product life cycle and reusing materials and components from old appliances	Whereas measures relating to reuse, repair, and remanufacture extend a product's life cycle, those geared to product recycling involve reusing the main materials and components from old appliances (e.g. returned leased equipment) in closed loops managed by Bosch (see the " Products Management approach " section).	
	Equity Ensuring equal opportunities and increasing the proportion of female executives to 20 percent	Globally, the proportion of women executives across all management levels within the group rose to 18.4 percent in 2021 (previous year: 17.8 percent). We intend to keep on increasing this percentage. The virtually held Diversity Week with more than 200 online events in 16 languages reached tens of thousands of associates around the world, fostering international exchange (see the " Associates Employer of choice " section).	
	Inclusion Promoting inclusion	The Bosch Group has donated 27.6 million euros to charitable causes worldwide. Some regional companies have established their own charitable institutions to carry out their CSR activities (see the " Society Corporate citizenship " section).	
	Responsibility Ensuring human rights are respected along the value chain	A comprehensive revision of the Code of Conduct for Business Partners was initiated in 2021. The social and environmental standards Bosch requires were further specified in the process (see the " Supply chain Social and environmental requirements for suppliers " section).	
	Transparency Increasing transparency	In 2021, a cross-company concept was developed to mitigate risks arising from the procurement of products and semi-finished products that, according to our analyses, contain particularly high-risk raw materials. Risk minimization programs will now be implemented over the next three years (see the " Supply chain Social and environmental requirements for suppliers " section).	
	Occupational health and safety Reducing the accident rate to 1.45 accidents per 1 million hours worked or less by 2025	As production resumed after the pandemic-related restrictions, the accident rate also rose again slightly in 2021: there were 1.62 accidents per 1 million hours worked (previous year: 1.5) (see the " Associates Occupational health and safety " section).	
	Substances of concern Continuously upgrading materials data management	Bosch handles substances of concern responsibly. To efficiently manage prohibitions and restrictions on materials, we are continuously upgrading our IT-based Material Data Management for Compliance and Sustainability (MaCS) system (see the " Products Product responsibility " section).	

Clear responsibility for sustainability

At Bosch, the highest technical committee for sustainability is the sustainability steering committee under the aegis of the CEO. This committee brings together the board of management member responsible for sustainability as well as the competent corporate department heads, including for HR, Real Estate and Facilities, Purchasing, Sustainability and EHS (Environment, Health, Safety), and Corporate Communications and Governmental Affairs. The steering committee concerns itself with Bosch’s strategic orientation in relation to sustainability, whereas goal agreements and management review for all sustainability-related issues are the responsibility of the CEO and the board of management member responsible for sustainability.

Our global sustainability management is summarized in a central process that is based on the ISO standard process definitions, especially ISO 31000. Responsibility for worldwide implementation of the sustainability strategy and monitoring the achievement of goals rests with the competent officers at headquarters and in the divisions. The structure we apply in sustainability management is one that has already served us well in other areas: strategy and framework conditions are defined centrally, and the divisions focus on the specific implementation and certification. The associates responsible in the regions and at the more than 400 Bosch sites worldwide have the task of putting the respective requirements into practice locally and ensuring compliance with the defined framework conditions. In parallel, corporate headquarters regularly performs internal sustainability and EHS audits.

06 | How sustainability is organized at Bosch



The Sustainability and EHS corporate department is responsible for sustainability management, which mainly entails setting and tracking goals, designing and accompanying programs, preparing concepts for further development, and sustainability reporting. From a content point of view, the Corporate Communications and Governmental Affairs corporate department focuses on systematic stakeholder engagement and sustainability communications.

Executives receive training on sustainability matters in a mandatory Web-based training course. As role models, they are our global multipliers with respect to the sustainability goals. Since the training program’s launch in 2014, a total of 31,700 executives with and without team leadership responsibilities have already completed the course, with over 1,700 executives taking part in 2021 alone. Their feedback also serves as a basis for continuously developing the course further.

Sustainability culture

The more extensive and comprehensive sustainability management activities become, the more vital it is to involve as many associates as possible in this process. Each and every one at Bosch is therefore called on to contribute and advance sustainability in their individual sphere of influence. This way, sustainability becomes a shared mindset within the company – and driven by each associate’s conduct – that is inherent in all processes and decisions made. As a result, a sustainability culture emerges in which entrepreneurial value creation almost automatically produces environmental and social value added.

To leverage this potential, we must not only make the necessary changes to structures and processes but also continuously adapt our corporate culture to give associates the latitude they need and also encourage the desired conduct – for which the company also expresses its appreciation ultimately. Against this backdrop, new, hybrid forms of working – referred to at Bosch using the

term “smart work” – are also conducive and empower our associates to achieve more sustainability. The new forms of work and organization are resulting in ever more closely networked collaboration – in complex processes, in agile and continuously reforming teams, and often across all company and national boundaries – and less and less in a traditional office setting. Mutual trust, shared values, and a common understanding of business – also in terms of our actions’ sustainability – thus become the foundations of all collaboration. At the same time, associates increasingly take ownership and enjoy greater individual latitude – and consequently have greater potential to make a real difference in the transition to a sustainability culture (also see the “[Associates | Employer of choice](#)” section).

Based on this understanding – and having successfully implemented group-wide sustainability management – we have started to initiate the related cultural change, a process we encourage by providing specific impetus. The related activities are divided into seven areas (see Fig. 07).

The following three measures are examples of our activities in 2021.

► Award-winning commitment – the Sustainability and EHS Award 2021

Each year, outstanding projects within the Bosch Group are recognized with the Sustainability and EHS Award. A jury of experts chooses the three best projects in each category, and the board of management member responsible for sustainability presents the awards at an internal award ceremony. In 2021, 176 teams from Bosch

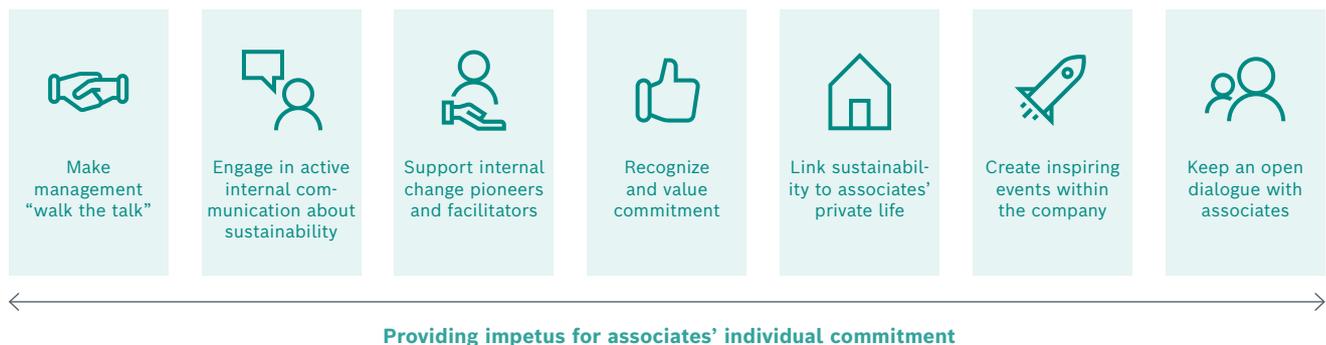
locations around the world competed for the prize, which is awarded in the categories “CO₂ and energy efficiency,” “resource efficiency,” “occupational safety,” “sustainable products,” and – a new category – “sustainability culture.”

In 2021, the winning team in the “**CO₂ and energy efficiency**” category was from India. At the Bidadi site, various measures to reduce energy consumption were implemented using a smart energy management system. This made it possible to achieve some 680 MWh of energy savings in 2021, corresponding to a 15 percent reduction in the energy used in processes. Further potential will be identified in the future through the increased use of AI in order to further reduce energy consumption and achieve additional CO₂ savings.

The winner in the “**resource efficiency**” category was a team from the Juarez site in Mexico. By using green plants adapted to the arid climate, they managed to reduce the amount of water needed for irrigation to a monthly average of 31 liters per square meter. Besides the green areas planted with cacti and agave plants typical for the region, the communal areas for associates and visitors were also modernized in line with the architectural concept.

Another team from Mexico made first place in the “**occupational safety**” category. It introduced a digital platform for reporting dangerous work situations at the San Luis Potosí site. By reporting, associates, visitors, and suppliers help to prevent accidents before they occur. In this way, potential dangers can be identified at an early stage and countermeasures implemented promptly.

07 | Seven action areas for embedding sustainability culture



A team from the Ovar site in Portugal was selected in the “**sustainable products**” category. By optimizing the packaging design, it was able to reduce the amount of waste packaging by 3.4 metric tons. In cooperation with the supplier, the packaging for the components supplied was redesigned such that it can now be used for shipment to end customers. At the same time, the packaging was made more eco-friendly – as well as reducing the size of the packaging, the team replaced the foam used with a cardboard inlay. The optimization measures also helped to make repackaging processes more efficient and reduce freight volumes and storage space needed.

First place in the new category added in 2021 “**sustainability culture**” went to a team at the Nashik site in India. For years, local CSR activities have centered on the plant’s immediate neighborhood, with an emphasis on modernizing the water infrastructure. Over the past three years alone, maintenance and renovation work on weirs and water storage facilities have ensured water supplies for more than 200 families. In addition, more than 100 farmers now benefit from reliable crop irrigation and higher yields as a result.

► **An app that set much in motion: CO₂ Challenge**

About 2,000 associates from many regions and divisions took part in the 2021 CO₂ Challenge, which was designed to increase climate action motivation by means of gamification. Identified as best practice at Bosch’s location in Linz, Austria, the idea was put into practice company-wide: anyone who comes to work by bike, public transport, or on foot instead of by car collects virtual points on an app, which are converted into trees by Bosch at the end and actually planted in the real world. Thus motivated, the participants clocked up more than two million kilometers using environmentally friendly transport modes during the given period.

► **Green Heroes – sustainable at home as well**

With the Green Heroes campaign, Bosch bridged the gap between workplace and private life in 2021. The idea was for associates to show their colleagues how they conserve energy and live more sustainably outside work. They were invited via the intranet to send in short videos for this purpose. In a short period of time, we received more than 140 ideas from around the world – from creative tips on putting waste to good use through to shopping tips and household tricks. Five associates were nominated as Green Heroes for their projects. The winning videos were published on the intranet and met with a worldwide response.

Commitment and cooperation

We want to make a relevant contribution to overcoming global social challenges and are therefore involved in numerous joint initiatives. For instance, Robert Bosch GmbH has been a member of the United Nations Global Compact since 2004. We are committed to the ten Global Compact principles relating to human rights, labor standards, environmental protection, and anti-corruption measures. With this factbook, we also satisfy the related requirement to report on the progress we made in 2021 in terms of these principles. We also support the United Nations Sustainable Development Goals (SDGs) adopted in 2015. Accordingly, we regularly benchmark our sustainability activities against the 17 SDGs (see Table 05). Bosch’s diverse activities also support aspects of other UN goals.

Transparent reporting – sights on new developments

Our reporting makes Bosch’s commitment transparent. We support various reporting formats, such as the CDP (formerly “the Carbon Disclosure Project”, also see Fig. 08) or the Standards of the Global Reporting Initiative (GRI). In addition, we are active members in a large number of other sustainability-related initiatives – including, since 1995, as a corporate member of Transparency International Deutschland e. V. We are also active on the executive board of the econsense association (Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e. V., also see the “[Society | Political lobbying and dialogue with stakeholders](#)” section).

Sustainability reporting as required by law is becoming increasingly important in the context of the European Union’s Green Deal. In April 2021, the Commission of the European Union (EU) published a draft Corporate Sustainability Reporting Directive (CSRD). The new requirements include reporting on sustainability aspects in companies’ management reports and, according to the current version, will become effective for the first time for the 2023 financial year.

Based on the CSRD, Bosch will also be required to apply the EU taxonomy. The EU's Taxonomy Regulation provides a standard classification system for companies' environmentally sustainable ("green") economic activities. It requires disclosures about the degree to which products and services meet the green criteria of one or more of the six environmental objectives the Regulation has defined. At the same time, activities must not harm any of the environmental objectives. Bosch is already preparing for the new requirements today. A newly established project team, in which the Sustainability and EHS corporate department as well as the Finance corporate department are represented, is driving forward the preparatory work for implementation in terms of content.

Exchange with internal and external stakeholders

We engage in continuous dialogue with our stakeholders. This allows us to check our sustainability commitment for society's changing expectations and make an appropriate impact. As a company with global operations and an extensive product portfolio, we face a wide range of stakeholders with often widely diverging requirements.

► Customers

We are in regular and intensive dialogue with companies from various industries. A key issue in the automotive industry is the future of mobility. In other industrial sectors, we share ideas on a range of topics, including energy efficiency and connectivity in the fields of mobility, buildings, and industry. In the consumer business, our customers' feedback is an important yardstick against which we can measure our actions (also see the "[Products | Product responsibility](#)" section).

► Suppliers

Our responsibility for the environment and society stretches beyond our company boundaries and across the entire supply chain. Accordingly, we include our suppliers in our sustainability efforts. To foster dialogue with our suppliers, we regularly hold supplier days on specific topics in the respective regions. In addition, Bosch has regularly presented the Bosch Global Supplier Award since 1987 to honor outstanding performance and further strengthen the reputation of the best-performing suppliers (also see the "[Supply chain | Further developing and strengthening cooperation](#)" section).

► Universities and research institutes

We maintain dialogue with research institutes by promoting research projects in areas of relevance for Bosch such as digitalization, renewable energies, and electrification. In addition, we offer students and graduates the opportunity to write their bachelor's or master's thesis or dissertation on sustainability topics of practical relevance (also see the "[Associates | Learning and development](#)" section).

► Policymakers

As a global supplier of technology and services, we believe it is our responsibility to put our deep technology expertise to work for the benefit of society and to point out concrete opportunities as well as solutions to current challenges in society. With this in mind, we help shape opinions at a government policy level, in associations, and in various social forums (also see the "[Society | Political lobbying and dialogue with stakeholders](#)" section).

08 | Bosch's positioning in selected sustainability rankings and ratings

Rating	Current status	Previous status
CDP	Climate: Score "A" Water: Score "B"	Climate: Score "A" Water: Score "B"
Ecovadis	Silver status 63/100 points	Silver status 59/100 points
ISS ESG	Prime status B-	Prime status B-
Sustainalytics	14.8 points (low-risk category)	18.7 points (low-risk category)

► Associates

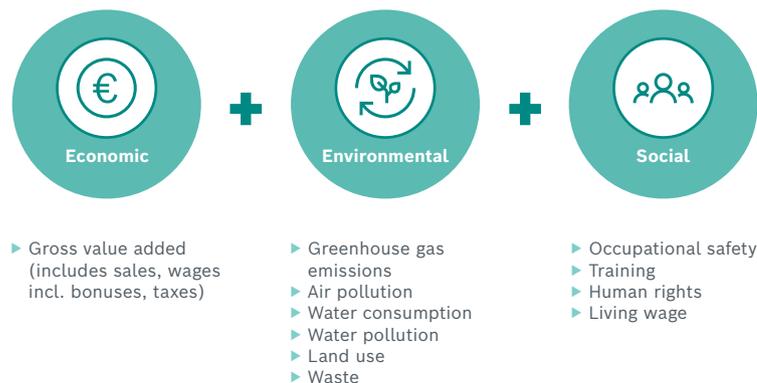
The conviction held by our company founder Robert Bosch also finds its expression in our corporate culture: we want to create a working environment for all associates that allows them to be themselves and reach their full potential. Dialogue with associates includes regular feedback talks with their respective managers because we consider clear and purpose-driven feedback the key to improvement. With our new feedback landscape, we want to give associates the opportunity to express their opinions and initiate changes (also see the "[Associates | Leadership and collaboration](#)" section).

Commitment to the Value Balancing Alliance

As one of the seven founding members of the [Value Balancing Alliance e. V. \(VBA\)](#), we have been working since 2019 together with other internationally operating companies on developing and testing a global standard for the holistic evaluation of entrepreneurial activities. To this end, the Alliance aims to create transparency and put a monetary value on the social, environmental, and economic impact of entrepreneurial activities as well as on the interdependencies along the value chain and how they affect corporate value. Several universities, nongovernmental organizations, and audit firms are also involved in the project.

In 2020, the members of the VBA developed an initial set of indicators backed by a corresponding methodology. A total of 11 member companies trialed the methodology to determine the extent to which it is relevant and practical. The results of the pilot study are available online and largely coincide with the findings made at Bosch: the greatest positive impacts in the economic dimension are generated through payments to suppliers for purchased goods and services and through the wages and bonuses paid to associates, whereas the greatest negative impacts arise from carbon emissions produced in the supply chain. In 2021, social indicators were added to the methodology to include human rights in particular (see Fig. 09). In addition, some indicators were adjusted to make it easier for companies to apply them. Piloting of these indicators is planned for the start of 2022.

09 | VBA's set of indicators



1.3 Corporate governance and compliance

Bosch is expressly committed to taking responsibility, obeying the law, and behaving ethically. As our mission statement says: “We promise only what we can deliver, accept agreements as binding, and respect and observe the law in all our business transactions.”

Responsible corporate governance

The board of management of Robert Bosch GmbH defines the strategy for the entire company and leads the company as a whole. Its responsibilities are set out in the board of management organization chart. As of the 2022 financial year, the number of members on the board of management was reduced to six, combined with a handover to the next generation. The Robert Bosch GmbH supervisory board appoints, monitors, and advises the board of management. In making appointments to the supervisory board, Robert Bosch GmbH is subject to the German Codetermination Act (*Mitbestimmungsgesetz*). Owing to the company’s size, the supervisory board has 20 members. Ten members are appointed by the shareholders with voting rights. The other ten members are elected by the employee representatives.

The industrial trust Robert Bosch Industrietreuhand KG acts as partner. In line with the mission handed down in the will of the company’s founder, Robert Bosch, the trust is responsible for safeguarding the company’s long-term existence and, above all, its financial independence. The aim is to guarantee that the company remains independent and able to act at all times. For further information on the board of management and the supervisory board, see pages 10 and 16 of the 2021 annual report.

Risk management

In the Bosch Group, risk management encompasses the entire company, including all essential operations, functions, divisions, and business sectors. It is thus a core responsibility for all managers on every level of the Bosch Group. To the extent possible, risks are identified and managed where they arise: in other words, above all in the divisions and their regional subsidiaries. The latter are also primarily responsible for introducing measures to reduce or control risks.

The corporate departments for compliance, risk management, and internal controls are responsible for governance of the related system, while specialist departments such as legal services and tax support, direct, and monitor the rules and priorities set. Internal auditing provides support in areas including assessing the appropriateness and effectiveness of the tasks described and, if necessary, proposes that the board of management or the respective officers initiate improvement measures.

The Bosch Group’s risk management system is based on the standards ISO 31000, COSO III (ERM), and IDW AuS 340. It comprises the systematic detection and tracking of relevant risks and, where necessary, identification and monitoring of measures to manage these risks. In this context, the corporate coordinating office for the risk management system is responsible for continuously refining the system. Current priorities include further refining analyses of risk capacity and measures to strengthen the risk culture.



[Annual report 2021](#)

A group risk management guideline sets out the principles and responsibilities. In addition, a cross-functional risk committee is tasked with identifying significant risk areas across the divisions and pinpointing potentially disruptive technological and strategic risks.

For a description of significant risks, see the 2021 annual report (page 83 et seq.). The main antitrust and legal risks are also described there.

Compliance at Bosch



[Code of Business Conduct](#)

[Code of Conduct for Business Partners](#)

Compliance refers to the observance of legal requirements and company guidelines. At Bosch, this is an integral part of our corporate values. To this end, we have unequivocally defined our position on legal requirements and ethical issues in our globally applicable Code of Business Conduct. Together with the Bosch values, it provides a foundation that we believe is key to Bosch's success in business. We feel that responsible and lawful conduct is important beyond company boundaries and have formulated our expectations of our business partners in a corresponding code of conduct (see the "[Supply chain | Social and environmental requirements for suppliers](#)" section). Accordingly, we continuously monitor current developments and adjust our codes where necessary.

Company-wide compliance management system

The global compliance management system (CMS) constitutes an integral element of the operationalization of corporate governance in the Bosch Group and comprises structures and processes for ensuring compliance at an organizational level. It aims to ensure compliance and thus contribute to the company's long-term success on the basis of integrity and value-based conduct. We are continuing to move away from rule-based compliance to a primarily values-based approach. It is our ambition to be a pioneer for values-based conduct that extends beyond mere compliance with the law and internal regulations. The CMS is preventive in nature and is designed to encourage all associates in the Bosch Group to identify compliance risks and violations at an early stage and to respond appropriately. The aim is thus also to

reduce risks for the Bosch Group, its associates, and its corporate bodies. At the same time, we want to protect and cultivate the reputation of the Bosch Group, which is the basis of our business partners' trust.

The central guidelines governing the CMS set out the responsibilities for each area of compliance. Compliance officers are responsible for implementing corporate governance in their respective areas of responsibility, such as anti-corruption, antitrust law, money laundering, product compliance, occupational health and safety, fire protection, environmental protection, and labor and social legislation.

The compliance committee supports the implementation of the Bosch Group's CMS and coordinates compliance issues. In addition, it contributes to the risk-based further development of the CMS – for example, by assessing the regulatory environment and other developments to identify new compliance risks. The compliance committee comprises the heads of the Compliance Management corporate department, legal services, the Internal Auditing department, and other members appointed by the board of management. It is chaired by the chief compliance officer. The new compliance committee office provides personnel and technical support to the compliance committee.

The chief compliance officer also heads the Compliance Management corporate department, which is responsible for the specialist area of anti-corruption as well as information security and data protection and for key elements of the Bosch Group's CMS (e.g. compliance training, operating and further developing the compliance whistleblower system, serving as point of contact for reports of misconduct, and conducting internal investigations). The chief compliance officer sets the goals for the Compliance Management corporate department and reports directly to the member of the board of management responsible for compliance. If necessary, he is entitled to contact the chair of the supervisory board directly.

Compliance offices have been set up in the regions and divisions as part of the Compliance Management corporate department. The core task of the compliance offices is to support the regions and divisions to which they are assigned in fulfilling their obligations under the CMS and in conducting internal investigations. For this purpose, they have unrestricted authority to demand information and perform audits, are independent in exercising their duties, and bound only by the instructions of the Compliance corporate department.

Notwithstanding the constantly evolving environment, we are intent on keeping our policies and procedures up to date. That is why within the area of responsibility of the Compliance Management corporate department we continuously review our compliance program and consistently develop it further. To this end, we carry out regular risk analyses.

According to our regular cycle, we repeated our global analysis of corruption risks in 2021, combining it with the analysis of risks relating to antitrust law. The analysis covers 253 legal entities that are selected based on certain criteria such as headcount, sales revenue, and specific risk indicators (e.g. current Corruption Perception Index published by Transparency International). In addition, we performed further in-depth analyses in selected divisions, corporate sectors, and service units, initiating appropriate measures if required. Having completed the analysis of money laundering risks in 2020, with the support of an external consulting firm we also defined specific measures to reduce any money laundering risks identified and started implementing these. For example, additional personnel capacity was assigned to money laundering prevention and internal regulations were revised.

Implementation of corporate governance within the framework of the CMS is reviewed in the course of internal audits performed by the Internal Auditing corporate department. The CMS is also regularly included in the internal audits. In addition, we test our CMS in external audits and consulting engagements and always take the results as an opportunity to further develop and optimize our CMS.

Code of Business Conduct

The Code of Business Conduct provides guidance for all Bosch associates on values-based and thus ethical and legally irreproachable conduct. It outlines the basic rules of conduct in the company and provides guidance on issues such as how to deal with insider information, whether to accept gratuities and how to avoid conflicts of interest. Our aim is to set clear guidelines and, at the same time, to protect our associates, our company, and our business partners. The guidelines are specified in the corresponding central policies and additional local

regulations. These also set out specific value limits. In Germany, for example, the acceptance and issue of gratuities exclusively constituting a private benefit is permissible up to a limit of 35 euros per year and recipient.

The Code of Business Conduct also encompasses our commitment to social responsibility, including respect for human rights and the prohibition of forced or child labor. It is available to all associates in 33 languages

**CLEAR GUIDELINES PROTECT
 OUR ASSOCIATES, OUR COMPANY,
 AND OUR BUSINESS PARTNERS.**

and has been expressly communicated by the CEO to all associates exempt from collectively bargained agreements worldwide. They have confirmed their acknowledgment of the code. In addition, an abbreviated version containing the key messages has been provided to all associates. The Code of Business Conduct is available on the Internet and the intranet.

Product Development Code

In product development as well, we observe unequivocally formulated basic principles as summarized in our Product Development Code. Our actions are guided by the principle of legality and our "Invented for life" ethos. Specifically, legality and the Bosch values take precedence over customers' wishes. After all, Bosch products should deliver the specified quality in everyday use and safeguard human life while conserving resources and protecting the environment to the greatest possible extent. It is not permitted to develop functions for cycle/test recognition; nor is optimization solely for the purpose of official test cycles.

Our ethical guiding principles in the Product Development Code go beyond what is required by law and apply throughout the Bosch Group and to all Bosch products and services. If a customer does not observe these principles, we do not take part in their invitations to tender. In the event of noncompliance with the Product Development Code in the course of existing business relations, measures can extend to a delivery stop.

Export control

Some of our products can also be used for military purposes. With regard to such goods and services, we comply with the relevant legal requirements, including but not limited to export control regulations.

Compliance of business partners and company acquisitions

Bosch takes a holistic approach to corporate social responsibility. Therefore, clear policies and procedures also apply with respect to our business partners. Our business partners are regularly subject to a standardized and risk-based compliance check. This encompasses both customers as well as suppliers, possible partners in the establishment of joint ventures, and potential acquisition and takeover targets. The depth and scope of the checks depends on various factors, such as the nature of the business relationship. Corporate and personnel structures can also play a role. Compliance checks focus on possible misconduct – for example, noncompliance with the law or official regulations such as applicable penal laws, environmental regulations, or human rights. We access information in the public domain for this purpose. The findings are assessed using a standard process and appropriate measures are defined and introduced to the extent necessary. These can range from a more in-depth assessment right through to withdrawal from the business relationship or project. To further strengthen our risk-based approach, we developed a supportive IT-based testing and monitoring process for selected business partners and adjusted our internal regulations accordingly in 2021. The new process is to be introduced in 2022.

In our Code of Conduct for Business Partners, we have formulated what we expect from business partners in terms of compliance. Referenced in particular in the Terms and Conditions of Purchase as an integral contractual element, the Code of Conduct is handed out to all suppliers at the beginning of the business relationship. Moreover, there are additional internal policies that provide clear guidance on responsible conduct and define

further processes with respect to our business partners. The “[Supply chain](#)” section of this report describes in detail how we live our responsibility in the supply chain.

Training and communication

We use extensive training and communication measures to sensitize our associates to issues such as compliance, our social responsibility, and the importance of human rights. The compliance training program is available to our associates as Web-based training (WBT) and offered as classroom training or webinars. Participation is mandatory for certain groups of associates selected using a risk-based approach, including associates without collectively bargained contracts due to their special responsibility as specialists or managers, but also numerous associates in selected areas or in special functions. The minimum compliance training currently held worldwide is mandatory for the associates concerned and has been completed over one million times to date.

Our minimum compliance training courses cover five areas: business ethics, product compliance, anti-corruption, antitrust, and export control. The training content must be repeated regularly, usually at two- to three-year intervals. Our training courses are regularly refined and updated to accommodate new content and developments. Feedback from training participants is always taken into account in the process.

In this way, a new WBT was introduced in 2021 on how to manage classified information. In addition, the “product safety and product liability” and “Product Development Code” WBTs were published for associates to retake in a revised version. The WBT on the Code of Business Conduct was also due for an update and the new version was made available from mid-January 2022 for the target group to retake.

Internal communication raises awareness for compliance

We use all media formats available for internal communication to draw attention to compliance issues – from the intranet to internal social media or notices put up on-site. The compliance channel on the internal Bosch Tube video platform offers some 100 audio and video files on the subject. The Bosch Compliance App has been



[Code of Conduct
for Business
Partners](#)

pre-installed on the cell phones of some 80,000 associates worldwide and offers quick access to the various compliance topics. It is also possible to directly contact the competent compliance officers in each country and division using the app.

By running several campaigns every year, we increase the visibility of the topic of compliance and the pertinent contact persons within the company. In this connection, a global awareness campaign on the Bosch whistleblower system and the protection of whistleblowers was designed in 2021 and is to be launched worldwide in 2022. It is intended for associates, executives, employee representatives, and pertinent HR staff. In addition to raising further awareness of the issues of submitting reports and whistleblower protection, the campaign aims to make the work of the compliance organization more transparent and thus help to further strengthen the trust of associates in internal reporting and whistleblowing channels at Bosch.

The compliance dialogue enables intensive and open exchange between managers and associates on everyday issues relating to compliance topics. Supplementary to the mandatory training, the dialogue is a voluntary offer that encourages teams to discuss and resolve specific dilemmas. The compliance dialogue is continuously updated to include new practical cases.

Complaint mechanisms and whistleblower system

If there is any suspicion of possible misconduct, such as a violation of applicable law or the Code of Business Conduct, associates as well as business partners and other third parties can submit a report to the compliance organization – also anonymously in accordance with legal requirements. To this end, we have set up the [Bosch whistleblower system](#) that is available in 14 languages on the Internet and our intranet. To help users, the whistleblower system offers thematically predefined reporting categories. The objective is to make it as easy as possible for whistleblowers to submit reports. At the same time, it is made clear that the system is available without restriction for reports on the full spectrum of conceivable misconduct. In addition, BSH Hausgeräte

GmbH operates a whistleblower system. Naturally, Bosch associates can also directly contact their superior or the respective compliance offices in their division or region. The compliance organization follows up all reports without delay and involves additional experts in individual cases. Progress and the corresponding assessment of the matter are recorded in a central database and monitored. Not all reports are necessarily handled by the compliance organization. Further processing can be handled by the respective compliance officers or specialist departments. For instance, HR is responsible for handling cases of discrimination without implications under criminal law.

Great importance is attached to the protection of whistleblowers throughout the process of handling cases. This concerns both identity protection and protection against possible discrimination. Protecting whistleblowers is already explicitly anchored in the Code of Business Conduct. Any indications of disadvantage due to whistleblowing or of obstruction of whistleblowing are pursued as separate compliance cases.

CENTRAL WHISTLEBLOWER SYSTEM IS AVAILABLE ONLINE AROUND THE CLOCK IN 14 LANGUAGES.



In 2021, 1,044 reports (previous year: 924) were recorded via the whistleblower systems. We have seen a steady increase in the number of reports over the last few years, a development we primarily attribute to the comprehensive measures in the field of compliance and the resulting increased awareness of compliance issues. This trend has lessened, however, as a result of the Covid-19 pandemic. Compared with 2020, the number of reports received remained at a stable, high level.

PROD- UCTS

Our ambition: Invented for life.
We want our products to spark
enthusiasm, improve quality of life,
and help conserve natural resources.



Conserving resources

- ▶ Customer support and ease of repair extend product life cycle.



Circular economy

- ▶ Strategy adopted to close commodities and materials loops.



Recycling

- ▶ On average across the entire product portfolio, around 56 percent of the of the steel used is recycled.



Supporting the United Nations Sustainable Development Goals (SDGs)

- ▶ Specific contribution to various SDGs.

2.1 Management approach

Bosch has a broad product portfolio that is unique in terms of its variety. Our products ensure safe and sustainable mobility, are durable companions in the home, or control industrial plant and machinery efficiently and reliably. As varied as our products are in detail, they share a common ethos: “Invented for life.” We want our products and solutions to spark people’s enthusiasm, to improve their quality of life, and to help protect the environment.

Circular economy strategy

With our circular economy strategy, we want to make our products sustainable throughout their entire life cycle – from their procurement and production to their use, return, and remanufacturing right through to recycling and the reuse of materials. To this end, we either create loops directly within Bosch or close them outside the company using established recycling processes. This way, we not only reduce the amount of materials used and our products’ carbon footprint and contribute toward achieving our scope 3 target, but we also avoid potential risks in relation to compliance with environmental and social standards. Building a closed-loop system for materials has the particular advantage of eliminating parts of the value chain that are subject to risks (see Fig. 10).

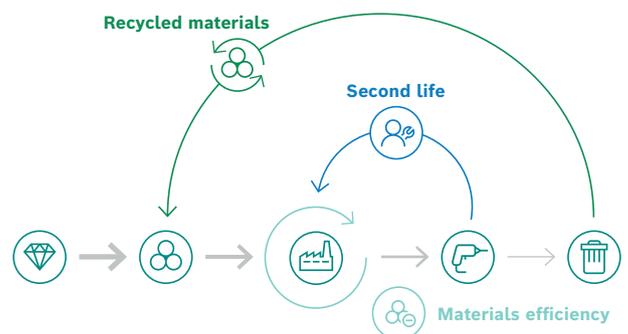
Our circular economy strategy reflects the realization that, from a climate action perspective, the aspects of “energy” and “materials” are two sides of the same coin. Therefore, we can apply the same model of four levers in our circular economy strategy as in our efforts for

going carbon neutral, which classifies measures according to their quality, cost, and feasibility. At the same time, we found that these four levers can basically be applied across all spheres of influence – from scope 1 to scope 3. The result is a consistent strategy that covers our entire value chain (see Fig. 11).

Depending on the markets in which our divisions operate, the levers differ in their degree of effectiveness, are not equally applicable across the board, and therefore offer different development potential. Accordingly, it is vital for Bosch to develop a market-specific circular economy strategy for each division and find the optimum mix of the four levers in each case. For this purpose, in 2022 we will analyze the potential that the levers offer in the different business sectors and derive specific circular economy strategies on that basis. The divisions can then use these to decide for themselves – depending on use case and technical feasibility – which approach is best for a certain product to reduce negative environmental effects and also avoid risks relating to human rights.

Many activities in Bosch’s business sectors already follow the principle of a circular economy today, illustrating the different ways in which the levers in our circular economy strategy work.

10 | Circular economy strategy



Lever 1: Materials efficiency

The measures offering the highest quality aim to increase materials efficiency – after all, the best solution for the environment is to use fewer materials. For years, materials efficiency has therefore been a fixed criterion in the Bosch product development process, where it is anchored in our Design for Environment (DfE) principle (for more on DfE, see section “[Design for Environment](#)”). Applying this principle, a design or concept is optimized in the product development process to use as little material as possible to realize the product. This reduces the carbon footprint and also cuts the manufacturing cost of a product.

The following examples show how different the corresponding measures can be in each division.

► **ABS control unit:** Since the first antilock braking system was introduced on the market in 1978, the system has been continuously improved, also in terms of materials utilization. Whereas such control units weighed at least 7.5 kg to start with, 40 years later they were only around 1.5 kg. It was possible to save roughly 80 percent of materials mainly thanks to smaller electronic components and by integrating several functions within a component.

► **Microelectromechanical systems (MEMS):**

When Bosch began the production of micromechanical sensors in 1995, the edge length of an acceleration sensor was still over 13 centimeters. Today, the most compact MEMS sensor made by Bosch is smaller than a pinhead with an edge length of just 1.56 millimeters. Within 25 years, the sensor size has thus been reduced by a factor of 85 – while the functionality has increased considerably over the same period.

Lever 2: Second life

In the second lever, we have grouped together the measures that Bosch can use to improve materials flows itself or close loops within the company. This has produced the most complex lever in our circular economy strategy, but it also offers the greatest potential. It includes measures with a whole range of different objectives and effects, while offering a maximum of autonomy and latitude in implementation. Whereas measures relating to reuse, repair, and remanufacture extend a product’s life cycle, those geared toward product recycling involve reusing the main materials and components from old appliances (e.g. returned leased equipment) in closed loops managed by Bosch. Here are a few examples.

11 | Transposition of levers

Comparison of climate action strategy and circular economy strategy

	Upstream value chain (scope 3)	Bosch locations (scopes 1 and 2)	Downstream value chain (scope 3)
Energy			
Energy efficiency	Reducing CO ₂ emissions by improving energy efficiency		
New clean power	Reducing CO ₂ emissions by expanding renewable energies		
Green electricity	Reducing CO ₂ emissions by purchasing green electricity		
Carbon offsets	Offsetting unavoidable CO ₂ emissions		
Materials			
Materials efficiency	Saving materials by improving materials efficiency		
Second life	Saving materials by extending the product life cycle and reusing materials and components (building a closed-loop system for Bosch products)		
Recycled materials	Reducing social and environmental impacts by using recycled materials (closing the loop in the economy)		
Carbon offsets	Offsetting CO ₂ emissions produced		

► **Customer support:** With its customer support services, Bosch seeks to extend its products' service lives. The diverse services offered by the divisions range from service hotlines to online guides, online replacement part finders/replacement part service, and right through to repairs and maintenance, or even the modernization of entire systems.

BSH Hausgeräte GmbH's customer support is one of the largest in the industry, comprising some 15,000 internal and external technicians. Seven logistics centers in proximity to the production locations house more than 200,000 replacement parts – and for a period of over ten years after the end of production. Eighty-three percent of repairs resolve the given problem on the first try, reflecting the high quality of service.

The range of services offered by Bosch Thermotechnology is similarly comprehensive. It ranges from commissioning to maintenance and repairs for more than 7,500 products. Replacement parts are typically available over a period of 15 years. In 2021 alone, Bosch Thermotechnology's central replacement parts warehouse shipped more than two million items to customers.

Bosch Rexroth as a supplier of components and systems in the areas of hydraulics and factory automation likewise offers a broad spectrum of support services ranging from repairs and maintenance to the modernization of complex machinery. In the course of modernization work, it is possible to combine the machines' basic technology with state-of-the-art automation and new technologies. Such solutions not only extend the machinery's service life, but they also enhance its safety and energy efficiency.

► **Extended useful life for drive units:** eBike drive units from Bosch are technologically complex products that users cannot repair themselves. Specialist dealers are able to do maintenance work and smaller repairs on the drive unit such as applying a drive unit repair kit, regreasing, or replacing or refitting bearing protection rings. If any larger defect is found, the motor is picked up from the dealer by Bosch. Each individual case is looked at to see whether it can be repaired. Customer support can decide to allocate drive units with certain error codes to a remanufacturing process, in which the drives are reconditioned and, after inspection, available once again to the customer fully functional. This approach helps reuse nondefective components.

► **Bosch eXchange:** The Bosch eXchange program offers Bosch customers the option to have defective vehicle components replaced with remanufactured products at specialist workshops and thereby help conserve resources. Remanufacturing is carried out at certified plants. The same standards apply to exchanged products as to original parts, and they have to pass strict function and quality assurance tests. The program is a significant factor in Bosch's automotive aftermarket product portfolio: around two million components are remanufactured here every year, saving some 3,100 metric tons of material and around 8,600 metric tons of CO₂e.

► **BlueMovement and Papillon:** BSH Hausgeräte GmbH has been offering a lease-based model for household appliances – "BlueMovement" – in the Netherlands since 2017. In 2021, the model was also introduced in Germany. The idea behind it: similar to a subscription model, customers receive a modern, resource-efficient appliance, while BSH remains the owner and is therefore responsible for maintenance, reconditioning, and recycling. Concepts such as BlueMovement are key to paving the way for a circular economy because they ensure that the appliances are reliably returned to BSH at the end of their product life cycle. A similar BSH pilot project in Belgium, Papillon is expanding this offer with a social component and helping underprivileged households use energy-efficient and cost-saving household appliances.

Lever 3: Recycled materials

The third lever of our circular economy strategy – recycled materials – covers all measures to close the loop in the economy for materials such as steel, aluminum, and plastics. This way, we use fewer primary materials and reduce our environmental impact – as well as human rights risks in the extraction of raw materials.

The measures summarized by this lever are all the more compelling because the technical solutions are already available, and the use of high-quality recycled materials in production processes has long since become established. Across all our products, the average percentage of recycled steel used at Bosch is already around 56 percent, and the share of recycled aluminum of 35 percent matches the average level in the industry.

For plastics, the percentage of recycled material that we purchase as raw material is around five percent. We intend to increase this share substantially in the coming years.

With this in mind, measures related to recycled materials are being implemented in almost all Bosch divisions. The following are some examples.

► **Consistently reducing our carbon footprint – from product design through to packaging:** Bosch Power Tools has saved more than 2,200 metric tons of plastic raw materials since 2019 by introducing cases made of recycled plastics for DIY products. The new cross line laser Quigo Green also shows just what can be achieved in terms of saving resources by measures relating to the use of recycled materials. It is the first Bosch measuring tool whose housing and accessories are made of 90 percent recycled plastic. Right from product development, one goal was to reduce the carbon footprint – of the product itself and its accessories through to their packaging. With this in mind, Quigo Green's packaging is made of 70 percent recycled paper coated with eco-friendly water-based paint and no longer contains any plastic film inside. The size of the packaging has also been optimized. In combination with other measures – for example, to improve energy efficiency – the carbon footprint has been reduced by around 40 percent compared with the predecessor product. Activities similar to those at Bosch Power Tools are also being undertaken

by BSH Hausgeräte GmbH: the Bosch Series 2 bagged vacuum cleaner is made of up to 64 percent of recycled plastic and its packaging is fully recyclable.

► **Design guide for plastic packaging:** Bosch's logistics sector is also making an important contribution to increasing the proportion of recycled materials. Building on the analysis of recyclability of the disposable plastic packaging used, the design guide for plastic packaging was developed and communicated throughout the company at the beginning of 2021. It categorizes various plastics according to their recyclability, describes their labeling, and contains recommendations for their use. In addition, a large number of other individual measures were implemented in 2021 to improve the sustainability of packaging used at Bosch. For example, one project aimed to fully reuse plastic containers as raw material, while others focused on designing new packaging or identifying new sustainable materials. To orchestrate all these individual measures and permit an overall assessment, a study was conducted to evaluate influencing factors along the entire packaging life cycle and its first results will be considered in our activities for 2022. The main focus will be placed on evaluating the sustainability aspects of packaging materials and the design/production and disposal/reuse life cycle phases.

Optimized packaging for replacement parts

Not only appliances require packaging: the over 18 million replacement parts delivered annually by BSH Hausgeräte GmbH to customers also need to be appropriately packaged. The amount of packaging and padding material needed is accordingly high. A packaging engineer at Bosch saw the potential: based in Fürth, the largest of BSH's seven logistics centers worldwide, she began to rethink packaging for replacement parts and accessories. She came up with a simple yet compelling strategy that is based on three steps: producing less material, using recycled material for unavoidable packaging, and introducing reusable packaging.

The Fürth logistics center put these recommendations into practice and was able to save 54 metric tons of padding material and almost 12 metric tons of recycled packaging. In addition, by using recycled and sustainable materials, 28 metric tons of CO₂ were saved in manufacturing padding materials, 172 metric tons of CO₂ in reusable packaging, and over four metric tons of CO₂ in plastic bags.

Lever 4: Carbon offsets

As in our approach to going carbon neutral, lever 4 is aimed at offsetting the harmful effect of materials and products on the climate by means of CO₂ allowances. However, these measures do not begin unless the potential offered by the other levers has been exhausted or the requisite measures are not feasible for technical or product safety reasons.

One example are the disposable mouthpieces (oxycaps) for the Vivatmo exhaled breath measuring device: in order to obtain correct measurement results and to guarantee optimum hygiene, the oxycaps are intended exclusively for single use. That is why carbon offsets applying the Gold Standard are used to make the oxycaps CO₂ neutral.

Design for Environment

In connection with the implementation of our circular economy strategy, the company-wide Bosch Design for Environment standard N33-6 will be revised in 2022. Anchoring the DfE principle in the product development process, the standard includes concrete design and manufacturing rules for developers and product owners that cover the entire life cycle of products – from materials used and efficiency in the product evolution process

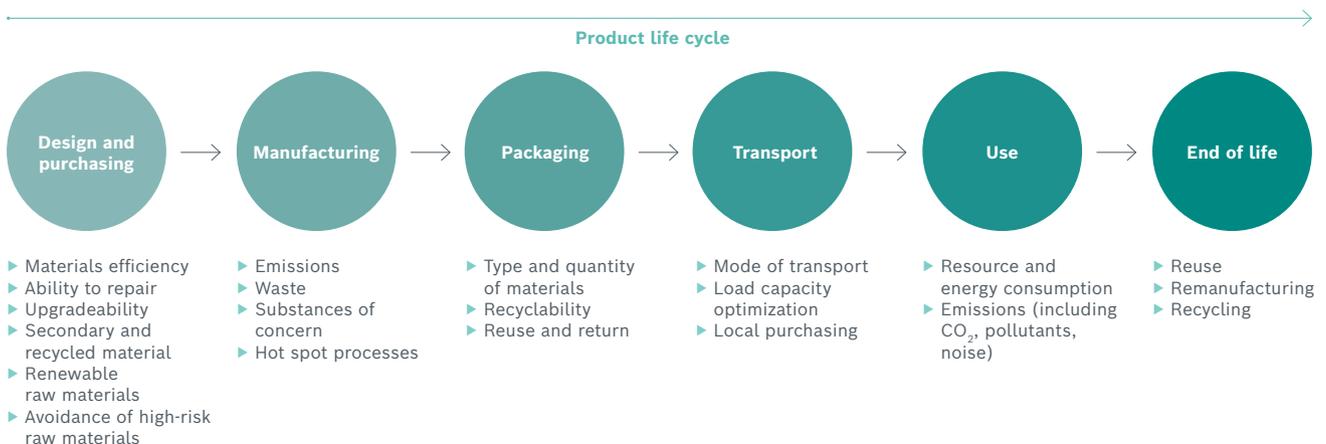
to recycling or environmentally compatible disposal at the end of the product life cycle (see Fig. 12). Compliance with the standard is reviewed as part of the quality process (see the “[Product responsibility | Our quality policy](#)” section).

Specially trained DfE owners support the divisions involved, helping them with requirements and questions relating to green product design. In addition, all divisions are in contact with each other via the DfE network. A differentiated approach is taken in implementing the DfE principle in product development: besides a checklist in the product evolution process, life cycle assessments (LCAs) are prepared.

Life cycle assessments

Based on the idea of a closed-loop or circular economy, we have been systematically conducting LCAs for major product groups since 2017. This entails an evaluation of product-specific environmental aspects in each phase of the life cycle – from purchasing to production and use right through to disposal. Among the evaluated aspects are, for example, the use of materials (including raw materials and substances of concern (SoC)), the consumption of energy and resources in the manufacturing and use phase, recycling and the use of recycled materials, and remanufacturing at the end of the product’s life cycle.

12 | Environmental aspects of Design for Environment



In principle, an LCA is performed only if it serves a particular purpose. Bosch has defined clearly delimited use cases in this respect. For example, we differentiate between LCAs for delivering key insights for product development and those intended to reveal optimization potential for series products. Depending on the use case, we distinguish between three assessment methods:

- ▶ A full-scale LCA, performed in compliance with ISO 14040 and 14044
- ▶ A streamlined LCA, allowing faster assessment of specific issues and drawing on standard database values
- ▶ In industry networks such as Catena-X, we are currently working on a common standard for use in the industry to enable effectively and securely communicating sustainability-related properties of materials and products along the value chain (also see the “[Society | Political lobbying and dialogue with stakeholders](#)” section)

In using the LCAs, our attention still focuses on the product’s carbon footprint. We want to find out which phase of the product life cycle and which materials create the biggest carbon footprint so that we can take dedicated action to reduce it in the product evolution process or in development work during production. For illustration purposes, Fig. 13 shows the carbon footprint of an eBike as certified by TÜV Rheinland.

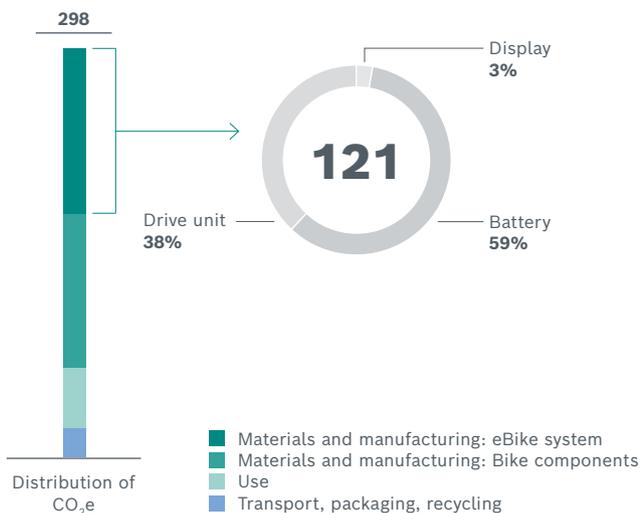
A look at the carbon footprint of each phase of the product life cycle reveals where the biggest savings potential lies. Around 75 percent of CO₂ emissions are attributable to materials and production, about 15 percent to the product’s use phase, and the remaining roughly ten percent arise from transport, packaging, and recycling. Overall, a pedelec has a carbon footprint of 300 kg CO₂e on average, of which the eBike system, consisting of motor, battery, and display, accounts for around 120 kg CO₂e. Considering the eBike components separately from the rest of the bike, some 60 percent of emissions are attributable to the battery. The assessment indicates the key drivers for all environmental factors to make corresponding improvements in current and new projects.

Safeguarding environmental and social standards by closing loops

Managing materials in a closed loop not only improves our carbon footprint, but it can also help to reduce risks arising from the use of raw materials – in line with the new requirements under Germany’s Act on Corporate Due Diligence Obligations in Supply Chains (*Lieferkettensorgfaltspflichtengesetz*) and corresponding regulations in other countries. Here, too, the various circular economy levers are effective. Using recycled materials or avoiding certain substances, for example, can effectively supplement the supply chain measures taken to date (also see the “[Supply chain | Social and environmental requirements for suppliers](#)” section).

13 | Carbon footprint of an eBike

in kilograms of CO₂e



2.2 Sustainable products and services

True to our “Invented for life” ethos, our products contribute toward sustainable development and support various Sustainable Development Goals (SDGs) of the United Nations (see Fig. 14). In this section, we take a closer look at our contribution with selected examples.

Reducing scope 3 emissions

Bosch products are already rigorously designed for energy efficiency today and keep CO₂ emissions to a minimum during their use, making them climate compatible. Against the backdrop of our climate action strategy, in 2020 we identified additional potential for reducing CO₂ emissions in the use phase of our products. Our goal is to save 15 percent of CO₂ emissions generated in the upstream and downstream stages of the value chain (scope 3) by 2030.

Roughly 90 percent of scope 3 emissions are produced in the product use phase, partly due to our products’ long service lives. To lower the scope 3 emissions further, our strategy is to concentrate our efforts wherever we can make the greatest contribution to protecting human life and the environment. We currently see the greatest potential for lowering CO₂ emissions in those fields in which products require a relevant amount of energy – above all mobility, thermotechnology, industrial drive and control technology, and household appliances. The focus is on three leverage points in each case: boosting energy efficiency, shaping the product portfolio, and using the transformation of the energy sector through the use of green electricity, hydrogen, and biogas (see the “[Environment | Energy and climate action](#)” section).

Contribution to the mobility transformation

We firmly believe that the [mobility of the future](#) should have no negative repercussions in terms of global warming and air quality, and it should remain affordable for most people. With our product range, we are making an important contribution in this respect while pursuing a holistic approach at the same time. Bosch is second to none in the range of electromobility it offers: from eBikes to construction machines, from silicon carbide chips to the preintegrated eAxle module. The result is that Bosch is recording growth in electromobility at a rate twice as high as the market and in 2021 generated sales revenue of more than one billion euros with these products and services. A five-fold increase is expected in sales revenue here by 2025. This business success will also increase the contribution we make to saving resources and climate action – while we move a step closer to our ambitious CO₂ targets.

First and foremost, it is the Mobility Solutions business sector that is driving this development. As a systems supplier for highly efficient drive systems, it plays a key role in advancing the development of electric drives with products such as the [eAxle](#) or improved thermal management for hybrid systems and electrical powertrains. At the same time, Bosch is investing in fuel cell technology and continuously developing digitalization solutions to enable further efficiency gains.

To facilitate charging electric vehicles in everyday life, Bosch has developed a new flexible charging cable with integrated control and safety technology as well as adapters for type 2 and household plugs. Even when charging at a 230-volt socket, it eliminates the typical in-cable control box – and, as a result, weighs a good 40 percent less than conventional charging cables. For charging on the go, Bosch’s Internet-based charging service offers access to over 200,000 charging points in Europe – thereby contributing to the expansion of the charging infrastructure for electric vehicles.

14 | Contribution of Bosch products to selected SDGs

Product sectors and topics

UN SDGs

Mobility

Contribution to the mobility transformation	Innovative powertrain systems and electrified mobility: electric drives, fuel cells, eBike systems	
	Mobility services: optimized battery management, connected charging solutions, connected parking, fleet management	
Invented for better air quality	Air quality solutions: immission measurement systems, scalable dispersion simulation of emission sources, real-time traffic emission data, traffic management, BME688 MEMS sensor for high-precision air quality measurement	 
	Innovative vehicle technologies: powertrain technology for low-emission vehicles, long-life iDisc brake disc rotors, regenerative braking	
Road safety	Driver safety systems: antilock braking system (ABS), electronic stability program (ESP®), pedestrian protection system, occupant protection system	
	Driver assistance systems: automatic emergency braking, adaptive cruise control (ACC), cloud-based wrong-way driver alert	

Energy systems, industrial and building technology

Implementing distributed energy grids	IoT solutions for energy systems: balancing energy network, grid optimization management, gateway manager	
	Stationary fuel cell for decentralized power generation	
Efficient industry – efficient use of resources	Industry 4.0 software platforms and sensors for analyzing data and controlling processes: Nexeed, Energy Platform, Transport Data Logger, Connected Industrial Sensor Solution	 
	Energy-efficient machines: cross-technology expertise by Rexroth 4EE	
Energy-efficient buildings	Renewable energy: heat pumps, hydrogen boilers for industrial applications and residential buildings	
	Intelligent energy management: Energy Manager in the smart home	

Sustainable home

Conserving resources at home to live sustainably	Energy efficiency: Bosch tumble dryer with heat pump technology, PerfectDry dishwasher	
	Water efficiency: i-DOS washing machines and dishwashers with ActiveWater technology	
	Fresh for longer and conscientious shopping: fridge-freezer combinations with VitaFresh freshness system, Home Connect function, and integrated camera in the refrigerator compartment	 
	Durability: Bosch Power Tools AdvancedDrill 18 screwdriver	

Health

Progress with smart farming	Sustainable agriculture: Intelligent Planting Solution System (IPS), smart spraying	
Contribution to global health and pandemic response	Healthcare and medical technology: Vivalytic for molecular laboratory diagnostics, Vivatmo respiratory gas analysis equipment, high-performance ceramics for medical technology	

Invented for better air quality

To support efforts to improve [air quality](#), Bosch has developed an immission measurement system. The compact monitoring boxes deliver reliable data on local air quality. This enables the creation of real-time air quality maps that can be used for adopting appropriate measures. Such boxes are already in operation in London, United Kingdom, and Stuttgart, Germany. Working together with the competent authorities, Bosch also collects anonymous data for traffic optimization with the aim of reducing traffic-related emissions. It is on this basis that Bosch is advising cities on traffic planning and traffic management. Appropriate measures can lower traffic-related emissions by up to 20 percent per vehicle.

Last but not least, through innovative vehicle technology Bosch can help vehicle manufacturers contribute to improving air quality. Bosch's latest diesel and gasoline technology makes it possible to significantly lower nitrogen oxide emissions and particulates. The aim is to design internal-combustion engines with emissions that no longer impact our cities' air quality in any notable way.

Road safety

With its products in the vehicle safety segment, Bosch supports Vision Zero, which seeks to reduce the number of fatalities on roads to as close to zero as possible by 2050. For example, Bosch's cloud-based wrong-way

driver warning alerts wrong-way drivers as well as all other endangered road users within seconds – much faster than any radio station. Drivers receive the life-saving warning directly via the display in their vehicle cockpit. The service is also available as a solution for smartphone applications and is already being used by 2.5 million active users in 20 European countries.

Besides personal transport, it is also possible to make public transport safer: to this end, Bosch has developed a driver assistance system for trams. In 2021, it was already being used in some 550 trams in 19 European cities to optimize accident prevention. In the event of an impending collision, it warns the tram driver with a signal first. If the driver reacts too late or not at all in the situation, the system engages the brakes independently to stop the tram and avoid accidents or at least reduce the impact as much as possible. Starting in 2022, the system will be deployed not only in Europe but also in North America and Australia.

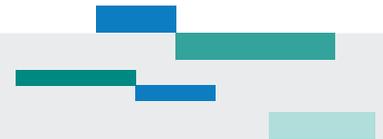
Implementing distributed energy grids

Bosch products also play a pivotal role in the energy transition, helping to achieve an energy supply without fossil fuels in the long term. Internet of Things (IoT) solutions from Bosch.IO Energy help utilities administer smart meter gateways, manage metering points and metering data, and steer grid rollouts. As a result, solu-

High-tech sensors to protect against forest fires

A new [gas sensor made by Bosch](#) serves to protect humans and nature and offers a large range of applications. The microelectromechanical system (MEMS) is the world's most compact four-in-one air quality sensor and makes it possible to detect gases in the air and measure temperature, air pressure, and humidity. The sensor – essentially a digital nose – is already being used in a Bosch customer's products and helps detect forest fires early on. The sensors are mounted on trees, where they

continuously monitor the local microclimate. They can detect even the smallest amount of smoke and wirelessly directly notify local authorities, long before camera- or satellite-based systems can. Not only can this save lives and protect wildlife and forests, but it can also reduce global carbon emissions caused by forest fires.



tions are being created for tomorrow's energy market, which will have to manage the fluctuating output of renewable energy sources. Smart systems for managing demand and supply permit smoothing of peaks in output or demand, improving the energy system's efficiency. The environmental benefit is evident: the system can accommodate a larger volume of renewable energy, CO₂ emissions are reduced, and fewer power lines are needed.

One particularly promising Bosch product development is currently on the verge of industrial implementation: the solid oxide fuel cell (SOFC). Functioning like a small, distributed power plant that converts hydrogen into electricity, it enables a decentralized and sustainable energy supply in cities and factories, in trade, and commerce. Specific areas of application can range from data centers to electric charging infrastructure. In addition, the SOFC technology helps increase the resilience of power systems when it is deployed as an emergency power generator. As a result, the technology can replace the diesel generators commonly used at present for such applications, providing a more environmentally friendly solution.

With SOFC, Bosch is continuing to drive forward the expansion of distributed power grids while at the same time pursuing its declared goal of supporting climate action with its products. Bosch is investing a total of 400 million euros in the stationary fuel cell over the period until 2024, thereby making an important contribution to the energy transition. Series production of the distributed power plants is expected to begin in 2024 at the Homburg, Bamberg, and Wernau manufacturing facilities.

Efficient industry – efficient use of resources

Industry 4.0 stands for optimal interaction between people, machines, and data. Or to put it differently: it's all about the right connectivity. According to Germany's digital association Bitkom, an accelerated digitalization scenario for industrial manufacturing in Germany could save up to 61 megatons of CO₂ by 2030. Bosch solutions support this development. The combination of artificial intelligence (AI) and the IoT, or AIoT for short, optimizes manufacturing processes while ensuring their adaptability. As a result, the efficiency of industrial operations increases while helping to conserve valuable resources.

By connecting manufacturing plants and machines using IoT systems and enabling real-time transmission of their data, it is possible to obtain a permanent transparency of a factory's entire value chain.

Bosch offers specific solutions to identify quickly and precisely where resources can be saved, and processes streamlined. These include software platforms for analyzing data and controlling processes such as the Energy Platform, which is already in use at 120 locations and in more than 80 customer projects. It makes it possible to optimize production processes by controlling heat, electricity, and compressed air using smart algorithms. Other examples include Nexeed, a software program for predictive maintenance, retrofitting, and optimization of plant and equipment, as well as relevant sensors such as Transport Data Logger or Connected Industrial Sensor Solution. The corresponding solutions are used in our own manufacturing operation as well as offered to customers.

In the industrial drive and control technology segment, Bosch Rexroth is working resolutely to continuously enhance the efficiency of its products – particularly its industrial machines – including through energy recuperation by reducing flow losses or through needs-adjusted pressure oil generation. Such measures lower the energy consumption of machinery, and the climate is better off for it. One example is Sytronix, a variable-speed pump drive that can reduce energy consumption and electricity costs by up to 80 percent using smart electronics and hydraulics. Carbon emissions are minimized at the same time. But we don't always need new machinery to find ways of reducing climate impact: Bosch also retrofits existing systems, offering suitable technical solutions to upgrade machinery with state-of-the-art communication interfaces and sensor technology (also see the "[Management approach | Circular economy strategy](#)" section).

Energy-efficient buildings

Buildings account for one-third of energy consumption worldwide. Bosch products help to reduce their consumption. To this end, Bosch Thermotechnology brings renewable energies into the home and enables their efficient use. Take, for instance, the heat pump: the focus is on digitally assisted system solutions that are easy to install. Bosch is also preparing for increased use of hydrogen in heat generation. In fact, Bosch already has an industrial boiler in its product range that is 100 percent hydrogen-ready. A prototype fully hydrogen-ready boiler for household use was unveiled in 2020. For 2022, it is planned to introduce the first hydrogen-ready gas-fired heating boiler as part of a publicly funded demonstration project in the United Kingdom. Bosch is thus gearing up for the defossilization of the energy supply. The adjustments to our thermotechnology product portfolio directly support our climate action goals.



[Sustainability](#)
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In residential buildings, smart thermostats help to save energy by factoring in local weather data in the temperature management system. In addition, Bosch Thermotechnology's Energy Manager software intelligently connects a variety of components, among them heat pumps, photovoltaic systems, and household appliances. As a result, it is possible to efficiently manage energy consumption, generation, and storage, while enabling both the use of self-generated electricity and efficient heating. Operators and the environment benefit equally: by combining heat pumps and photovoltaic systems alone, the Energy Manager can lower electricity consumption by as much as 60 percent.

On top of that, Bosch Building Technologies offers individual system solutions, technologies, and services to optimize the energy consumption of buildings. In a first step, our experts get an overview of the building's total energy consumption. They then develop a tailor-made and future-oriented energy concept that perfectly fits the given building.

Conserving resources at home to live sustainably

Products from [BSH](#) and [Bosch Power Tools](#) help households save energy, water, and resources every day. For example, a Bosch dishwasher with natural zeolite mineral consumes up to 20 percent less energy than conventional appliances. Indeed, Bosch tumble dryers equipped with heat pump technology can lower energy consumption by as much as 68 percent compared with conventional condenser dryers.

Solutions such as the automatic dosing of detergent in fully automatic washing machines or our efficient dishwashers reduce water consumption. In fact, a household with a Bosch dishwasher saves up to 8,500 liters of water a year compared with washing dishes by hand. With the VitaFresh freshness system, Bosch is also making its contribution in the fight against food waste. Furthermore, it is the BSH division's practice to continuously phase out less energy-efficient products, thereby providing additional support for our CO₂ targets.

Last but not least, Bosch products contribute to the conservation of resources through their durability. Take, for instance, the AdvancedDrill 18 screwdriver from Bosch Power Tools, which is equipped with a brushless motor for a significantly longer service life and greater power. More than that, the motor features electronic control, lower heat dissipation, contactless and nonwear operation, and optimal operating efficiency.

Progress with smart farming

Offering digital solutions for technological progress, Bosch is also helping to conserve resources in farming. For example, Bosch is cooperating with BASF on a system for target-based application of fertilizers and intelligent seed placement. This not only reduces the amount of resources used; it also helps to protect the land, as a valuable resource, from overfertilization and other effects that jeopardize the ecological balance. To this end, Bosch is contributing its Intelligent Planting Solution System (IPS). The system enables farmers to

effectively optimize seed planting in particular based on automatic seeding control. Bosch developed the components and interfaces that were needed for the project and is responsible for the overall system integration of the planting and seeder machines. IPS can save growers up to 20 percent in seed. In addition, precision dosage of fertilizer prevents overfertilization of the soil. As a result, crop yields are optimized and the environmental burden reduced.

To drive further progress in smart farming, a 50:50 joint venture between Bosch and BASF Digital Farming is intended to market and sell such technologies worldwide from a single source in future. The antitrust authorities gave their official approval for it in 2021. The joint venture has been registered under the name of Bosch BASF Smart Farming (BBSF) GmbH.

Contribution to global health and pandemic response

Bosch Healthcare Solutions develops products and services that contribute to better health and improve people's quality of life. Quick and simple diagnostics combined with convenient regular checks of the values measured afford patients greater peace of mind, flexibility, and autonomy in their everyday lives. With this in mind, Bosch Healthcare Solutions is focusing on three areas: diagnostics for respiratory diseases, therapy management, and medical technology components made of high-performance ceramics.

For example, the universal platform Vivalytic for molecular diagnostics enables fully automated analysis of a variety of samples. As a result, infectious diseases can be diagnosed more easily and, above all, quicker. Vivalytic is thus also making an important contribution in the fight against the Covid-19 pandemic. The Vivalytic SARS-CoV-2 Pooling Test permits analysis of 15 samples simultaneously and in under 45 minutes directly on-site where the samples were taken. This means the samples do not need to be transported to laboratories, minimizing the time it takes to get the test results. Available since September 2021, the solution is based on a high-quality PCR method.

In the field of therapy management, Bosch Healthcare Solutions develops fast and easy-to-use measuring devices for doctors' practices and for home use, thus establishing an important prerequisite for the best possible therapy and progress monitoring of asthmatic conditions. The Vivatmo FeNO measuring device, for example, enables straightforward daily monitoring of chronic respiratory diseases.

For people suffering from a reduced hemoglobin concentration in the blood – around 1.6 billion people globally according to WHO estimates – Bosch Healthcare Solutions has developed a portable hemoglobin monitor solution. It enables screening of a large number of people quickly, safely, and using a noninvasive approach. Especially for regions where routine access to medical care tends to be difficult, this is important progress. The system was designated a CES 2021 Innovation Award Honoree in the "Health and Wellness" category.

2.3 Product responsibility

Safe, high quality, and reliable – that is the maxim for our products to respond to our customers' expectations. In developing and manufacturing these products and rendering services, our actions are guided by the principle of legality and our "Invented for life" ethos.

Our quality policy

Quality guides our actions at Bosch and is at the core of our brand promise. Each of our products offers utmost quality and reliability – regardless of where it was produced or where it will be used. Binding quality principles apply throughout the Bosch Group. Quality management is coordinated and steered by the corporate department for quality. Local officers are responsible for operational implementation at individual company locations. The majority of our development and manufacturing sites have a quality management system certified according to ISO 9001. All sites that manufacture vehicle components are certified according to IATF 16949 standard, which is based on ISO 9001 and was developed by the International Automotive Task Force (IATF).

THE SAFETY OF OUR PRODUCTS CONSTITUTES A CENTRAL ELEMENT OF OUR QUALITY POLICY.

Due to our wide-ranging product portfolio, we apply a large number of different laws and regulations governing quality assurance. We take these requirements on board already in the product evolution process, and we have defined various policies for that purpose. Applicable throughout the company, the Quality Policy and Quality Management guideline plays a central role to this end. It creates a binding framework for setting quality objectives and commits the organization to continuously work to

improve the quality management system. Environmental aspects are taken into account in the product evolution process as part of a checklist that takes account of the DfE principle.

Product safety

The safety of our products has utmost priority and constitutes a central element of our quality policy. A central directive applicable worldwide regulates the corresponding responsibilities. It ensures compliance with both legal requirements and our customers' specifications with regard to product safety. In addition, it sets out rules for the delivery of error-free and safe products.

Bosch's globally applicable Product Development Code further prescribes that human life must be safeguarded to the greatest extent possible. To this end, products are designed, developed, and manufactured such that they do not pose any unacceptable risk. Our products also use state-of-the-art technology.

At every stage of the product evolution process, attention is paid to product safety. Starting with product development, we attach great importance to safety testing and comply with standards, such as ISO 26262, which deals with the functional safety of systems in passenger vehicles. Products are not released for series production until all safety aspects have been fully clarified. In addition, compliance with pertinent specifications must be established and demonstrated with appropriate tests.

For safety-relevant products, all operating units are required to assign adequate resources to conducting analytics covering the end-to-end product life cycle. Each operating unit and all associates are responsible within the scope of their work for ensuring that only safe products leave the factory. Avoiding errors is a major priority.

Comprehensive training establishes the preconditions for ensuring that everyone in the company is committed to, and puts into practice, Bosch's quality standards. For associates whose activities directly influence product quality, our compliance training also includes Web-based modules on product safety and product liability, which are part of the basic compliance training that must be renewed every two to three years. In 2021, some 141,000 associates took part in this training. To deepen their knowledge, the product safety and product liability officers of the various divisions have access to more in-depth classroom and online training courses.

Information and documentation requirements

We consider it a matter of course to provide specific and up-to-date information on our wide range of products, and we comply with the corresponding information and documentation obligations. Manuals are designed to ensure adequate safety when the product is used as intended or in a foreseeable manner. At a minimum, manuals contain a description of the product's intended use and operating environment, as well as the limits and restrictions on use. In addition, they contain warnings of possible hazards and safety risks, especially if these are not directly and unambiguously recognizable by the user.

Where necessary, we help users so they are able to use the product correctly and operate it safely. For example, Bosch Automotive Aftermarket offers learning courses for workshop staff, while BSH concentrates on end customers. Bosch Rexroth and Bosch Thermotechnology offer similar services. Safety data sheets are available for handling substances and mixtures; in the Automotive and Power Tools divisions, these are also available online.

Use of substances of concern

At Bosch, substances of concern (SoC) are all substances in production aids or products that are classified as prohibited or subject to declaration duties by law, under customer agreements, or pursuant to in-house requirements. We are continuously working to identify SoCs in our products and processes, adopt substitutes, and reduce or altogether avoid hazardous substances in the long term wherever possible. For example, where technically feasible, we endeavor to dispense with substances on the EU's REACH (European Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals) candidate list in new developments. Our mandatory internal DfE standard defines the requirements for handling SoC in the product development process. If SoC are unavoidable in the production process for technical reasons, hazard assessments are carried out to ensure suitable protective measures are taken for the safe handling of such substances.

Systematic management of data on materials

At present, there are more than 13,000 statutory, industry-specific, and customer-specific regulations worldwide governing materials restrictions and declaration duties, which are also continually changing and becoming more extensive. Around 1,100 of these regulations are currently relevant for Bosch worldwide, including the EU's REACH or the Toxic Substances Control Act (TSCA) in the United States. Keeping a constant eye on all the resulting requirements and initiating the adjustment measures needed in response to any changes is a task performed at Bosch's corporate headquarters.

We have built a central IT system – MaCS (Material Data Management for Compliance and Sustainability) – to efficiently manage materials prohibitions and restrictions, in particular for products. The Sustainability and EHS corporate department is responsible for the technical coordination and continuous development of the IT system and processes. An external specialist service provider also supports the permanent process of updating and managing the data in MaCS.

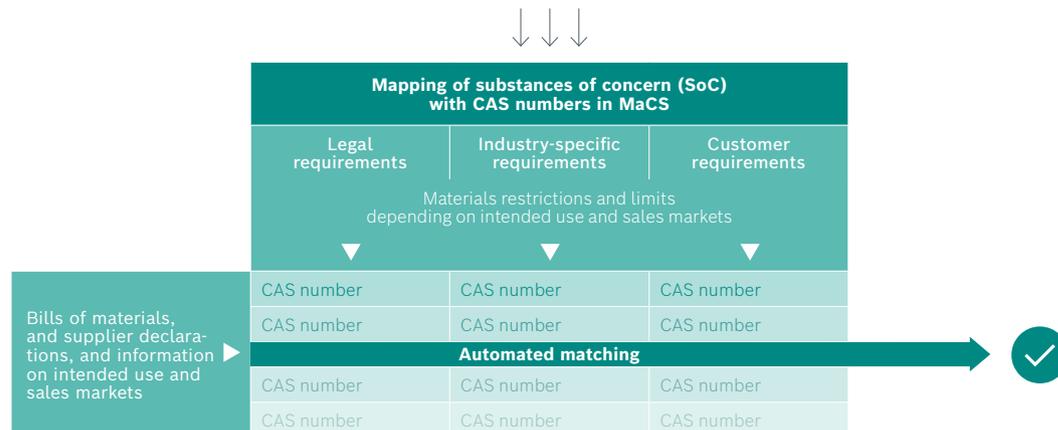
All SoC are rendered in the MaCS system using distinct identifiers such as Chemical Abstracts Service (CAS) numbers. This approach takes into account the intended use and the respective sales market as well as information on materials restrictions or defined limits. MaCS currently covers more than 21,000 identification attributes. Algorithms that map the relevant materials restrictions and declaration regulations automate the process of matching bills of materials and associated supplier declarations against the pertinent requirements. To enable checks, MaCS maps the individual components of a product in the form of a bill of materials.

It also includes the supplier declarations that are made available to us via systems such as the International Material Data System (IMDS), Compliance Data Exchange (CDX), and Bosch's declaration format. These indicate for individual components the substances contained and their concentration levels. By linking bills of materials and supplier declarations, it is possible to make accurate statements about the substances contained in each component.

15 | MaCS – Material Data Management for Compliance and Sustainability

Some **13,000** legal as well as industry- and customer-specific regulations on materials restrictions and declaration duties worldwide

Some **1,100** regulations are currently of relevance for Bosch worldwide



Specifications for suppliers

Publicly available, Bosch's standard N 2580-1 regulates the nature and scope of suppliers' declaration duties vis-à-vis Bosch with regard to SoC in materials. It is an integral part of the materials specifications Bosch contractually agrees with its suppliers. Applicable throughout the company, the requirements are based on the relevant legal regulations, although they are significantly stricter in some cases. Industry standards such as the Global Automotive Declarable Substance List (GADSL) or the requirements of specific customers are also taken into account.

We require our suppliers worldwide to apply the N2580-1 standard and confirm this via a defined process. An expert group with representatives from all operating units reviews and updates the standard's content every six months. In addition, our Group Policy for Conflict Raw Materials regulates the handling of conflict minerals (also see the "[Supply chain | Social and environmental requirements for suppliers](#)" section).

Nanotechnology

Bosch is either not active in the areas of application in which nanotechnology is used in quantities of relevance or it uses alternative substances and technologies. The only exceptions are a small number of applications in our household appliances – with nanoparticles firmly bound in the product in those cases. Even though we do not need to take action in this respect at present, we constantly monitor the related discussions and analyses – for example, of the European Chemicals Agency (ECHA).

IT security, information security, and data protection

IT security, information security, and data protection are elementary components of our quality standards at Bosch. We see trust in the security of systems and data as well as their resilience to attacks involving manipula-

Digital trust – we can't do without it

In striving for technological progress, Bosch has in all its activities always focused its attention on trust and responsibility. This is true in the physical world and to an even greater extent in the digital sphere, where mutual trust is the basic prerequisite for successfully advancing digitalization and connectivity.

With this in mind, Bosch established the Digital Trust Forum in 2019. The international initiative has set itself the objective of considerably increasing the trust placed in AI and IoT-based solutions. Above all, we are working with our partners to define trust-building guidelines and possible certification and conformity labels. These will be used as a basis for AI products that satisfy specific criteria to receive a digital trust seal.

At Bosch, digital trust involves transferring the "traditional" quality and value proposition to the digital world. In this highly dynamic and constantly evolving sphere, too, we want to ensure that our products are trustworthy and reliable for our customers. This includes handling data in a responsible and transparent way. Products that use AI are also based on the Bosch code of ethics for AI, to which we committed back in 2019. The latter is now being used to develop, together with the German Association for Electrical, Electronic, and Information Technologies (VDE) and other industry partners, the above-mentioned trust seal.

tion as a crucial determinant of success in realizing our AIoT strategy. This also means managing user data in a responsible manner.

A cross-functional steering committee, which includes the Data Protection Officer, the Chief Information Security Officer, the Chief Cyber Security Officer, and the Chief Digital Officer, reports to the board of management twice a year at a meeting specifically convened for that purpose. Furthermore, we have set up a separate corporate office that is responsible for the IT security of our products. A clearly documented process ensures that IT security is widely integrated in development activities.

Related guidelines and central directives cover all relevant areas of IT security, information security, and data protection at Bosch. Binding instructions relating to IT security are contained in the two central directives “Cyber Security Management System” and “IT Security,” which govern the development of products and services as well as the operation of servers and other IT systems throughout the group. In addition, the “Information Security and Data Protection” group guideline, which is binding for all associates, defines principles, responsibilities, and tasks relating to company information security and data protection. All regulations are revised and updated regularly. Our subsidiary ESCRYPT also provides the specialist know-how.

Despite all precautionary measures, it is clear that there is no such thing as a foolproof security system, even in information technology. That is why we have established the [Bosch Product Security Incident Response Team \(PSIRT\)](#). The team serves as a central point of contact for security researchers, partners, and customers should they detect any vulnerabilities in our products. Security

gaps can also be passed on through our whistleblower system (see the [“Company | Corporate governance and compliance”](#) section). When a solution has been found, we make it transparent online for all our customers.

Customer satisfaction

The trust of our customers in our services and in the quality of our products is our highest priority. The diverse customer services offered by our divisions range from knowledge databases with interactive learning programs, repair and maintenance services, and a service portal for energy-related refurbishment through to advice on subsidy rates and climate action programs relating to heating systems (also see the [“Management approach | Circular economy strategy”](#) section). At the same time, we make use of all opportunities to engage in direct and indirect dialogue with customers – for example, through our service hotlines, by email, or in direct talks. In fact, we view our customers’ feedback as a reliable yardstick against which we can measure our actions.

In the markets where we generate the greatest sales revenue, we ascertain Bosch’s corporate reputation every two years. At present, the survey covers 19 countries and includes approximately 11,400 interviews in total. On a scale from zero to 100, Bosch’s reputation value is currently around 80 points, a very good level across all markets. The results of this study form the basis for deriving appropriate measures for the company as a whole as well as at the national level.

Marketing and sponsorship

When we market our products, we refer to our Bosch values for guidance as well as four central principles: value cultural diversity, make reliable and credible statements, be fair, and respect national rules. In addition, we are committed to maintaining a quality level in all our marketing activities that matches our products' performance standards. In this respect, advertising can be humorous, creative, and competitive, but not unprofessional or untrue. To ensure that these principles are applied and messages are consistent across the complete media mix worldwide, overarching marketing communication is organized centrally and closely coordinated with the regional organizations and divisions. Product marketing is mostly managed locally by the respective divisions.

Our sponsorship activities mainly serve promotional purposes – that is, strengthening our brand. They are governed by a central directive that was revised in 2020 and combined with other brand-related regulations. These regulations stipulate, among other things, that sponsorship measures must be integrated into an overall communications strategy or concept. The objective of measures also has to be clearly defined and focused on increasing brand recognition and reputation, promoting sales, or attracting qualified talent. Corporate headquarters must be consulted for sponsorship measures in excess of 30,000 euros.

Motorsports is one of the focal points of our sponsorship activities: since the end of 2018, Bosch has been an official partner of the ABB FIA Formula E Championship, the world's first racing series for fully electric formula racing cars. Since 2020, Bosch has also been a technology partner and sponsor of the Japanese Super GT500 series.

Award-winning customer service

Our commitment is regularly recognized by external, independent institutions. In the reporting period, BSH was acclaimed as “service champion in the household appliances industry” for the seventh consecutive time in Germany's largest service ranking. The ranking is compiled annually by Service Value GmbH in cooperation with Goethe University Frankfurt am Main and daily newspaper DIE WELT. Bosch Power Tools also receives an excellent ranking time and again and can boast being the “service champion” of tools manufacturers for the past eight years. Furthermore, in 2021 over 280,000 respondents voted Bosch Thermotechnology to the top in the “Focus Money” Germany test for offering the best customer service in the household technology industry.

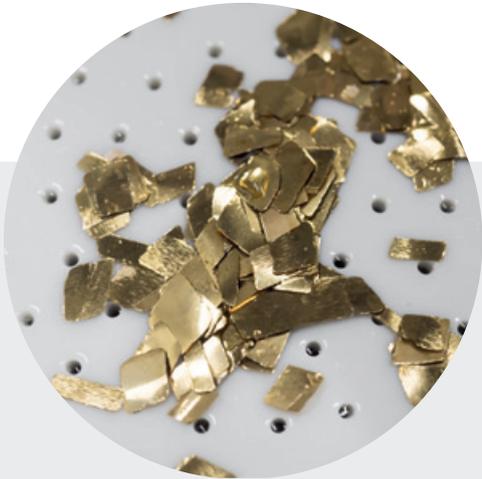
SUPPLY CHAIN

Our ambition: Based on a common understanding of ethical and sustainable action, we want to find solutions to the global social and ecological challenges of our time together with our business partners.



Social and environmental standards

- ▶ Code of Conduct for Business Partners revised and specified.



Minimizing risk

- ▶ Fifteen raw materials analyzed: risks reduced through targeted programs.



Transparency

- ▶ Information on carbon accounting and climate action activities obtained for a quarter of our purchasing volume.



Global Supplier Award

- ▶ Suppliers selected in the new “sustainability” category for the first time.

3.1 Management approach

We firmly believe that stable and at the same time sustainable supply chains are the only basis for companies to survive in global competition – and thus contribute to social prosperity. Sustainability is hence becoming the key factor for companies' future viability. For Bosch, that means responding with even greater agility, speed, and transparency to ever more specific customer wishes – while satisfying the most exacting quality standards. It is critical in this respect to enable innovation, quality, and excellence throughout the supply chain end to end while achieving globally competitive pricing for our customers. To achieve supply chain excellence, Bosch believes in close and trust-based cooperation between everybody involved, across company and national borders.

Bosch is continuously working to increase the company's resilience while driving its sustainable transformation – through transparent supply chains characterized by supplier networks that foster competition and innovation. We maintain local and regional supplier relationships worldwide. In addition to regional proximity, the shared commitment of all stakeholders to sustainability and compliance is critical to success. In this way, it is possible to mitigate risks, to jointly avoid bottlenecks, and to increase the economic capacity of all parties involved.

The strategic importance for our company of sustainable supply chains is also evident in our vision for sustainability. Respect for human rights is the focus here, along with occupational health and safety, environmental protection, and climate action. Consistent with this stance, we also support the UN Guiding Principles on Business and Human Rights, as well as the German Federal Government's National Action Plan (NAP) for Human Rights.

Note on the consolidated group:

Due to the different systems and structures in purchasing, the statements and key performance indicators in this section have been prepared without taking BSH Hausgeräte GmbH into account. Work is underway to consolidate these disclosures in the near future.

Bosch has supply relationships in some 50 countries. From its roughly 24,000 suppliers worldwide in total, the Bosch Group (including BSH Hausgeräte) procured materials and services worth 43.4 billion euros in 2021 (previous year: 35.1 billion euros). Purchasing volumes thus exceeded the precrisis level of 2019. A large share of the resources used in our supply chain are purchased components – mostly semifinished products or finished components. We purchase only a small proportion directly as raw material.

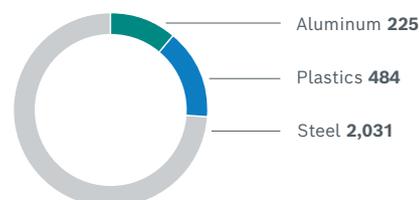
Purchasing and logistics organization

Worldwide, Bosch employs some 9,400 associates in purchasing and around 21,000 associates in logistics. They are involved in the entire product evolution process – from the innovation phase to the start of production right through to the end of aftermarket supplies – and they work worldwide to secure Bosch's supply chain excellence. The head of the Supply Chain Management corporate department reports directly to the member of the Bosch board of management responsible for finance. The corporate department coordinates internal and external requirements, establishes company-wide standards, and monitors their compliance.

16 | Key materials used

Bosch Group (incl. BSH Hausgeräte),
in 1,000 metric tons

Total ————— 2,740



Manufacturing materials are purchased based on a decentralized organization with responsibility awarded to the divisions. In contrast, materials and goods that are not directly related to products are procured centrally by indirect purchasing.

Purchasing managers are responsible for ensuring compliance with sustainability requirements, which are clearly communicated already at the supplier selection stage. Purchasing departments commission an internal service organization, among others, to conduct a compliance review. The latter carries out sustainability-related assessments and, where necessary, also supports any escalation processes required (also see the "Supplier assessments" section).

Clear rules for responsible supply chain management

Based on company-wide guidelines, we ensure risk management and structured sustainability activities in relation to our supply chain. In 2021, we issued a new central directive that frames procedures already in place in a uniform set of rules and supplements them with new content, thus laying down a more comprehensive basis for implementing corporate social responsibility and

sustainability in Bosch's supply chains. The divisions will implement the corresponding requirements in their processes in 2022. In a next step, internal targets based on selected key figures will be agreed with the divisions for continuous improvement. In this way, we take into account the increasing importance of stable and sustainably designed supply chains for Bosch. Applicable company-wide, in particular the directive regulates committing suppliers to sustainability requirements, introduces a mandatory risk analysis of possible noncompliance with social or environmental standards in supply chains, and requires divisions to define appropriate preventive or remedial measures on this basis. Furthermore, it defines the standard for internal reporting.

Purchasing departments verify supplier compliance with the requirements based on risk analyses and risk-based target setting. In addition, they ensure the handling of complaints and any indications of potential noncompliance. Purchasing departments take rigorous remedial action in response to any violations of the sustainability requirements identified.

17 | Responsible supply chain management at Bosch



3.2 Social and environmental requirements for suppliers



[Terms and Conditions of Purchase](#)

[Code of Conduct for Business Partners](#)

The Basic Principles of Social Responsibility at Bosch and the ten basic principles of the United Nations' Global Compact are the foundation for our understanding of sustainability. On this basis, in our Code of Conduct for Business Partners we require that our suppliers comply with the generally applicable labor standards as laid down in the Fundamental Principles of the International Labour Organization (ILO). This includes, among other things, renouncing forced labor and child labor, not permitting any form of discrimination, guaranteeing occupational health and safety, creating fair working conditions, and ensuring freedom of association. With respect to the treatment of workers, we refer to local law. For instance, minimum wages must be paid in accordance with applicable statutory requirements.

In addition, suppliers are required to take appropriate measures to ensure health and safety in the workplace. While working on Bosch premises, they are additionally bound to Bosch's safety and accident prevention regulations. We also require our suppliers to protect the environment and conserve resources – and to likewise pass our requirements on to their own suppliers. If there is any suspicion of noncompliance, the supplier is required to resolve the matter – if necessary, by disclosing their supply chain.

To further specify the existing requirements, a comprehensive revision of the Code of Conduct was initiated in 2021, focusing in particular on aspects of environmental protection. For example, the revised version explicitly addresses issues such as climate action; the use of resources such as water, air, and soil; and the use of materials. The use and disposal of substances of concern are now also regulated in more detail. As part of the revision, the social standards Bosch requires were also further specified. The revised Code of Conduct will be published in 2022. Referenced in particular in the Terms and Conditions of Purchase as an integral contractual element, the Code of Conduct is handed out to all suppliers at the beginning of the business relationship. It is publicly available on the Bosch website.

Our business partners are required to conserve resources and reduce the impact of their activities on the environment to a minimum. We expect our suppliers to set up and continuously refine, within reason, an environmental management system certified to ISO 14001. The standard requires systematic environmental protection and continuous improvement and is a module in Bosch's efforts to ensure the sustainability performance of suppliers. In 2021, some 5,250 of our suppliers were certified. Suppliers without manufacturing operations are not required to adopt an environmental management

18 | Environmental and social standards in the Code of Conduct for Business Partners

Environmental standards:

- ▶ Environmental protection
- ▶ Climate action
- ▶ Water consumption and quality
- ▶ Air and soil quality
- ▶ Materials and waste management
- ▶ Substances of concern

Social standards:

- ▶ Human rights
- ▶ Prohibition of child and forced labor
- ▶ Freedom of association
- ▶ Equal opportunities and fair conduct
- ▶ Fair working conditions including minimum wages and working hours
- ▶ Occupational health and safety
- ▶ Protection against eviction and deprivation of land
- ▶ Use of private or public security forces

system, but they do have to implement corresponding measures. With regard to wastewater treatment and hazardous waste, our business partners must comply with legal requirements. We have concluded quality and corporate social responsibility agreements with around 9,400 suppliers. Supplementary to the Terms and Conditions of Purchase, these agreements set out requirements for the declaration of substances in accordance with Bosch standard N2580-1 “Prohibition and Declaration of Substances,” which must also be passed on to sub-suppliers (also see the “[Products | Product responsibility](#)” section).

Our contractual agreements also take into account that substances may be viewed critically in terms of sustainability. For example, suppliers who recycle lead must allow specific sustainability assessments by Bosch in our upstream supply chain. In addition, such suppliers are required to transparently present their entire supply chain through to the recycler.

Reducing CO₂ emissions

It is our declared aim to systematically lower CO₂ emissions in the upstream and downstream stages of our value chain (scope 3) by 15 percent by 2030 (see the “[Environment | Energy and climate action](#)” section). Close cooperation with our suppliers will be essential if we are to achieve this goal. That is why Bosch is setting clear targets in this area, too, and supporting its business partners in their climate action activities. One of the measures we have taken was to identify the main emitters among our suppliers.

In the course of 2021, we began to replace the initial figures previously determined using statistical models with real data from the respective suppliers. To this end, a total of around 1,000 suppliers were contacted via the platform of the Carbon Disclosure Project (CDP) and through Bosch’s direct inquiries. After evaluating the responses, we now, for the first time, created transparency on the status of carbon accounting and activities of the respective suppliers for around one quarter of our purchasing volume. We intend to increase this share, together with the data quality, substantially in the coming years.

Consistently increasing data quality

Clear rules and targets require uniform definitions and calculation standards because this is the only way to make performance transparent and comparable. This is particularly true when it comes to jointly advancing sustainability issues across entire supply chains. Knowing that international standardization is still lacking and that the information currently available is sometimes of poor quality, we rely on a combination of approaches to obtain our supply chain data, thus improving the quality and comparability of the data collected.

- ▶ **Input-output models:** These models use secondary data at company level and have the advantage of evaluating all suppliers by reference to comparable standards. Since the average values are based on industry sectors and regions, they allow basic strategic management but are not suitable for evaluating individual suppliers.
- ▶ **Life cycle assessments (LCAs):** In contrast to the input-output models, these assessments use both primary and secondary data at product level.
- ▶ **Supplier surveys:** By directly requesting concrete data from the respective suppliers, it is possible to gain transparency on their specific development. However, the values recorded are still subject to a certain degree of inaccuracy – for instance because the corresponding calculations are based on subsets of sales.
- ▶ **Product inquiries:** Directly inquired product-related information affords the greatest possible transparency and accuracy. However, a lack of international standards currently still makes data comparisons difficult.

Our aim is to gradually increase the share of primary data and at the same time identify key areas for action in our supply chains in order to stimulate the implementation of concrete measures here as quickly as possible. At the same time, we are actively working on cross-company standardization along the complex value chains in the automotive sector and are involved in initiatives such as [Catena-X](#) and [Drive+](#).

In the future, we want to take greater account of carbon emissions and associated climate action activities when awarding tenders. With this in mind, we developed qualitative and quantitative award concepts in 2021 and piloted them in all relevant divisions. In addition, we intend to contractually commit selected suppliers to join the Science Based Targets initiative (SBTi) in 2022.

We are aware of the importance of these steps for our suppliers and have already been regularly informing them of our activities since 2020. At the same time, our aim is to motivate suppliers to engage in climate action activities of their own. Furthermore, a cross-divisional and cross-functional team coordinates the activities.

Logistics – making transports environmentally friendly

In logistics, we aim above all to reduce CO₂ emitted during the transport of goods. We have three main levers at our disposal for this purpose: reducing air cargo, pooling freight, and consistently applying the total cost of ownership (TCO) approach, which factors in key cost components such as freight costs and customs duties. Whenever possible, the aim is to switch shipments destined for Bosch from air to sea or rail freight. Corresponding options are continuously being examined. Since 2019, this approach has allowed us to save around 200,000 metric tons of CO₂.

Transport management centers (TMC) have been established worldwide to manage shipments between suppliers, Bosch plants, and customers. We have already achieved a high degree of standardization in this area and can guarantee efficient transport – also with respect to environmental criteria – by pooling freight. To secure even higher capacity utilization, especially for road shipments, a new transport management system will be introduced at Bosch in 2023. Our aim here is to reach a capacity utilization rate of 80 percent by 2025. To this end, we are focusing on improving the data quality on packaging sizes and weights as well as on rolling out the Eurolog software platform. Scheduled to be introduced at Bosch in 2022, the platform will enable greater pooling of shipments.

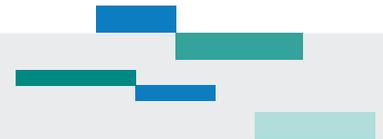
As part of our total cost of ownership (TCO) approach, which takes into account significant cost components such as freight costs or customs duties, we optimize the number of shipments and their capacity utilization, thereby keeping CO₂ emissions to a minimum. The proximity of potential suppliers to our sites is therefore an important selection criterion. In a joint initiative with the divisions, work is also underway to increase packing density in a bid to use less packaging material, storage space, and transport capacity – in turn, avoiding CO₂ emissions.

Due to special freight in connection with the Covid-19 pandemic and other disruptions to global supply traffic, Bosch's logistics-related CO₂ emissions increased in 2021 compared with 2020, returning to pre-pandemic levels at just under 1.9 million metric tons of CO₂.

Reusable without detours: fast-track returns from suppliers to Bosch

Reusable packaging saves resources, generates less waste, and improves the carbon footprint with every cycle compared with single-use packaging. For this reason, Bosch also provides its suppliers with reusable empties and optimized its empties management for this purpose in 2021. Our goal is for packaging materials to arrive back at Bosch within three days. On average so far, it has taken six to ten days; before we started optimizing

empties management, it took 30 to 60 days. Both Bosch and the suppliers themselves benefit from the significant increase in the availability of reusable packaging. In addition, since the start of the project, around 165,000 previously unused packaging materials have been put back into circulation and can now be used again – multiple times, of course.



Risk analysis to ensure compliance with social and environmental standards

In addition to climate action and protecting the environment, we also focus on social aspects in the sustainable design of our supply chains. In particular, respect for human rights is our highest priority. Against this backdrop, in 2020 we analyzed the risk of potential violations of human rights in the Bosch value chain, ranking the following four areas highest:

- ▶ Occupational safety (see the “[Associates | Occupational health and safety](#)” section)
- ▶ Work conditions in raw materials extraction
- ▶ Health and environmental impact of products (see the “[Products | Management approach](#)” section)
- ▶ Equal opportunities (see the “[Associates | Employer of choice](#)” section)

Given the particularly high risk associated with the field of raw materials extraction from an environmental and social perspective, we have set this as one of our initial priorities. That is why in 2020 a detailed risk analysis was carried out to systematically identify the raw materials of relevance for the Bosch Group that could pose significant risks, particularly in the deeper supply chain (see Fig. 20). We have drawn on reports from nongovernmental organizations (NGOs) in order to include the views of those affected. We have also taken into consideration violations that have come to our attention through media reports. The risk analysis was subsequently supplemented to include additional aspects, such as the future business orientation and the raw materials requirements of our divisions.

The next step in 2021 was to develop a cross-company concept to mitigate the risks arising from the procurement of products and semifinished products which, according to our analyses, contain particularly high-risk raw materials. To this end, risk minimization programs will be implemented over the next three years following a defined scheme, which is run through step-by-step for the respective raw materials (see Fig. 19).

Consistently respecting human rights – throughout the supply chain

Following its adoption by the German Bundestag and Bundesrat in June 2021, the German Act on Corporate Due Diligence in Supply Chains (*Lieferkettensorgfaltspflichtengesetz*) will enter into force in Germany in 2023. It is intended to improve the respect of human rights internationally by defining requirements for responsible supply chain management. Bosch is also preparing intensively for the implementation of the new regulations. A number of processes and responsibilities have already been adjusted accordingly.

For example, compliance with human rights is addressed in the highest expert committee for sustainability at Bosch, the Sustainability Steering Committee. In addition, a human rights committee was set up at the divisional management level to define the strategic direction of this topic area in the future. A newly established project team, in which all relevant departments are represented, is driving forward work on this topic. The activities are coordinated by the Sustainability and EHS corporate department. We are thus creating the framework for managing human-rights-related issues in a comprehensive and legally compliant manner.

As part of these programs, company-wide measures on cobalt and rare earths will be initiated in 2022. In parallel, the activities already underway on the conflict minerals cassiterite (tin), coltan (for tantalum), tungsten, and gold (3TG) are being intensified. The raw materials aluminum, lead, natural graphite, lithium, and natural rubber will follow in 2023, while measures for the raw materials copper, manganese, nickel, and platinum will be implemented from mid 2024.

Important activities were already initiated or continued in this context in 2021 (see Fig. 20). For example, strategic suppliers of lithium-ion batteries have been required to disclose their entire supply chains for the raw materials cobalt, graphite, lithium, manganese, and nickel. Bosch has also conducted co-audits and CSR assessments in the supply chains for battery cells and electric motor components as well as magnets (rare earths). In addition, at the discretion of the divisions, certifications or audits of suppliers and their sub-supply chain are requested to ensure that high-risk suppliers comply with our sustainability requirements. Where the pandemic allowed, supply chains were also reviewed on-site in 2021 for the sourcing of recovered lead for starter batteries.

Bosch has been participating in Conflict Minerals Reporting since 2014 and in Cobalt Reporting in accordance with the Responsible Minerals Initiative (RMI) since 2021. In addition, we work to ensure that suppliers of materials containing conflict materials or cobalt have the smelters in their supply chains certified by RMI.

Bosch is also active in the “Automotive industry dialogue: Respect for human rights along supply and value chains” of the German Federal Ministry of Labor and Social Affairs, focusing on the use of lithium and on the establishment of a cross-company complaints mechanism in the automotive industry. Bosch is actively involved here, among other things, in shaping recommendations for action on the mining of lithium to ensure that human rights are respected in the extraction of raw materials. The corresponding recommendations are analyzed jointly by stakeholders from the business community, civil society, trade unions, and the federal government. At a cross-company level, we are also involved in the econsense association (Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e. V. – Forum for Sustainable Development of German Business). Within the forum’s “Human rights and supply chain” cluster, we work together with other partners on how to responsibly design global supply chains.

19 | Risk minimization process



20 | Measures to counter human rights risks in raw materials extraction

Cobalt	🔍📄
Rare earths	🔍
3TG	📄
Aluminum	🔍*
Lead	🔍*
Graphite	🔍*
Lithium	🔍*🗣️
Natural rubber	🔍*
Copper	🗣️
Manganese	🗣️
Nickel	🗣️
Platinum	🗣️

Measures taken:
 🔍 Transparency
 🗣️ Industry dialogue project
 📄 Conflict minerals reporting, cobalt reporting
 * Individual measures
 🗣️ Program under development

Conflict minerals policy

Although Bosch itself only purchases few resources from mineral-processing companies, the electronics in Bosch products do contain what are known as conflict minerals, however. That is why we issued the Bosch Group [Policy for Conflict Raw Materials](#) in 2019 that describes our approach to the conflict minerals cassiterite (for tin), coltan (for tantalum), tungsten, and gold. Since 2021, this has been anchored in both the Bosch Terms and Conditions of Purchase and the agreement on quality and corporate social responsibility, making it contractually binding for our suppliers. For other raw materials that could have adverse effects on people and the environment, we regularly review the risk exposure and counteract risks, taking into account OECD guidelines and the legal parameters.

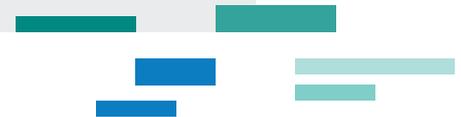
Bosch voluntarily takes part in the conflict minerals reporting system provided for by the Dodd-Frank Act in the United States. In this context, we ask our suppliers annually to declare the origin of minerals. In 2021, we surveyed around 2,900 of our suppliers. All suppliers of the material groups that use corresponding raw materials in their products were contacted. The response rate for smelter declarations in 2021 was 79 percent, down on the previous year's figure (84 percent) for the second year in succession – we specifically aim to counter this trend in 2022.

For tantalum, tungsten, and tin, however, the certification rates could be increased. Currently, 100 percent of smelters are already certified to the standard of the cross-industry Responsible Minerals Initiative (RMI) in the case of tantalum, more than 95 percent for tungsten, and more than 85 percent for tin. At 66 percent, the ratio for gold was slightly lower than in the previous year. Bosch provides the Conflict Minerals Reporting Template from RMI, which is recognized by authorities such as the U.S. Securities and Exchange Commission, to its customers on request via established platforms such as iPoint and HP CDX or sends it directly to individual customers.

Transparent supply chain for e-bike battery raw materials

One key pillar of Bosch eBike Systems' sustainability activities is a transparent supply chain that enables comprehensive tracing of high-risk raw materials. The main focus here is on the lithium-ion battery. For instance, in 2021, together with the supplier of the battery cells, key details of the supply chain were queried and traced back to the procurement of raw materials from mines via a detailed sustainability survey. By the end of 2022 – according to plans – the query will be extended to other eBike system components, such as the drive system and the control unit, which contain materials such as aluminum and magnesium. The results are also to be verified by appropriate assessments.

To continuously reduce the proportion of high-risk raw materials in eBike batteries, Bosch is driving forward the technological development of battery cells together with its suppliers. For example, technology enhancements have already allowed a 65 percent reduction in the cobalt content in the cathode of eBike battery cells since 2013. Our goal is to further increase the capacity of battery cells while reducing the proportion of high-risk raw materials to a minimum.



3.3 Supplier assessments

Responsible supplier management hinges on the establishment of transparency about compliance with social and environmental standards. This enables us to provide our suppliers around the world with targeted support in continuously raising their sustainability performance. Bosch ensures a high level of sustainability, compliance, and social standards in its supplier network using contractual principles, sustainability-related reviews, and the resulting concrete packages of measures. On-site inspections are an essential component in the assessment of our suppliers.

Minimum standards in supplier selection

We take into account sustainability aspects at an early stage when selecting potential suppliers in accordance with our company-wide guidelines. These stipulate that all new suppliers must be screened before entering into a business relationship. The corresponding timing and the methodology used are determined by the respective divisions. As part of the sanctioned-party-list screening, a check is additionally carried out prior to the conclusion of a contract to determine whether potential business partners are included in sanction lists or affected by embargo regulations.

Current supplier relationships are likewise audited. The selection of suppliers for review is both risk based and event driven. Since 2017, moreover, an automated IT-based compliance check is run to verify whether business partners are on external compliance lists and identify any potential violation of national or international legislation or stricter standards. If any doubt remains after the check is completed, the compliance officer initiates suitable measures together with the purchas-

ing officer. These can range from talks with the business partner through to withdrawal from the business relationship (also see the "[Company | Corporate governance and compliance](#)" section).

New contracts are awarded on the basis of criteria such as quality, costs, and past reliability of supply. Current suppliers only receive new orders if they are appropriately ranked. Furthermore, they must not be in violation of sustainability requirements. Active suppliers found to be engaged in unlawful conduct or whose sustainability performance is deemed inadequate are not awarded any further contracts. The escalation process is identical for all criteria.

Assessment and monitoring

As part of the regular assessment of suppliers' sustainability performance, we have so far had two established methods for on-site verification: CSR quick scans and more comprehensive CSR drill-deep assessments. In the future, the divisions will also be able to draw on CSR audits by external service providers (third-party audits) and CSR self-declarations by suppliers. External CSR audits must at a minimum satisfy the requirements of CSR drill-deep assessments in terms of content and processes. Furthermore, CSR self-declarations must also meet certain minimum standards to be eligible for consideration. To ensure uniform and high standards, new verification methods must be approved by a central expert group before they are introduced.

CSR quick scans

CSR quick scans are based on a checklist of specific criteria relating to the environment, occupational health and safety, and human rights. Supplementary questionnaires are used for selected groups of materials – for example, for visits to suppliers and sub-suppliers of lead-acid starter batteries or to logistics service providers. CSR quick scans are carried out by qualified Bosch associates from purchasing or quality functions as part of regular on-site visits to suppliers. If a supplier does not satisfy the minimum requirements of the CSR quick scan, it is required to make improvements by implementing appropriate measures. Under the requirements, however, the supplier does not receive any new business until the review is successfully completed. The further development of suppliers who do not meet the requirements is followed up by means of regular discussions between the experts from the service unit and the purchasing units. In 2021, we conducted some 1,400 CSR quick scans. By the end of 2021, around 15 suppliers still had to implement measures and, for example, install occupational safety equipment or improve environmental protection measures.

We have developed a dedicated app for the performance and documentation of the CSR quick scans, which contains up-to-date checklists and background information. It facilitates the procedure and makes it possible to add images and comments directly. Available through the econsense association, other companies can also use the econsense Supplier Sensor app. It can be downloaded free of charge from the corresponding platforms for iOS and Android devices.

CSR drill-deep assessments

CSR drill-deep assessments are used mainly in potentially high-risk regions or industries, or when there are any specific indications of irregularities. Assessments are not limited to suppliers who have had irregularities in the past or who have had a change of ownership. Any suppliers of strategic importance are also assessed. It is at the discretion of the purchasing management responsible for supporting the given suppliers to decide which supplier is assessed and when. In 2021, no regional or industry-specific focus was set – partly due to pandemic-related travel and access restrictions. To check partial aspects, we again used remote techniques, even though this approach cannot replace a full-scope on-site assessment.

Irrespective of any other visits to suppliers, CSR drill-deep assessments are carried out by licensed assessors and take between one and two days. They are announced so as to ensure that the required experts – such as environmental or safety officers – are on-site. Besides an in-depth assessment of the three areas covered by the CSR quick scan – the environment, occupational health and safety, and human rights – they also comprise an analysis of working conditions and compliance management (see Fig. 21). The assessment covers the practical implementation as well as system-based requirements, such as in the form of guidelines. As a result, it is possible to assess an organization's maturity level.

The findings of the CSR drill-deep assessments are documented in our supplier database. Improvement potential is recorded in a specific action plan. The

21 | Selected in-scope content of CSR drill-deep assessments



plan supports the supplier as well as the auditor, who subsequently also accompanies and follows up on the implementation of measures. Suppliers are expected to start implementing the measures immediately after the results are made available – and in some cases while the audit is still being performed. Those suppliers who satisfy the requirements in general are still made aware of any noncritical gaps.

CSR drill-deep assessments continue to be affected by the global pandemic. Nevertheless, Bosch conducted around 60 CSR drill-deep assessments at suppliers in the 2021 reporting year. In two cases, the deviations highlighted by the assessments were not remedied, and Bosch consequently terminated the supply arrangement with the respective suppliers.

Complaints mechanism and incident response

If possible misconduct is suspected – such as a violation of our sustainability standards – associates as well as business partners and other third parties can submit a report through our whistleblower system. The compliance organization investigates all reports without delay and involves other experts in individual cases (also see the [“Company | Corporate governance and compliance”](#)

section). Our suppliers are made aware of this whistleblower system in the revised version of the Code of Conduct for Business Partners, among other means.

We systematically follow up on any tip-offs concerning our suppliers. In the event of deviations, the same procedures apply as for irregularities identified in the course of inspections. If a supplier is in breach of our sustainability requirements, we seek to remedy the issue without delay together with the supplier and take appropriate precautions for the future. The supplier defines measures with the involvement of the purchasing function responsible, and we support and monitor their implementation – also by rigorously requesting documentation or performing reassessments on-site. If the development measures are unsuccessful and the supplier repeatedly breaches our requirements or legal provisions, Bosch reserves the right to terminate the business relationship.

Commitment to the development of standards

Bosch is a founding member of the Responsible Supply Chain Initiative (RSCI), an association founded by the German Association of the Automotive Industry (VDA) in 2021 from its working group “Sustainability in the supply chain.” Its goal is to help all players in the automotive sector establish a high level of sustainability in supply chains. Bosch is working together with manufacturers, suppliers, and other associations to develop the RSCI standard, which is to be used in the future as a global CSR assessment standard at plant level in the automotive industry. Certified auditors will perform the corresponding audits. With the approval of the audited

organizations, the results can be shared among RSCI members so that improvements can be quickly integrated across the industry. Sharing and mutual recognition of findings effectively avoids costly duplicate audits. After successful completion of preparations in 2021, it was already possible to enter the operational phase at the beginning of 2022, with the founding members conducting the first pilot audits. Bosch will also audit its first suppliers in the process, just as Bosch plants can be audited by customers.

3.4 Further developing and strengthening cooperation

Bosch pursues the goal of systematically developing its suppliers in order to ensure that sustainability and quality requirements are met. The insights we have obtained from the various assessments show that suppliers meet our requirements for the most part. Improvements were required in a number of areas, and Bosch expects these to be implemented. Priority areas in 2021 concerned aspects of environmental protection as well as occupational health and safety, such as preventing hazards in transport and high-bay warehousing processes.

Bosch is committed to partnerships conducive to our long-term competitiveness. The suppliers that perform best are classified as preferred suppliers, a status that can be obtained by suppliers of both direct and indirect materials. Preferred suppliers are involved at an early stage in strategic initiatives and development projects and can adapt to the given requirements and grow in tandem with Bosch.

We also addressed sustainability in 2021 at central purchasing events – mostly in virtual form due to the pandemic. The focus was once again on the activities of suppliers in the sphere of climate action and, in particular, the German Act on Corporate Due Diligence in Supply Chains, which is scheduled to enter into force shortly. We regularly distinguish our best suppliers for their performance with awards. In the 2021 reporting year, we awarded prizes in the “Sustainability” category for the first time as part of the Bosch Global Supplier Awards. The Bosch Supplier Awards are presented every two years. The prerequisite for participation – in addition to excellent overall performance – is an A or B rating in the highly recognized Carbon Disclosure Project. Next, a jury of purchasing and sustainability experts evaluated the respective performances. The evaluation criteria included the transparency of carbon emissions, the level of ambition of the reduction targets set for 2030, and the suppliers’ contribution to Bosch’s CO₂ targets.

In 2021, the jury chose the following winners: semiconductor manufacturer Infineon, software company Salesforce, and office furniture manufacturer Steelcase. Infineon backed up its candidacy through its already long-standing voluntary activities to reduce CO₂ in manufacturing, while Salesforce impressed the jury with its comprehensive use of renewable power from 2022 and its CO₂ reduction targets for its own supplier base. Finally, Steelcase made a big impression on the jury with its holistic approach to CO₂ reduction – from the selection of sustainable materials to their reuse.

**GLOBAL SUPPLIER AWARDS: SUPPLIERS
 SELECTED IN NEW “SUSTAINABILITY”
 CATEGORY FOR THE FIRST TIME.**



Training for further development

Some 200 in-house coaches offer Web-based training sessions as well as classroom training for purchasing associates. Sustainability training is mandatory for these associates and, in addition to providing a general overview of topics, covers information on the requirements expected from suppliers and the procedure for the CSR quick scans in particular. We also help our suppliers meet our sustainability requirements. On the supplier platform, for example, they can access a Web-based training course on sustainability. This is supplemented as needed by specific offers for individual regions and suppliers. In 2021, work began on revising the Web-based training; the new version will be available in 2022. In this way, we want to make our suppliers even more aware of sustainability issues and provide them training with respect to Bosch’s requirements, including how to prepare for the corresponding assessments.

ENVIRON- MENT

Our ambition: We want to keep the environmental impact of our operations to a minimum. Our focus is on consistent climate action, using water sparingly, and establishing a reliable circular economy.



Generating energy from renewable sources

- ▶ Twenty-nine new photovoltaic systems installed at Bosch locations.



Reducing water withdrawal

- ▶ Our target: by 2025, we want to reduce water withdrawal at the sites affected by water scarcity by 25 percent. Status 2021: 21.5 percent achieved.



Energy efficiency

- ▶ Our target: by 2030, we want to substantially increase our energy efficiency and tap into a savings potential of 1.7 terawatt-hours (TWh) at our company locations. Status 2021: 33 percent achieved.



Zero waste to landfill

- ▶ Sixty-nine projects at 48 sites save 14,120 metric tons of waste a year.

4.1 Management approach

We want to keep the environmental impact of Bosch's operations to a minimum. To live up to this aspiration, we have been operating a global environmental management system for many years. Accordingly, we pursue strategies for climate action, to save water (especially where it is scarce), and to establish a reliable circular economy. The scope of our activities includes upstream supply chains as well as our products' use phase.

The Sustainability and EHS (environment, health, safety) corporate department develops the strategies, coordinates measures, and accompanies their implementation. These efforts are grounded in an extensive database: in total, 93 percent of our manufacturing and development sites with more than 50 associates operate an environmental management system. At most sites (97 percent), the system is certified according to the ISO 14001 standard. Similarly, 93 percent of the energy management systems used are certified according to ISO 50001 (also see Fig. 22). We intend to have all relevant sites operating with certified environmental management systems

in the future – a goal we had already hoped to achieve in 2020. However, the Covid-19 pandemic meant that it was not possible to perform the required audits as intended. Nevertheless, we were able to make further progress on the level of certification and now aim to reach this target in 2022.

Bosch has clearly defined environmental criteria for the design, planning, and acquisition of buildings, plants, and manufacturing facilities – for example, with regard to energy efficiency, the use of renewable energy sources, and water consumption in regions with water scarcity. These criteria also serve as a decision-making basis when selecting new locations.

As a globally operating supplier of technology, Bosch has to comply with a large number of laws and requirements relating to environmental protection. The experts in the competent departments ensure that all specifications and standards are observed and that our activities comply with applicable law. To this end, regular briefings, workshops, and internal audits are held at the company locations on topics of relevance for the environment. Sites are selected based on risks or specific events or in reference to their size measured by headcount or the site's share in its consumption of resources. Audit findings are documented in Bosch's company-wide database. As a result, it is also possible to track corrective actions in the event of deviations. Any deviations detected, their causes, and improvement opportunities identified are taken into account in the following year's audit program. The results of the analyses are also considered in determining the content of environmental protection campaigns. Corporate headquarters performs risk-based corporate audits at all manufacturing sites on topics of relevance for the environment. The auditors have in-depth knowledge of ISO 19011 audit methodologies as well as external and in-house EHS requirements. In 2021, the EHS audit team performed a total of 193 corporate audits. With a view to our due diligence obligations in the area of EHS, we also draw on the results of

22 | Management systems

Bosch Group 2021



the audits as a basis for the risk analysis required by the German Act on Corporate Due Diligence Obligations in Supply Chains (*Lieferkettensorgfaltspflichtengesetz*).

Competence development and training

With Web-based training and classroom courses, we provide our associates with the best possible training so that they are experts in their field of technical competence. As part of internal competence management, we promote their methodological and technical competence, thereby creating the conditions for safe and environmentally compatible work processes. In training courses that have been standardized worldwide, for example, those responsible for environmental protection are specifically familiarized with the relevant regulations and standards. These training programs are supplemented by training modules that deal with the specific requirements of individual operating units, sites, and regions. With this approach, we can take into account the cultural context or special quality requirements as well as local laws of relevance for environmental protection. In 2021, we developed three new training modules on internal EHS requirements, which are now available globally for all managers and all coordinators at the division and site level. In addition, workers of external companies and visitors to our locations also receive training and are briefed on health, safety, and environmental protection at Bosch.

Involving internal and external stakeholders

To sensitize and appropriately inform as many associates as possible about environmental protection issues, we use internal print and digital media such as the in-house newspaper, newsletters, the company's internal "Green Heroes" campaign, wikis, blogs, and online forums. Year after year, the Sustainability and EHS Award additionally recognizes outstanding projects for the protection of people and the environment and brings them to the attention of colleagues throughout the Bosch Group. We know that involving associates is of crucial importance if Bosch is to continue successfully on its path to more sustainability. In the coming years, we will therefore continue to aim to involve as many associates as possible and draw on their commitment to achieve more sustainability (also see the "[Company | Sustainability strategy and culture](#)" section).

At the same time, Bosch is also active beyond the boundaries of the company and is continuously engaged in dialogue with key stakeholder groups – in particular with the scientific community, policymakers, and nongovernmental organizations, as well as suppliers and customers (see the "[Society | Political lobbying and dialogue with stakeholders](#)" section). We strongly believe that effective environmental protection can only succeed through the collaboration of various parties.

Awards for environmental protection and climate action

Bosch's commitment to environmental action is bearing fruit and is also recognized outside the company. For instance, in 2021, the nongovernmental organization CDP once again awarded the company an A-rating for its climate action activities. The Financial Times and the Statista platform have likewise nominated Bosch as one of Europe's Climate Leaders 2021 as one of the companies in Europe that made the greatest progress toward reducing their greenhouse gas intensity in 2021. The European Chamber of Commerce in China presented Bosch with the Sustainable Business Award 2021 in the Advanced Performer in Decarbonization category. The award recognizes Bosch's climate action strategy and the company's pioneering role on the path to decarbonizing the economy and society.

In Brazil, the industrial association of the state of São Paulo presented Bosch's Campinas site with the Water Conservation and Reuse Award for its exemplary water management, which integrates not only recycling of process water but also rainwater use. As a result, the site has achieved autonomy in terms of its water supply.

In India, waste management at the Chakan site received special recognition in the form of a gold trophy. The award was presented by the Confederation of Indian Industry at the first edition of the Operational Sustainability Competition-cum-Conference.

4.2 Energy and climate action

Bosch sees itself as a pioneer in climate action and has anchored this aspiration in its sustainability vision. The corresponding strategy includes four levers: improving energy efficiency, generating more energy from renewable sources, expanding the purchase of green electricity, and – as a last resort – offsetting unavoidable CO₂ emissions with carbon credits.

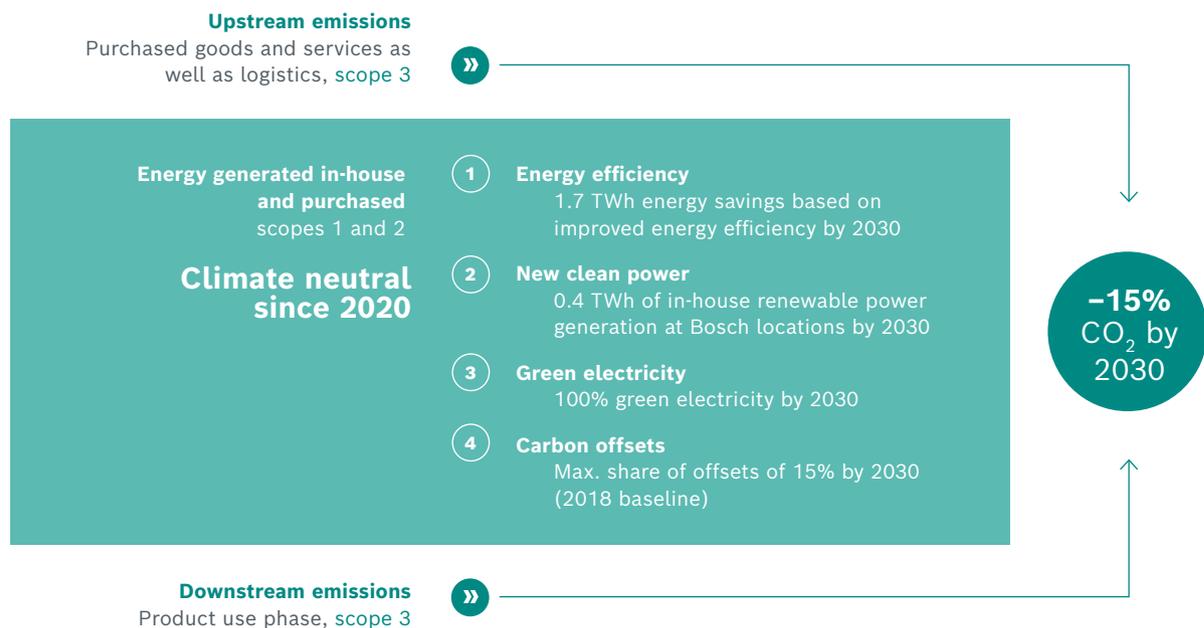
Bosch and its more than 400 locations worldwide have already been carbon neutral (scopes 1 and 2) since 2020 and have thus reached their first major goal. We now aim to optimize the mix of measures and thus further reduce climate impact. In 2021, for example, we raised the quality of our carbon neutrality by increasing the company's energy efficiency and expanding renewable energy generation (new clean power). In addition, Bosch is sourcing green electricity for its sites in a growing number of countries. At the same time, we are broadening the focus

of our activities to also reduce emissions produced outside Bosch's direct sphere of influence – for example, at suppliers, in logistics, or when our products are used, known as scope 3. We want to reduce these upstream and downstream emissions by 15 percent in absolute terms by 2030. In 2021, we reached some key milestones on our course toward this goal. For instance, we have agreed specific CO₂ reduction targets for the product use phase with our divisions and our process for selecting suppliers factors in their climate action activities as a criterion for awarding contracts.

We want to actively shape climate action – consistent with an aspiration that has been ingrained in the company for over 50 years. We have always viewed energy efficiency and emissions mitigation as opportunities to innovate and differentiate ourselves from competitors. That's why we continue to push these issues, starting

23 | Bosch climate goals

2020–2030, audited and recognized by the Science Based Targets initiative (SBTi)



with the board of management. The central body in this regard is the CO₂ steering committee, which meets every six months and takes decisions with respect to the implementation of the CO₂ strategy. In addition to one member of the group's board of management, the committee includes representatives from the corporate departments for Real Estate and Facilities, Manufacturing, Sustainability and EHS, Corporate Communications and Governmental Affairs, and the divisions' executive management. Reports are also continually submitted to the group's board of management.

We regularly evaluate climate risks as part of our internal risk assessment process, which takes place annually and covers a forecast horizon of six years or more. The assessment is based on the scenarios of the International Energy Agency and the energy scenarios of the Bosch corporate sector for Research and Advance Engineering. A central role in this context is played by the internal climate change report: prepared by the corporate sector for Research and Advance Engineering every two years, it highlights fundamental climate change developments and their significance for our company and for society. The report is initially presented to the board of management and can subsequently be accessed by all interested associates on the intranet.

When assessing climate-related issues and suitable measures, we distinguish between measures to mitigate impacts (mitigation) and activities that serve to adapt the company to the changed framework conditions (adaptation). We also include our products in these considerations. While Bosch heat pumps, for example, contribute directly to mitigating the extent of climate change, solutions for agriculture help adapt to its consequences (also see the "[Products | Sustainable products and services](#)" section). Climate aspects also play a role in the choice of location – another aspect that demands Bosch's adaptability, for example, with respect to water and power supply. To manage the respective risks and opportunities, the individual divisions use the results of the risk assessment for market forecasts and incorpo-

rate them in specific plans. Together with our business partners, we work on strategically expanding the supply chain, adjusting its content-related orientation, and developing our suppliers further. With the expansion of our climate action activities beyond our own sphere of influence (scope 3), these activities are gaining additional importance (also see the "[Supply chain | Social and environmental requirements for suppliers](#)" section).

Opportunities and challenges of climate change

Climate change is one of the biggest challenges facing humanity: stopping it is a task for society as a whole. We see this not only as an obligation but also as a source of numerous opportunities for our company to contribute to climate action with novel technologies and solutions that stand the test of time. Take, for example, the fields of electromobility or building technology, where electricity-based heating systems and solutions for energy management are making a decisive contribution. We are confident that we can make a major contribution toward a successful cross-sectoral approach spanning mobility, buildings, and industry. We offer attractive products and services in these fields, whose effectiveness and customer benefits are further enhanced by connectivity. At the same time, we are spreading climate action beyond our own company by sharing our experience in reaching carbon neutrality with other companies and organizations through the Building Technologies division. Last but not least, Bosch's growing self-sufficiency and energy efficiency mean that we are reducing our dependence on energy markets and, in turn, our exposure to price fluctuation risks.

In contrast, the challenges posed by climate change include water scarcity and extreme weather events, which are occurring with increasing frequency and causing greater damage. They can endanger production at our locations and the stability of the supply chain. Other risks include the shortage of raw materials and changes

in the regulatory framework, such as a ban on internal-combustion engines or the tightening of CO₂ emission standards for vehicles. Also important in this context are the increasing variety of customer preferences, which can change rapidly – often in response to political decisions. Increasingly, the focus is also on the processes upstream of our production and the use of materials. For example, we are increasingly receiving inquiries about the proportion of green electricity or recyclates in materials that have a significant carbon footprint, such as steel, aluminum, copper, and plastics (see the “[Products | Management approach](#)” section).

We address these challenges with systematic research and development. Driven by the conviction that we must work together if we are to successfully counter the threats of climate change, we are also actively involved in the relevant associations and committees (also see the “[Society | Political lobbying and dialogue with stakeholders](#)” section). We also want to help ensure that non-financial aspects are increasingly factored into company valuations, and, in turn, the decisions made by companies and policymakers. An example of our commitment in this context is our involvement in the Value Balancing Alliance (also see the “[Company | Sustainability strategy and culture](#)” section).

Climate neutrality milestone – sights on the next goals

Bosch supports the United Nations 2015 Paris Agreement on climate action. By going carbon neutral, Bosch is making a concrete contribution to the formulated goal of limiting global warming to as close to 1.5 degrees Celsius as possible. In order to have an immediate impact on the reduction of greenhouse gases and to be able to make a big difference in a short time, we initially focused on our own sites. Accordingly, we are carbon neutral in terms of the energy we generate ourselves and the volume we source for manufacturing, development, and administration (scopes 1 and 2 of the Greenhouse Gas (GHG) Protocol). With the scope 3 target set in 2019, the focus is now shifting to our activities in purchasing, transportation, and logistics, and in the development of our products.

Our climate action activities are supported by a broad base of associates and have the unreserved backing from Bosch management – independently of the macroeconomic situation. According to an internal survey conducted in the reporting year, the vast majority of executives (over 90 percent) see in carbon neutrality and the pursuit of sustainability a competitive advantage for the company. Some 87 percent of the workforce feel well informed about sustainability as one of the strategic priorities.

Four levers for climate neutrality – 2021 milestones

Our climate strategy defines four levers to achieve climate neutrality. The progress made with these levers in 2021 is described below.

► **Lever 1: energy efficiency**

By 2030, we want to substantially increase our energy efficiency and operationalize measures at our company locations with savings potential totaling 1.7 terawatt-hours (TWh). An annual budget of 100 million euros is available for this purpose until 2030. Since 2019, we have initiated more than 3,000 projects worldwide, with around 1,000 new projects added in 2021 alone. In total, we have thus far captured savings potential of 559 GWh through these measures. To further enhance the quality of our carbon neutrality, from 2022 onward we will additionally fund CO₂ reduction measures, such as the electrification of the heat supply or the use of district heating, from the energy efficiency budget, although the primary focus here is not on energy savings. Such measures will be evaluated for eligibility and prioritized based on an internal CO₂ pricing mechanism to ensure the greatest possible leverage with the resources available.

► **Lever 2: new clean power** ☺

Under the banner of new clean power, Bosch aims to drive renewable energy generation – both through in-house generation at its company locations and through long-term supply contracts that will ultimately enable the external construction of new photovoltaic plants and wind farms. In this way, we want to increase the share of renewable energy in the overall system and make an effective contribution to the energy transition. By 2030, we want to generate 400 GWh of our annual energy requirements in-house at our company locations from renewable sources. To this end, we rely primarily on photovoltaics and we also operate a hydroelectric power plant at our site in Blaichach, Germany. Generating 94

GWh, we were already able to reach 23 percent of the target capacity by the end of 2021. Here, we are primarily concentrating on those regions where local conditions are particularly favorable for the use of photovoltaic systems or where we have a relatively large number of company locations. Accordingly, in 2021, India accounted for around 39 percent of Bosch's renewable energy generation, followed by China (25 percent), and Germany (22 percent). In parallel, we entered into long-term supply agreements with energy suppliers in Germany, India, and the Netherlands in 2021, thus enabling the construction of new renewable energy plants. The energy suppliers will each supply Bosch exclusively with electricity from subsidy-free photovoltaic and wind power plants. In total, this will allow us to obtain an additional 150 GWh of electricity from renewable sources each year from 2022. We are also considering similar projects in other regions.

► **Lever 3: green electricity** ☺

In order to reach carbon neutrality as quickly as possible, Bosch has concentrated on the purchase of green electricity from existing plants and has been greatly expanding its purchase volume from renewable sources with corresponding guarantees of origin since 2019. In total, green electricity already covered 89 percent of the Bosch Group's global electricity requirements in the reporting year; the aim is to reach 100 percent by 2030. Our policy for purchasing green electricity also observes the principle of initially concentrating our attention where we can make the fastest and most significant contribution to climate action. Accordingly, our efforts initially centered on countries where Bosch consumes a particularly large amount of energy. Going forward, we will gradually expand the scope of countries. In 2021, for instance, supply contracts in Turkey and parts of Australia were switched from gray to green electricity.

► **Lever 4: carbon offsets** ☺

We intend to reduce the use of carbon credits to a minimum in the coming years. However, they will be necessary on a transitional basis to offset unavoidable CO₂ emissions from combustion processes (heating, process heat) or to offset electricity sourced in countries with only limited availability of green electricity. In 2021, we offset a total of 0.9 million metric tons of CO₂ using carbon credits. This represents a slight decrease on the previous year's level (see Table 24).

We calculate emissions using the standards of the International Energy Agency and the Intergovernmental Panel on Climate Change (IPCC). In 2020, we switched to a market-based presentation. Previously, we had used the

location-based approach (up to and including 2019). In the calculation, we focus on the greenhouse gas CO₂ and emitted process gases and hydrofluorocarbons (HFCs), given that an internal analysis has shown that Bosch does not produce or emit other greenhouse gases to any relevant extent.

When selecting carbon offset projects, we continue to use internationally recognized and independent certifications such as the Gold Standard as guidance, as we want to take advantage of the projects to promote social development in addition to environmental action. At the same time, we are working to reduce emissions that are currently still unavoidable. To this end, we are examining the possibilities of electrification and the use of biogas or hydrogen, for instance.

Quality of climate action measures is to increase steadily

Having successfully reached carbon neutrality in scopes 1 and 2, we want to further optimize the mix of our climate action strategy's four levers. For example, we want to continuously reduce the share of carbon

24 | Greenhouse gas emissions

Bosch Group 2019–2021, in 1,000 metric tons of CO₂e

	2019	2020	☺ 2021
Bosch Group with carbon offsets	1,943	0	0
Carbon offsets	255	938	907
Bosch Group	2,198	938	907
Production	384	350	383
Vehicle fleet	79	117	109
Volatile GHG	10	18	76
Scope 1	473	485	569
Electricity	1,636	367	248
District heat, steam, cooling energy	88	86	90
Scope 2	1,724	453	338

25 | Emission intensity

in metric tons/million euros of sales revenue, without carbon offsets

	2019	2020	☺ 2021
Bosch Group	28.28	13.13	11.53

offsets so that by 2030 Bosch will only have to use such measures to neutralize a maximum of 15 percent, or 488,800 metric tons of CO₂. We communicated the corresponding target to the Science Based Target initiative (SBTi) in 2020. That makes Bosch the world's first automotive supplier to achieve "Targets set" status in the SBTi.

To meet our target, we are continuously expanding activities to increase energy efficiency and use new clean power. We have also developed an action plan to reduce the use of fossil energy. The most important lever here is to increase the share of green power in the electricity mix to 100 percent by 2030. Other measures include strengthening e-mobility in the company fleet or a lower-emission heat supply through district heating, electrification, and the use of hydrogen and biogas.

Goal management and implementation

To achieve the company-wide targets set for 2030, all Bosch divisions are pursuing measurable targets. These are staggered year-by-year – that is the corresponding targets in the first few years are higher than those allocated to later years. The intention is to capture potential that can be realized quickest and thus rapidly reduce our climate impact. Annual targets are set in reference to energy requirements and the savings potential captured so far. Targets are cascaded down to individual company locations at the discretion of the respective divisions.

Two annual surveys centrally track the degree to which divisions meet their targets. On this basis, those responsible in the divisions and at company locations make decisions on the implementation of measures to improve energy efficiency or projects to generate their own energy. An internal energy map pinpoints the corresponding potential for photovoltaics worldwide. Submitted projects are reviewed for plausibility by the divisions' energy coordinators together with a committee consisting of representatives from the corporate departments for Real Estate and Facilities, Manufacturing, and Sustainability and EHS. After implementation, further random checks are carried out at the sites on the basis of audits performed by the regional Sustainability and EHS coordinators.

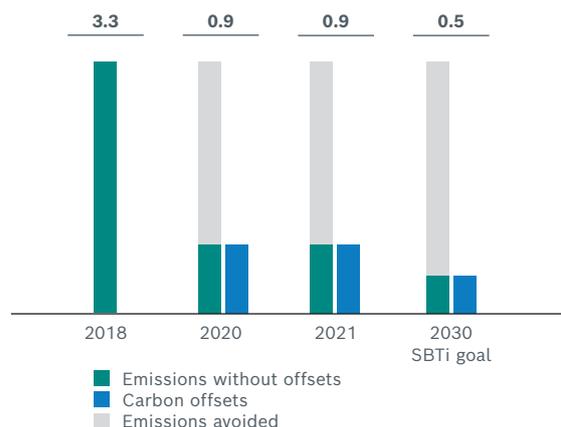
As the availability and quality of green power and the legal conditions for the expansion of renewable energy differ between countries, the regional organizations are responsible for green electricity and new clean power projects. Carbon offsets are regulated centrally to ensure the quality of projects. The sites themselves order and transact the measures.

Energy: focus on efficiency and renewable sources

Most of our company's CO₂ emissions stem from the consumption of energy. Bosch consumes energy primarily for the operation of manufacturing plants and machinery and in the form of thermal energy to heat and air-condition buildings and operate foundry furnaces.

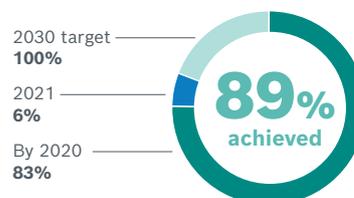
26 | Climate action at Bosch – the path to 2030

CO₂ emissions (scopes 1 and 2) in millions of metric tons



27 | Goal achievement for green electricity sourcing

Covering the electricity needed worldwide with green power



In 2021, the entities in the Bosch Group consumed a total of approximately 8,042 GWh of energy (previous year: 7,497 GWh). Electricity accounts for 67 percent (5,437 GWh) of total energy consumption (previous year: 68 percent; 5,103 GWh), natural gas for 20 percent (previous year: 19 percent), and other energy sources such as heating oil, district heat, or coal/coke for 13 percent (previous year: 13 percent).

A smart energy management system, the Bosch Energy Platform, is to be introduced at all relevant Bosch locations by 2024. The system is currently in operation at over 120 locations and in more than 80 customer projects, where it is generating significant savings. For instance, at Bosch's lead plant for Industry 4.0 in Homburg, Germany, energy consumption per unit produced was reduced by more than 40 percent thanks to information provided by the software.

Improving energy efficiency

We are already implementing a wide range of measures to increase energy efficiency today. Again in 2021, some 1,000 new projects were successfully implemented at Bosch. The following are some examples.

► **France:** Through demand-based management of hydraulic pumps used in manufacturing, the Moulins site has reduced energy consumption per pump by 60 percent. To this end, existing plants were modernized with variable frequency inverters – a measure that has since been rolled out at seven additional sites, resulting in total savings of 1.4 GWh per year.

► **Germany:** At the Dillingen site, an improvement in the manufacturing process for dishwashers is enabling energy and water savings. By introducing a new welding process and using a biodegradable lubricant and leak-testing agent in the manufacture of the inner housing, it has been possible to eliminate the need for washing processes. Reduced water heating led to a decrease in annual energy consumption of 1.4 GWh, a decrease in gas consumption of 5.3 GWh, and a decrease in water consumption of 7,400 m³.

► **Slovenia:** Significant savings were captured in Bosch's Nazarje site by installing groundwater heat pumps and using waste heat from the injection molding production process. Overall, this means that around 75 percent less energy is consumed for heating, building cooling, and cooling water in the injection molding process.

Generating electricity from renewable sources at company sites

We are generating electricity from photovoltaic systems at more and more locations. In 2021 alone, 29 new installations were added with an annual generation capacity of almost 19 GWh, covering an area equivalent to about 12 soccer fields. Of this, 6.2 GWh was generated in two new systems in Penang (Malaysia) alone, where roof and open spaces are used for energy generation. Annual photovoltaic power capacity of 1.7 GWh has been installed on vacant land in Aveiro (Portugal), and at the Bosch site in Cluj, Romania, close to 14,000 m² of roof space is being used to generate around 2.8 GWh of electricity per year. This means that a total of 67 Bosch locations already rely on the power of the sun for their energy supply.

28 | Goal achievement for energy efficiency

Savings potential captured with measures to increase energy efficiency



29 | Goal achievement for renewable generation in-house

In-house energy production from photovoltaics and hydroelectric power



Upstream and downstream emissions

We want to shape climate action beyond our immediate sphere of influence (scopes 1 and 2) and also systematically reduce upstream and downstream emissions (scope 3), which we aim to reduce by 15 percent by 2030 compared with the baseline year 2018. This target was confirmed by the Science Based Targets initiative (SBTi), as were the targets for scopes 1 and 2. Bosch has thus widened its coverage with science-based climate targets across the entire value chain – from purchasing to the product use phase. With its scope 3 target, Bosch has deliberately set itself a very ambitious goal as this

climate action lever is particularly significant: upstream and downstream emissions total 448 million metric tons of CO₂, exceeding those in scopes 1 and 2 several times over. In addition, the target value was set independently of sales growth, which means the mitigation target will increase steadily as the company grows in future. There are also a large number of external factors Bosch can only influence indirectly, such as suppliers' success in reducing CO₂ emissions. Against this backdrop, the 15 percent reduction in CO₂ emissions corresponds, from today's perspective, to cutting our climate impact by 67 million metric tons of CO₂.

We are pursuing a three-stage approach to make sure we reach our targets. In a first step, in 2019 we analyzed all scope 3 categories in accordance with the GHG Protocol using external databases and then focused on those from which the majority (99 percent) of CO₂ emissions originate. According to the findings, upstream emissions in the Bosch value chain primarily concern purchased goods and services as well as logistics. Downstream emissions are mainly caused by the use of our products. However, it is not possible to measure a company's specific progress based on database values. In 2020, we therefore went one step further and increased the calculation's granularity for the main categories while also integrating specific parameters into the models. This allows us, among other things, to identify significant drivers within purchasing and in the use of our products, based on which we can derive measures that make an active and measurable contribution to climate action. In this process, we focus primarily on options that lie within our immediate sphere of influence.

► To reduce CO₂ emissions from purchased goods and services, we seek to engage in close dialogue with our suppliers. In 2020, we identified the supplier groups with the largest purchasing volumes and the largest CO₂ emissions. In 2021, we contacted around 1,000 suppliers directly to obtain real data on their CO₂ emissions. For this purpose, we used the platform provided by the Carbon Disclosure Project (CDP) as well as our own queries. This way, we have now created transparency on the status of carbon accounting and corresponding activities of our suppliers for around a quarter of our pur-

30 | Energy consumption

Bosch Group 2019–2021, in GWh

	2019	2020	📍 2021
Bosch Group	7,762	7,497	8,042
Natural gas	1,511	1,445	1,587
Heating oil	89	53	55
LPG	34	39	39
Coke/coal	123	85	98
Renewable energy	69	76	102
Other*	313	452	451
Direct energy (own combustion)	2,139	2,150	2,332
Electricity	5,431	5,103	5,437
thereof green electricity		4,253	4,817
District heat, steam, cooling energy	193	245	273
Indirect energy (purchased)	5,623	5,348	5,710

* Gasoline, diesel

31 | Energy intensity

in MWh/million euros of sales revenue

	2019	2020	📍 2021
Bosch Group	99.9	104.9	102.2

chasing volume. We intend to further increase this share, together with the data quality, in the coming years. In addition, both qualitative and quantitative procurement concepts were developed and piloted in all divisions of material importance in this regard in 2021 (also see the "[Supply chain | Social and environmental requirements for suppliers](#)" section).

► In the field of logistics, we will focus on transport. In addition to reducing air transport and pooling freight, we also focus on the consistent application of the total cost of ownership (TCO) approach, which factors in key cost components such as freight costs or customs duties. The proximity of potential suppliers to our sites is therefore an important selection criterion. In this way, we are optimizing the number of transports and their capacity utilization and keeping CO₂ emissions as low as possible (also see the "[Supply chain | Social and environmental requirements for suppliers](#)" section).

► Bosch products are designed for energy efficiency and thus help mitigate climate change during their use. In 2020, we identified additional potential for further reducing CO₂ emissions in the use phase. The corresponding docking points can be clustered into three levers, which we can influence in different ways in the individual divisions: boosting energy efficiency, shaping the product portfolio, and using the transformation of the energy sector (also see the "[Products | Sustainable products and services](#)" section).

In 2021, we took the next step and derived specific performance indicators to track the contribution of the identified measures up to 2030 and readjust them as needed. In order to achieve the cross-divisional SBTi target, for the product use phase, action plans and annual target agreements were developed and coordinated with the divisions whose products consume a relevant amount of energy.

In the course of developing the 2021 action plans, we also further developed and detailed the existing scope 3 calculations. The plans are based on currently available knowledge and scenarios of market developments in the coming years. The selected levers were integrated into

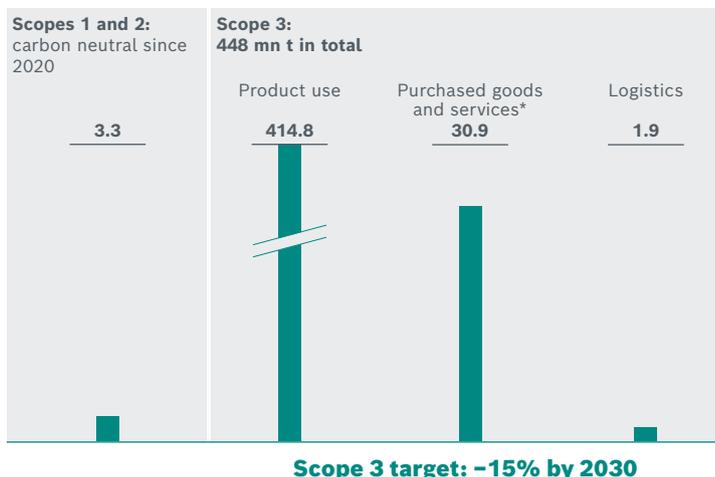
OUR GOAL: BY 2030, WE WANT TO LOWER OUR CO₂ EMISSIONS (SCOPE 3) BY 15 PERCENT.



the calculation models to methodically enable direct measurability of the progress achieved. Bosch's influence on the respective levers or the measures available in each case varies greatly. While measures to increase the energy efficiency of products or the corresponding transformation of the product portfolio have a direct impact, Bosch's influence on the supply of renewable electricity and green hydrogen is rather low (see Fig. 32).

32 | Main scope 3 categories in baseline year

CO₂ emissions in 2018, in millions of metric tons



[Key figures tool](#)

* To consistently improve data quality, the calculation of scope 3 emissions in the category "Purchased goods and services" will be revised in 2022 (also see the "[Supply chain | Social and environmental requirements for suppliers](#)" section). The updated data will then be published without delay in our key figures tool at sustainability.bosch.com.

As part of the detailing process, further relevant business activities were identified and included in the calculation. Although this refinement of the calculation raises our baseline, we nevertheless remain committed to the ambitious target of a 15 percent absolute reduction in scope 3 emissions.

Climate-friendly solutions for associates' mobility

With our company mobility management, we endeavor in particular to make our associates' commute to work more sustainable. For instance, in the greater Stuttgart area Bosch has more than 50,000 associates, many of whom drive to work every day. Against this backdrop, the "Go for mobility" campaign was launched in 2019. It aims to motivate associates to switch to alternative modes of transport such as cycling, public transport, or Bosch shuttle buses.

Our workforce had much less need for mobility solutions during the pandemic. Nevertheless, measures such as the leasing offer for bicycles were actively used. There

are now more than 23,000 bikes on the road. Furthermore, the co-working spaces Bosch provides close to the areas where its associates live also continue to be used intensively.

As one of the largest employers in the Stuttgart region, Bosch is helping to reduce traffic congestion and improve air quality. In addition, we are working on the development of a standardized procedure for systematically managing company mobility, while enabling professional cooperation with other partners (e.g. municipalities, companies). We also seek to do more for the climate when it comes to business travel. For example, since 2020 we have made the business air travel of all associates carbon neutral through measures to offset carbon emissions. To the extent possible, the cost of carbon offsets is included in the airfare based on the polluter-pays principle. Meanwhile, other companies can also adopt this solution through the commissioned travel agencies. In addition, we are sensitizing our associates to make greater use of digital communication formats or – whenever possible – to opt for alternative mobility offers.

33 | Key levers for achieving the scope 3 target

Calculation base and main direct and indirect levers

Scope 3 categories	Calculation base	Key levers for reducing CO ₂		
		Direct	→	Indirect
Upstream emissions		Realign top-down	Refine status quo	Transform energy sector
Purchased goods and services (including machinery and equipment) Transport and logistics (also downstream)	<ul style="list-style-type: none"> • Purchasing volume • Goods categories • Source region • Mode of transport 	<ul style="list-style-type: none"> • Supplier selection • Sourcing of secondary raw materials • Mode of transport (sea, land, air) 	<ul style="list-style-type: none"> • Supplier development • Route optimization 	
Downstream emissions		Improve energy efficiency	Shift product portfolio	
Product use	<ul style="list-style-type: none"> • Volume • Sales revenue • Efficiency • Energy source • Emissions factors • Product life 	<ul style="list-style-type: none"> • Increased efficiency • Digitalization • Optimized use 	<ul style="list-style-type: none"> • Investment in growth areas (e-mobility, heat pumps) • Phaseout of products with lowest energy efficiency 	

Company cars: globally valid principles for better climate action

We signaled another drive for climate action in 2021 with the revised principles for the use of company cars. These are valid worldwide and are now gradually being implemented regionally. These principles set out goals that are to be considered in the specific regulations and range from the reduction of carbon emissions and the optimization of cost and process efficiency to the offer of other forms of mobility as an alternative to the standard company car.

Accordingly, the mobility solution offered must systematically support the best possible carbon reduction, for example, by means of a defined CO₂ cap in the company car policy or a bonus/penalty scheme linked to a vehicle's CO₂ emissions. In addition to the company car, associates must have access to at least one alternative mobility solution.

In Germany, the principles were already implemented in July 2021: here, members of the Executive Leadership Team receive a monthly mobility budget that they can use to lease a company car or, for example, to purchase a BahnCard 100 annual railway ticket. Alternatively, the budget can also be paid out. A system for reducing CO₂ emissions has been adopted for company cars. This includes measures such as fuel budgeting for hybrid vehicles and increased cost sharing for vehicles with higher CO₂ emissions.

Air pollution

Air pollutants can affect people's health and should therefore be effectively reduced. In 2019, Bosch launched a project to analyze which air pollutants are produced and at what levels in the relevant business processes in manufacturing, such as surface treatment, foundry processes, and building heating. The results show that there are no significant effects on people and the environment from air pollutant emissions. In 2021, there were no grounds for reassessing air pollution's relevance.

**SINCE 2020, BOSCH HAS
BEEN MAKING ALL ASSOCIATES'
BUSINESS AIR TRAVEL CARBON
NEUTRAL.**

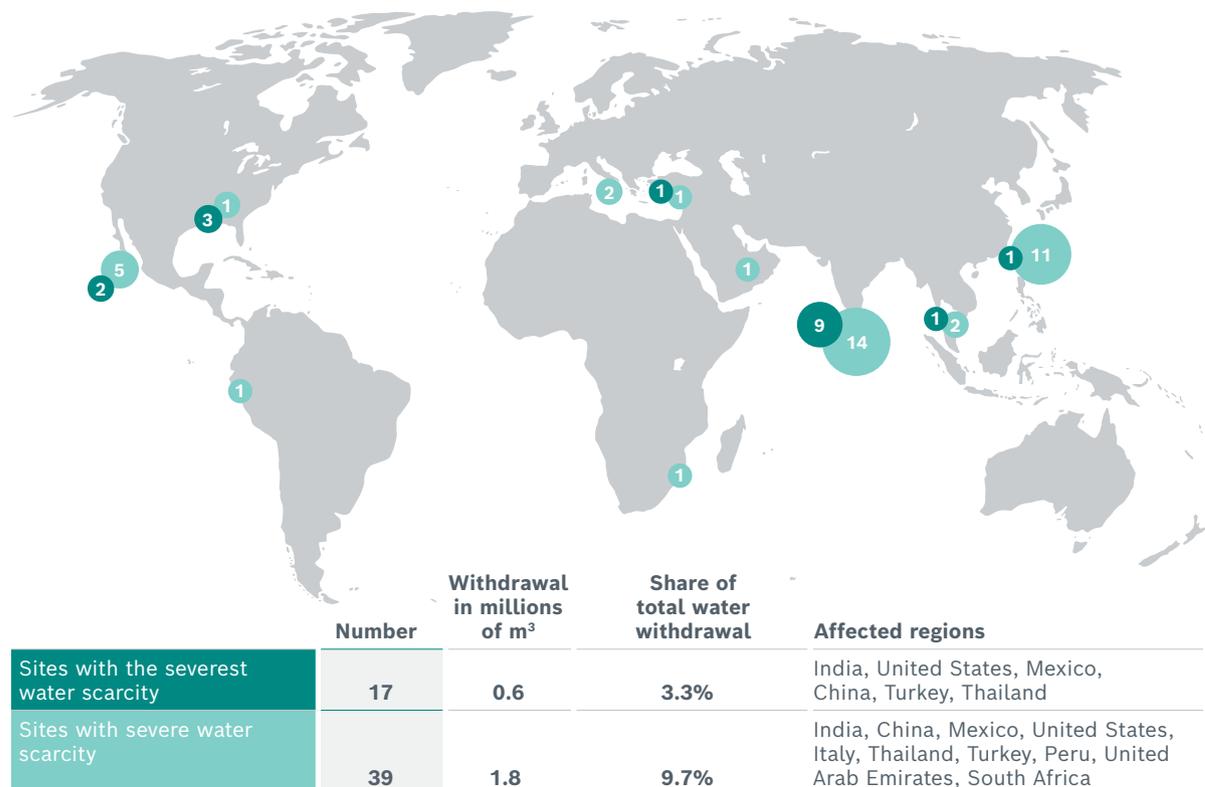


4.3 Water and wastewater

Conscientious use of water is one of Bosch's major priorities worldwide. Here, too, we have been pursuing a clear strategy for many years to counteract the scarcity of water. Back in 2018, we analyzed our company locations using the WWF's Water Risk Filter. Based on the findings, we know that 56 of our sites are located in areas of severest or severe water scarcity. As a result, we decided together with WWF to focus our activities on combating water scarcity in those regions. In that way, we can quickly achieve significant improvements in regions where water is a particularly valuable resource.

Our goal is to reduce absolute water withdrawal at the 56 sites identified by 25 percent by 2025 compared with our 2017 baseline. An annual budget of ten million euros is available for this purpose until 2025. To ensure that the funds are used efficiently, water coordinators in the Bosch divisions identify local savings potential and implement suitable measures together with those responsible at the locations. All locations have access to best practice examples on a group-wide "Water Wiki."

34 | Company sites with water scarcity



In 2021, we reviewed the existing water map and reassessed it based on the WWF's Water Risk Filter. The results will be used to agree targets with the divisions in 2022 and thus form the basis for reporting in the coming years.

As production resumed after the pandemic-related restrictions, water withdrawal also rose again slightly in 2021. Only 2.45 million m³ of water or 13.0 percent of Bosch's total annual water withdrawal was attributable to company locations in regions with water scarcity. This translates to a reduction of 21.5 percent compared with 2017 (previous year: 23.1 percent). Since 2019, we have launched more than 200 projects that enable us to save up to 500,000 m³ of water at our sites each year. These include the following examples.

► **Turkey:** By installing digital water flow meters at the main consumers at the site in Bursa, water consumption is now continuously monitored, and it is possible to identify deviations without delay. In addition, measures such as improved recirculation in cooling towers reduced water withdrawal in relation to production volume by 14 percent year on year.

► **India:** At the Jaipur site, the efficiency of the reverse osmosis plant was increased from 60 percent to 80 percent by installing a second system. This eases the burden on the evaporator system in the wastewater treatment process, resulting in water savings of 1,000 m³ per year. On top of that, diesel and energy consumption is reduced by around 60 percent.

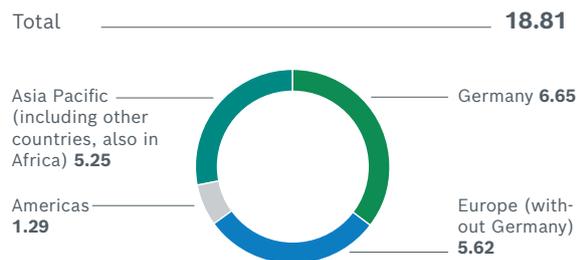
► **Mexico:** An above-ground rainwater catchment basin was built at the Aguascalientes site. Assuming precipitation does not deviate from average levels, it supplies about one-third of the water needed at the site, reducing the need to use valuable fresh water. Rainwater is treated and then used for various processes at the plant.

Water withdrawal

Fresh water is used in many processes at Bosch – in particular for cooling purposes. In regions with strained water supplies, recycled water or rainwater is already used wherever possible. In 2021, water withdrawal by the Bosch Group increased to 18.8 million m³ (previous year: 18.1 m³). In relation to sales revenue, this constitutes a relative decrease of around six percent (also see Fig. 35–37).

35 | Water withdrawal

Bosch Group 2021 by region, in millions of cubic meters



36 | Water withdrawal

Bosch Group 2019–2021, in millions of cubic meters

	2019	2020	2021
Bosch Group	19.77	18.08	18.81
Surface water	3.91	3.42	3.44
Groundwater	2.21	1.95	2.32
Public/private waterworks	13.59	12.67	13.00
Fresh water¹	19.72	18.04	18.75
Public/private waterworks	0.05	0.04	0.05
Other sources²	0.05	0.04	0.05

¹ <1,000 mg/l total dissolved solids

² >1,000 mg/l total dissolved solids

37 | Water intensity

in cubic meters/million euros of sales revenue

	2019	2020	2021
Bosch Group	254.4	252.9	238.9

Wastewater

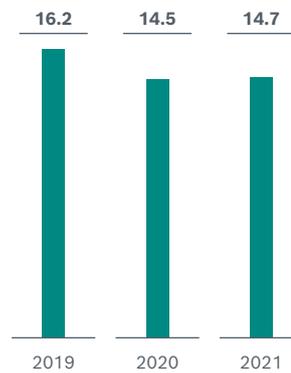
Wastewater at Bosch is mainly produced in sanitary facilities and canteens (44 percent) and also in connection with cooling water (29 percent). Manufacturing accounts for 26 percent of the wastewater produced. There, water is used in electroplating as well as in washing systems and machining centers, among other areas. In 2021, Bosch's wastewater volume increased to 14.7 million m³ (previous year: 14.5 million m³). Negative impacts from wastewater are mainly caused by foreign substances or excessive temperatures.

Within the core strategic topic of water, we are therefore working on further reducing wastewater flows and continuously improving quality. To this end, we centrally recorded in 2019 what quantities are involved where, how they are treated, and where they are discharged (see Fig. 38). We have defined wastewater quality standards that are binding worldwide and monitor their compliance. We also comply with the requirements imposed by local authorities.

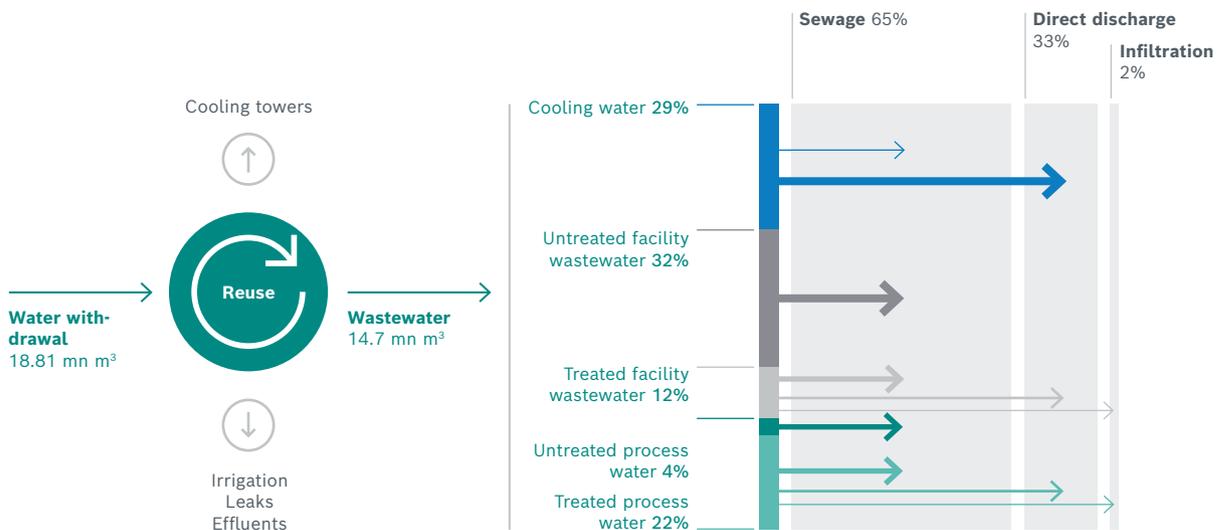
At some sites, we carry out wastewater treatment in-house, using processes such as ultrafiltration to separate solids and liquids or physical-chemical treatment methods such as precipitation or distillation, depending on local conditions.

39 | Wastewater

Bosch Group 2019–2021, in millions of cubic meters



38 | Wastewater flows and discharge routes



4.4 Waste

“Avoid, then reuse, then dispose” – that is the principle we apply at Bosch with respect to waste management. A guideline applicable company-wide ensures that the legal requirements for the transport and disposal of waste are complied with locally. All manufacturing sites have a clearly designated organizational unit responsible for sorting, classifying, and handing over waste to disposal companies. In 2021, Bosch generated 689,468 metric tons of waste (previous year: 606,415 metric tons), an increase of 14 percent. This is due to the restart of production once pandemic-related restrictions ended. Of this amount, it was possible to recycle 87 percent. In relation to the development of sales, the volume of waste increased by around three percent.

40 | Waste volume and disposal

Bosch Group 2019–2021, in 1,000 metric tons

	2019	2020	2021
Bosch Group	701.2	606.4	689.5
Recyclable waste	562.3	521.9	602.0
Waste for disposal	138.9	84.5	87.4
thereof hazardous waste	80.6	68.7	70.1
Material-based recycling			30.9
Thermal recycling			8.2
Other recycling			7.9
Landfill disposal			3.5
Disposal through incineration			8.2
Other disposal			11.3

41 | Waste intensity

in metric tons/million euros of sales revenue

	2019	2020	2021
Bosch Group	9.0	8.5	8.8

An analysis of the waste at our manufacturing sites, which together account for around 80 percent of our total waste volume, has shown that around 45 percent of our waste consists of metals, 24 percent is packaging waste, and around eleven percent is hazardous waste. The analysis also revealed that there still is significant potential for improvement in the area of hazardous waste, which would allow us to make an important contribution to protecting people and the environment – in addition to reducing disposal costs. In response to these findings, we decided in 2019 to pursue two priorities: reducing hazardous waste and minimizing the amount of waste going to landfills.

At Bosch, hazardous waste mainly consists of cooling lubricants, washing water, oils, and fuels. In 2021, they increased by almost two percent to 70,087 metric tons (previous year: 68,718 metric tons). This is an area in which we have been able to make further progress through measures specifically developed for sites with comparatively large quantities of hazardous waste: since 2019, the introduction of vacuum distillation and ultrafiltration have been among the main factors that permitted a reduction in the quantity of cooling lubricants and washing water used by almost 50 percent in each case, while centrifugal treatment led to a decrease of almost ten percent in the quantity of oil that had to be disposed of.

In order to further reduce the amount of waste going to landfills, we want to increase the recycling rate.

With this in mind, we implemented the Zero Waste to Landfill campaign in 2019. In 2021, the focus was on packaging. A total of 69 projects were implemented at 48 sites in almost all regions. The measures will prevent 14,120 metric tons of waste per year and save around 2.7 million euros per year. The most recent example is the Brazilian site in Sorocaba, which achieved “Zero Waste to Landfill” status in 2021 and was recognized for this by the National Association of Brazilian Auto Parts Manufacturers.

As part of its circular economy strategy, Bosch continues to work systematically on reducing the volume of waste and, in particular, on recycling. To this end, we developed a corresponding model for Bosch in 2021 and defined four levers for either closing loops within Bosch or using established recycling systems outside the company (see the “[Products | Management approach](#)” section).

ASSOCI- ATES

Our ambition: We want to create an environment that enables all associates to contribute to the company's long-term success because they feel respected at Bosch and are able to develop their full potential.



Individual training as needed

► A total of 24,200 eUniversity licenses issued to create more learning flexibility.



Safe work environment

► Our target: by 2025, we aim to lower the number of work accidents at Bosch to 1.45 accidents per 1 million hours worked. Accident rate in 2021: 1.62.



Covid-19 vaccinations

► A total of 79,000 doses of vaccine administered by company medical staff in Germany.



Women in leadership positions

► Our target: increase the proportion of women executives at Bosch to 20 percent. Number of women in leadership positions in 2021: 18.4 percent.

5.1 Management approach

Bosch develops, produces, and markets technology that is “Invented for life” – that is our strategic imperative. The company’s associates shape the future with a high willingness to innovate, passion, and the courage to embrace change. In a highly dynamic environment, they are key to our success, which is why they are at the heart of our strategy. These are among the most exciting times in Bosch’s history, as it evolves from a leading hardware manufacturer to a leading provider of connected hardware, software, and services. To be in a position to actively shape this transformation, we are systematically developing our corporate culture further and are enabling our associates to acquire new competencies. At the same time, in highly competitive international labor markets it is vital for us to win new talent for innovative, high-growth areas.

Our foundation

The Bosch values stem from our company founder and form the basis for our entrepreneurial action. They provide a central and reliable point of reference for our associates – irrespective of any specific challenges we are currently facing or may be faced with in the future. Our “We are Bosch” mission statement combines our strengths with our strategic alignment (also see the “[Company | Bosch Group profile](#)” section).



[Mission statement “We are Bosch”](#)

[Basic principles of social responsibility at Bosch](#)

Guidelines and standards

In the “Basic principles of social responsibility at Bosch,” which have been made publicly available, the board of management and the employee representatives commit, among other things, to complying with human rights, equal opportunities, fair working conditions, and global standards in occupational health and safety. The 11 principles are based on the core labor standards of

the International Labour Organization (ILO). Our executives receive training to help them comply with these principles. Translated into more than 30 languages, the principles are available on the intranet and Internet. Responsibility for their implementation lies with the management of the divisions, regional subsidiaries, and company locations. Our associates are familiar with the basic principles and can report violations. The same applies to violations of the Code of Business Conduct, which is applicable to all our associates worldwide (see the “[Company | Corporate governance and compliance](#)” section).

Our people strategy

We want to match the needs of our people with the requirements of our company. In the process, we are getting our associates in shape for the transformation and helping them to develop personally and acquire new skills. We support them through our work and employment conditions as well as through suitable HR instruments and formats.

42 | People strategy



Strategic core topics

Our strategy revolves around six core topics that shape our actions.

- ▶ **Transformation:** We contribute to transformative processes in the way we shape working and employment conditions, along with appropriate HR processes, policies, and formats in the context of leadership and cooperation. At the same time, we adapt our structures to the changed environment in the short and medium term in as socially acceptable a manner as possible.
- ▶ **Employer of choice:** We want to attract talented young people and promote the development of our associates so we become and remain an employer of choice in all fields. For further details, see the [“Employer of choice”](#) section.
- ▶ **Leadership and collaboration:** We encourage a high-performance culture of leadership and collaboration in which our associates are enthusiastic about their work and can realize their potential. For more information see the [“Leadership and collaboration”](#) section.
- ▶ **Learning:** We provide the learning content for a successful transformation, strengthen the learning culture, and make training more time- and cost-effective, flexible, and attractive. For more information see the [“Learning and development”](#) section.
- ▶ **Excellence:** As a professional partner, the HR corporate sector supports associates in their work and encourages their development with personalized advice and efficient services.
- ▶ **Digitalization:** We develop and establish state-of-the-art methodologies and IT tools to automate processes, use data efficiently, and design systems and services that are intuitive and readily accessible for all our associates.

Responsibilities and organization

The director of industrial relations of Robert Bosch GmbH is responsible for human resources management in the Bosch Group. She is responsible for human resources and social welfare, including senior executives. In this context, she is assisted by the HR corporate sector, whose areas of responsibility include diversity and equity. The HR corporate sector is also responsible for HR management in the countries where Bosch operates, with the respective regional HR management reporting to central HR management as of 2020.

Digitalization program

In 2020, a HR digitalization program was launched with around 200 associates worldwide. Coordinated by the central program management, project managers in China, India, the United States, Mexico, and in many EU countries are working on the implementation. The aim is to further digitalize processes in HR management. In this way, our HR consultants should have more time in the future to work with people on activities that create value and focus on supporting the company’s transformation. By the end of 2021, as many as 59 solutions for automating administrative processes had been introduced, including, for example, an app for managing medical certificates and various programs to automate the process of creating and archiving documents.

In addition, the digitalization team supports overarching projects such as the [“impact:”](#) feedback landscape and the [Bosch Skill Hub](#), with which we create transparency on the competencies that our associates have and can offer them individual development and learning options.

Employment at Bosch

As a global supplier of technology and services, Bosch has 402,614 associates worldwide. To enable flexible staffing, around 12 percent of the workforce have temporary contracts. They have the same training opportunities as associates with permanent contracts, which means they can improve their skills at Bosch and, in turn, their prospects in the labor market. In addition, the company employs some 17,000 subcontracted personnel. Whenever we draw on subcontracted personnel, we give due regard to compliance with legal frameworks and respecting any collective bargaining agreements.

Implications of the mobility transformation

The automotive industry is going through fundamental disruption that also presents considerable challenges for Bosch. The following comparison illustrates the implications of technological change in the context of more sustainable mobility: if it takes ten associates to manufacture a diesel injection system, only three are needed to manufacture a gasoline injection system, and only one for an electric drive. Challenging economic trends also leave Bosch with no choice but to adjust its workforce.

Our objective is to make this transition in as socially acceptable a manner as possible and consistent with our people strategy. The commitment to making adjustments as socially acceptable as possible is also enshrined in various collective bargaining agreements with employee representatives and in a combined works agreement governing how crisis situations are dealt with. As a respon-

sible employer, we want to cooperate with the works councils and trade unions in our associates' interest and find constructive solutions to save jobs.

Aiming to keep as many people – and their skills and expertise – on board as possible, we exercise options to reduce weekly working hours. As the various business units and locations are affected in different ways by current developments, differentiated solutions are needed. One example is the dedicated referral platforms that have been specifically set up for Bosch to refer associates internally (potentially after training) or externally to other employers (seamlessly from one job to another). This notwithstanding, we prioritize adjustments based on natural attrition, early retirement, and voluntary redundancy on the basis of severance pay. We also make use of possibilities to reduce working hours, including as a means of offering our associates partial retirement options.

A broad package of diverse measures permitted Bosch to transform its factory in Bietigheim without redundancies in 2021. Instead, voluntary agreements were reached with all associates. The measures to reduce working hours agreed in 2020 with works councils at the Bamberg, Feuerbach, Homburg, and Nuremberg sites remain in effect. At the same time, redundancies have been ruled out for the duration of the agreement.

5.2 Employer of choice

Bosch is a well-established employer of choice. In a highly competitive labor market, it is vital that we attract the best talent and make sure they remain enthusiastic about Bosch in the long term. This applies in particular to talent that drives forward our transformation from a traditional hardware manufacturer to a leading supplier of connected hardware, software, and services. We offer extensive learning opportunities to encourage our associates to continuously advance their qualifications and help them take on new tasks and business fields. We analyze changes in skills profiles for this purpose.

We accompany our associates in their professional development and help them strike a work-life balance. To this end, we offer personalized development paths to

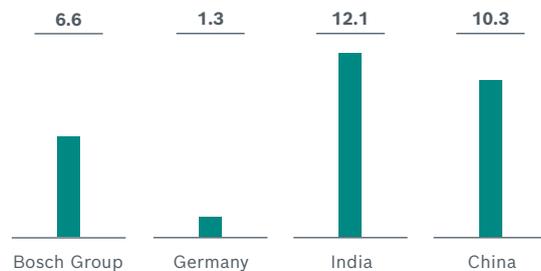
address changing needs at different life stages. In this way, we create work conditions for everyone within the company that allow each individual to reach their full potential and optimally contribute their creativity (also see the “[Learning and development](#)” section).

To position Bosch as employer of choice in a highly competitive labor market, we launched the Work #LikeABosch campaign in 2021. It is intended to convey, tongue in cheek, the core values that we as an employer embrace: from a whole range of development opportunities to respectful teamwork and through to an environment shaped by clear values and a culture of sustainability (see the “[Company | Sustainability strategy and culture](#)” section).

The fact that our associates rarely terminate their employment relationship speaks for itself. However, there are regional differences. While it is more common for workers in India and China to switch employers frequently, in Germany they tend to remain loyal to their company for a very long time. We benchmark our turnover rate against the respective market average as an indicator of how attractive we are as employer. As a result, we are able to make any adjustments necessary to our working conditions at an early stage. Our objective is to always keep voluntary turnover at Bosch below the average for each respective country. In Germany, where we employ around a third of our workforce, the turnover rate is just 1.3 percent. The global average for the reporting year is 6.6 percent.

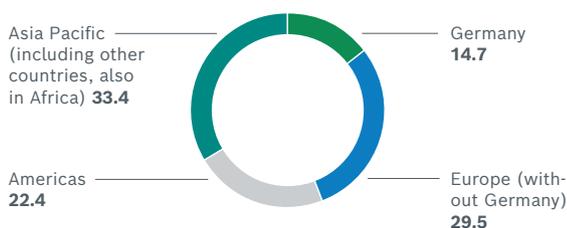
43 | Voluntary turnover rate

Bosch Group 2021 by selected countries, in %



44 | New hires

Bosch Group by region, in %, as of December 31, 2021



Remuneration and social benefits

Bosch sees itself as a hands-on social partner that actively helps shape agreements, sets attractive parameters, and offers its workforce pay that reflects performance and the market. Company pension benefits

are generally paid worldwide and are also granted to associates working part time. However, there are regional differences in their terms and conditions. Where benefits are tied to the level of income, they vary in terms of amount. In addition, we offer our associates other social benefits, such as under the company healthcare scheme (also see the "[Occupational health and safety](#)" section).

Basic principles of the remuneration system

Bosch has established remuneration principles applicable worldwide governing fair pay in line with market conditions. If the requirements and tasks are comparable, Bosch makes no distinction in the remuneration of male and female associates. Individual remuneration arrangements comprise fixed and variable components and typically reflect the requirements of the given job. Performance-related or market-specific aspects are additionally taken into account for some groups of associates. In the case of groups of associates subject to rules comparable with collective bargaining agreements, remuneration models are adapted to local and regional regulations. All statutory minimum wage regulations in individual countries are complied with in full.

The principles underlying the remuneration system at Bosch are governed by a central directive that is applicable worldwide. It is intended to ensure an attractive remuneration level in line with market conditions for all associates and strengthen our competitive position while enabling adjustment of remuneration systems to local conditions in response to the increasing volatility of markets. As a consequence, within the framework of the defined basic principles, differences can arise in the remuneration systems of individual operating units, regions, countries, and locations. Worldwide standards also apply to management remuneration at Bosch. Having become anachronistic, individual bonuses were replaced at Bosch back in 2016 with a collective profit participation model for management.

Work-life balance

Bosch wants to support its associates in striking a balance between their individual career goals, personal lifestyle, and private objectives. To that end, we are working on the continuous flexibilization of when and where associates work – through initiatives such as Smart Work – in compliance with legal requirements. A determinant of success in this context is the continuous evolution of our work culture. With this in mind, we share best-practice examples via internal communication channels to provide executives and associates guidance on how to achieve a successful work-life balance. Our guidelines for a flexible and family-friendly work culture cover, among other aspects, a fast return to work after a period of leave or part-time leadership. In the interim, they have been adopted in many countries or adapted to country-specific requirements. Various working time models have also been introduced in this context (especially mobile working and part-time models), for example, in China, India, Mexico, and the United States.

Flexible working conditions

Bosch sees itself as a pioneer when it comes to regulations allowing mobile and flexible working. We empower our associates to structure their working time individually while addressing business requirements in the best possible way. Accordingly, more than 100 different working time models are used in the Bosch Group across all hierarchy levels, including part-time work or job sharing. Associates can adjust these models to their individual needs in consultation with their line managers.

Back in early 2014, we introduced in a combined works agreement the right of associates to mobile working to the extent that it is compatible with their tasks. In 2018, these rules were adopted in the collectively bargained regional agreement for the metal industry and are disseminated internationally as a basic principle today. The experience we have gathered with mobile and hybrid working played no small role in helping Bosch navigate the many challenges posed by the pandemic to date.

Personalized solutions thanks to Smart Work

Up to 130,000 associates worldwide were working from home during the pandemic-related lockdowns. On top of that, there were a large number of requirements to meet within a very short period of time – from providing the hardware needed at short notice and secure mobile access to the Bosch network and the Bosch Cloud right through to sharing the knowledge needed to use the new collaboration tools efficiently. We mastered these challenges successfully – and they revealed the great opportunities that mobile and hybrid working offers for Bosch.

To harness these, the company launched the Smart Work initiative. It combines the experiences made with mobile working and Bosch's business objectives – thereby setting out the framework for global collaboration at Bosch. One key principle in this respect is that work done outside company premises is just as valuable as work done on-site. Associates can decide where to do their work upon arrangement with their team and as long as the place of work is suitable for the task. There is no general restriction on the number of work days on which associates can do mobile work. The teams can decide together with their line managers how they want to organize their working day to fulfill their tasks. This way, Smart Work produces personalized solutions that meet the company's requirements and at the same time take account of location- and country-specific factors as well as the wishes of the diverse teams and their members. We are confident that the greater autonomy our associates enjoy is an important foundation for achieving the best possible results – and that this approach will further reinforce the appeal of Bosch as an employer.

Other agreements and benefits

By creating a work environment that is as flexible as possible, we help our associates to strike a work-life balance. Furthermore, we support them by offering childcare at specific locations as well as the option to take parental leave or leave of absence to care for family members. In addition, they can take sabbaticals, special leave, or paid leave in special circumstances. Especially with families in mind, Bosch offers a broad spectrum of measures in order to arrange care services in emergencies, for instance. Associates are also active, for example, in "Elder Care" – a working group that offers a platform on the family@bosch forum dedicated to the

exchange of information on, and experience with, taking care of family members and that supports affected colleagues with advice and assistance. In principle, the aforementioned offers are also available to associates on limited-term contracts. The same applies to the use of our portal offering a nursing care information service as well as direct contact with nursing care providers.

Diversity, equity, and inclusion

Bosch values the diversity of its associates' perspectives, experience, and lifestyles. We are convinced that teams with a range of perspectives, educational and cultural backgrounds, as well as personal qualities often produce better results and that mutual appreciation of each team member's uniqueness is beneficial for the work climate. That is why we have firmly anchored diversity in our mission statement "We are Bosch" as one of our values and foster and encourage diversity as part of our corporate strategy. Our Code of Business Conduct, too, underscores that Bosch respects and protects the personal dignity of each individual, tolerates neither discrimination nor harassment, and promotes diversity. It is very important to us that – irrespective of gender, age, background, or any other aspects – all associates around the globe feel valued and can devote their individual strengths, expertise, and potential to the company.

Associates have various options for reporting possible violations of Bosch values. For example, each department has a liaison officer who serves as trusted contact person. They can also arrange an appointment with our social services or a diversity manager who are sworn to secrecy. More broadly, the Bosch whistleblower system provides associates a platform for reporting complaints to the compliance department – anonymously if they wish – for example, on discriminatory statements.

Dimensions of diversity

In order to do justice to the different dimensions of diversity, we have established a variety of measures. The following are some examples.

► **Gender:** We regard diverse teams as an important competitive advantage, as they strengthen our innovative power and tap significant potential for our company

through their diverse perspectives and strategies for developing solutions. That is why we encourage diversity in teams at all levels and also want to further increase the proportion of women in our total workforce, which is currently 28.3 percent (previous year: 27.7 percent). The primary aim is to further increase the share of women in leadership positions, which – considering all management levels – is currently at 18.4 percent (previous year: 17.8 percent). At present, our target is 20 percent. Observing legal requirements in Germany, Bosch has also set targets for the proportion of women on the supervisory board and the board of management of Robert Bosch GmbH and the German subsidiaries subject to codetermination requirements. For further details, see the annual report (page 33 et seq.).

We support female executives in their professional development through mentoring and seminar programs such as the Business Women's Program. Added to this, there are numerous internal diversity networks, including the women@bosch network. Among others, the heratec network emerged from the latter for all female associates at Bosch who have a scientific-technical background or a high affinity for technology. In 2021, it celebrated its tenth anniversary.

► **Generations:** We work together across generations, taking account of the age groups' various needs and adjusting our leadership tools accordingly. To this end, we use professional training and flexible working (time) models adapted to associates' life stages. Through Bosch Management Support, a subsidiary founded in

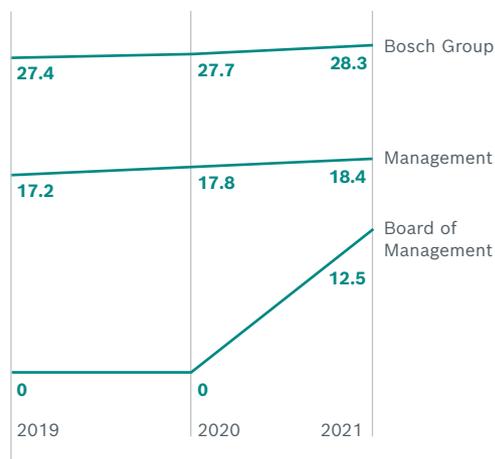
1999, we also temporarily assign project and advisory tasks to former associates. These specialists and executives, who have up to 40 years of Bosch experience, are deployed above all where professional advice is needed at short notice. The pool currently comprises around 2,000 experts worldwide, who are placed internationally.

► **Internationality:** People from around 150 nations work together for Bosch. This diversity allows us to successfully cooperate with our international customers, partners, and suppliers. Accordingly, we attach great importance to fostering our international diversity networks such as *afric@bosch*, *asians@bosch*, *hispanics@bosch*, "For Bosch abroad," and the Bosch Turkish Forum. With over 2,100 international assignments each year, we also encourage international exchange within our workforce. Added to this, there are numerous seminars on the subject of internationality, global collaboration, and various cultures.

► **People with disabilities:** We increase our innovation power by focusing on our associates' individual potential – not on their limitations. That is why we create an inclusive work environment that takes into consideration and appreciates everybody's special needs and skills. Dedicated representatives at the company sites give a voice to the interests of our associates with disabilities. Internal networks, such as the new *Be-Adept@Bosch* network founded in North America, foster exchange. In cooperation with workshops for people with disabilities, we offer additional work inclusion opportunities. With this in mind, we are also active in Germany

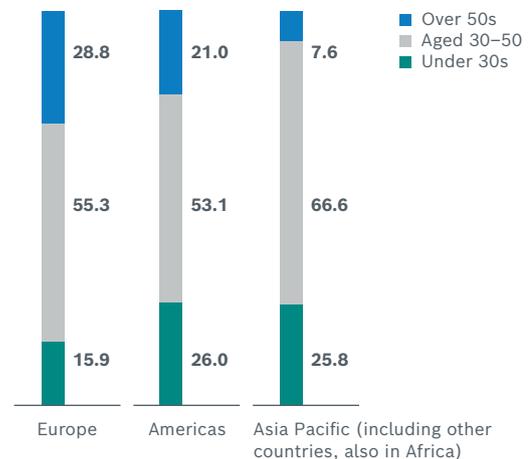
45 | Proportion of women

Bosch Group 2019–2021, in %



46 | Total workforce by age group

Bosch Group by region, in %, as of December 31, 2021



with the association Bundesarbeitsgemeinschaft Werkstätten für behinderte Menschen e. V. (German Federal Association of Sheltered Workshops). At 5.9 percent, the share of people with severe disabilities in the Bosch Group in Germany remains at a level comparable to previous years (previous year: 6.0 percent).

► **LGBT*IQ:** At Bosch, all associates are valued – irrespective of their sexual orientation or gender identity. We support the foundation PrOut@Work, which advocates equal opportunities in the workplace, as well as various networks within the company, such as the b:proud global LGBT*IQ diversity network, which contributes to our open corporate culture. The network is also active outside the company. In 2017, it launched the LGBT*IQ Ally initiative. Allies are associates from all business sectors who are called on to openly address possible incidents of bias or discrimination to help shape the transition to an open work culture. In 2021, the b:proud network further advanced international exchange and stepped up activities in the various LGBT*IQ dimensions.

Diversity Week successfully continued

Launched as a project in 2011, the diversity initiative highlights positive examples of diversity in practice. The message that “diversity is our advantage” is communicated worldwide through a variety of channels. It illustrates the benefits for Bosch and every individual and encourages participation. We want to include all associates and are also exploring new avenues in this context. For example, in 2020, when the Covid-19 pandemic made it impossible to hold International Diversity Days as an in-person event. Instead, the virtual Diversity Week was initiated at short notice, and it was successfully continued in 2021. More than 200 online events in 16 languages reached tens of thousands of people around the world, fostering an international exchange on this important topic.

Awards

Various awards that we received in the reporting period are proof that our measures to attract and retain associates are effective – and that Bosch is the employer of choice for a wide range of target groups. For instance, Bosch made 30th place in Forbes’ “World’s Best Employer 2021” ranking, again putting it in the top group of successful international companies, most of which were from the automotive and software sectors. Each year, the ranking evaluates over 3,000 companies in categories including their ecological footprint, image, talent development, gender equality, and social responsibility. In Germany, the company has always been one of the most sought-after employers. In 2021, this was confirmed once again by the “Germany’s best employers” survey, in which Bosch came second in the industry sector. The nationwide survey was carried out by the ServiceValue market analysis institute in cooperation with the WELT newspaper. It ranked 3,953 companies from the services, retail, and industry sectors according to their attractiveness as an employer.

In the automotive industry, too, Bosch ranks as one of Germany’s most popular employers, as evidenced by its second place in the Automotive TopCareer Award in 2021. Bosch’s high standing among experts and executives was also evident in the Professionals Barometer published by Trendence. Out of a total of 230 companies, Bosch ranked fifth, and for engineers it even made second place. In recognition of Bosch’s initiatives toward gender equity in the workplace, the company received the WEP Brazil Award in bronze in the large enterprise category in 2021. The award is conferred by the United Nations (UN) as part of the UN Global Compact and by UN Women. It is awarded to encourage and recognize companies’ efforts in advocating gender equity in Brazil. Back in 2019, Bosch had already received a special mention. The present award testifies to the progress Bosch has made in the indicators evaluated and encourages us to continue along the path we have chosen.

5.3 Leadership and collaboration

Good leadership and collaboration are founded on a willingness to continuously reflect our convictions and associated actions. The ten principles of the “We LEAD Bosch” leadership model summarize this underlying foundation. The principles are addressed to managers and associates equally and describe the leadership and collaboration culture desired in the company – both within and outside official and disciplinary leadership roles.

It is the job of our executives to shape the conditions such that each individual associate can develop and realize their potential (for further details on development, see the [“Learning and development”](#) section). Executives should be respected and recognized as role models, create an atmosphere of trust, be reliable partners, and also promote an open corporate culture. They support their team members’ autonomy, for example, by removing obstacles or establishing conducive framework conditions.

Feedback and survey

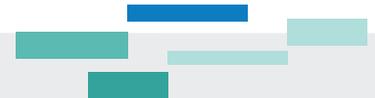
Bosch is undergoing one of its most fundamental transformation processes ever. To enable change, corporate culture must change as well. This involves redefining leadership and collaboration, with clear, purpose-driven feedback as the key to improvement. With our new “impact:” feedback landscape, we want to give associates the opportunity to express their opinions and initiate changes. Digitally implemented, in the future surveys can be conducted with greater frequency and on a wider variety of themes. The data are collected systematically, allowing those in charge to identify any need for action or change at an earlier stage than before and, as a result, to make any necessary adjustments faster. Priority topics are strategy, teaming, and leadership. Our associates’ experience when they join the company or obtained as part of training courses is also taken into account. “impact:” sets the focus on the difference associates can make with their contribution. It offers the following elements.

Leadership requires self-reflection

In times of radical change and transformation, leaders have a special responsibility toward their team. They are called on to actively shape change and also have to manage risks and uncertainties. To support others successfully in this respect, executives must first learn to lead themselves.

This was the underlying conviction that gave rise to the “transform2grow lab” in the Mobility Solutions division. Around 500 executives worldwide were invited to go on a virtual learning journey. Based on the transform2grow

mobility strategy and the related changes affecting executives and associates alike, participants were offered a range of different modules and perspectives to help them reflect on their personal values, attitudes, and individual conduct. This increases their personal resilience in dealing with changes and challenges and also creates the basis for accompanying associates through the transformation.



- ▶ **impact:strategy** – feedback to management on how the company is steered and how strategy, transformation, and culture are implemented
- ▶ **impact:team** – feedback on the development and cooperation of the respective team
- ▶ **impact:leadership** – feedback on a team's leadership
- ▶ **impact:experience** – feedback on associates' experience at key moments during their individual career

The methods and building blocks of the new feedback landscape are being successively developed and established in the company. The rollout in stages of impact:experience began in October 2020. By the end of 2021, impact:experience was already available to more than 200,000 associates from ten divisions in 11 countries. In a next step, the impact:strategy building block is scheduled to be introduced in 2022, and piloting of impact:team is planned for the same year. The aim is also to establish impact:experience throughout the company by the second quarter of 2023. impact:leadership was launched at the beginning of 2021 and is now available to all executives worldwide. One of its central components is Leadership Feedback 360°, which allows executives to obtain comprehensive feedback on their leadership skills. Despite pandemic-related restrictions, in 2021 more than 1,200 executives took advantage of the opportunity to get feedback from their teams, supervisors, and colleagues, and to work on their leadership behavior.

Leadership survey

Once a year, in the Executive Pulse Check, Bosch asks executives around the world for their opinions and views on current strategic topics. This allows us to systematically determine sentiment in the company and identify where there is any need to change our strategic alignment. The survey results are put together with recommended actions for the board of management. They are also shared transparently with all participating executives and are additionally used to prepare internal dialogue events for executives and associates.

Close to 60 percent of executives invited took part in the most recent Executive Pulse Check in October 2021. The content focus was placed on the current business situation, the strategic issues shaping the future, and Bosch's technological and cultural transformation. Ninety-

eight percent of executives – that is ten percent more than in the previous year – indicated that they feel well informed about the business situation. The vast majority of executives felt sufficiently empowered to communicate the key elements of corporate strategy (87 percent). In addition, 93 percent of executives believe that company-wide carbon neutrality and corresponding sustainability activities will prove a competitive advantage for Bosch – up ten percent compared with the survey result the year before. The same percentage of executives (93 percent) believe Bosch is right in maintaining a technology-agnostic stance as regards the powertrain of the future. Feedback was especially positive on health protection during the pandemic. As many as 99 percent of our executives affirmed that Bosch has done a good job in this vital aspect.

Employee rights

Bosch has a tradition of maintaining open and constructive dialogue with employee representatives. Its aim is to make decisions in consensus to the greatest extent possible. We are convinced that we can implement the change processes needed to secure our competitiveness only in cooperation with employee representatives – in other words, if associates and the company equally share the responsibility for the future of Bosch. As part of a transparent and open information and communication policy, briefings are provided in a timely manner and with due regard to the relevant facts and national regulations.

The framework for cooperation with employee representatives as well as the corresponding agreements is defined by a central directive applicable worldwide. This is based on the Basic Principles of Social Responsibility at Bosch that have been in effect since 2004 and govern all relations between entities of the Bosch Group worldwide and employee representatives. Among other matters, the central directive lays down regulations in accordance with ILO conventions 87 and 98, which guarantee workers' freedom of association and the right to collective bargaining. For instance, the directive sets out that workers can form independent trade unions and join them of their own free will or participate in the election or formation of employee representation. In addition, nobody in the company receives preferential treatment or is disadvantaged on account of their membership in a trade union or employee representation. The Basic Principles of Social Responsibility at Bosch are freely

accessible on the Internet in more than 30 languages and are also available on the intranet. Our executives receive training to help them comply with these principles (see section “[Management approach | Guidelines and standards](#)”).

Associates can report noncompliant conduct via the compliance hotline. In addition, the Basic Principles of Social Responsibility at Bosch give everyone in the company the right to complain to their respective line manager or senior management if they believe that they have been treated unfairly or discriminated against with regard to their working conditions. Associates will not suffer any disadvantage as a result of lodging such complaints.

Another established process is in place for the handling of complaints by the international network of employee representatives (trade unions and European works council). Individual cases are then handed over – for example, by the chairperson of the European works council – to the competent corporate office, the board of management, or the supervisory board. The central directive on “Cooperation and agreements with employee representatives” provides for the appointment by the company of a negotiating partner for existing employee representatives. The person appointed must have wide-ranging powers of representation for the unit concerned, is appointed through a formal process, and is responsible for collaborating with the relevant employee representative body. This creates an important organizational factor in ensuring that the rights of employee representatives are upheld.

Cooperation with works councils and trade unions

Practically all Bosch locations in Germany have a works council and the associates are subject to works agreements. Only a few small units are the exception to the rule. Collective bargaining agreements are in effect for practically all units at Bosch in Germany, covering some 114,800 associates, or roughly 76 percent of the workforce. On account of the general validity of original national or group works agreements, even for locations without a works council, all associates of the Bosch Group in Germany are also covered by collective agreements. The only exception to this rule is senior executives.

Bosch has also concluded collective bargaining agreements in many countries outside Germany, both within the EU and in countries such as Turkey, Malaysia, Serbia, Japan, and India. Combined works agreements additionally govern cohesion and cooperation in the company. European works councils provide institutionalized cross-border employee representation in Europe. In accordance with the respective national regulations, there are local employee representatives in China and India, for example, but also in many other countries.

Agreements with the International Trade Union Confederation

Based on the ILO core labor standards, Bosch already entered into agreements with the International Trade Union Confederation as early as 2004. In particular, the colleagues responsible in the regions locally maintain dialogue channels with employee representatives and the relevant organizations. In this process, we relentlessly strive to improve conditions in the respective countries. Restrictions on the rights of employee representatives are identified in particular in cooperation with the combined works council, the European works council, and the international employee representatives. If any problems arise locally in the process of implementing our standards, the HR corporate sector deals with the issue and works toward finding a solution that achieves the greatest possible consensus according to our principles.

5.4 Learning and development

Dynamic technological progress as well as new working processes and methods make lifelong learning crucial for all associates. For Bosch, a qualified workforce is a strategic determinant of success. We see ourselves as a learning organization in which learning is an integral element of day-to-day work. This includes building up the competencies that will be relevant in the future and empowering people to acquire knowledge faster and more flexibly. As a result, our associates benefit from increased employability and the company secures its competitive position.

Associate development

In response to ever-changing framework conditions and requirements, we continuously adapt and optimize all associate development formats. We create a framework and promote a culture that encourages our associates to shape their individual careers according to their abilities and interests. Our development formats aim to match the motivation and expertise of our associates with the needs of the company. A wide range of options are avail-

able to associates, executives, and HR business partners to discuss individual development goals together and agree on suitable measures to achieve these goals.

Competence management at Bosch is a systematic process for identifying professional and methodological competencies and helping associates to develop. The aim is to ensure that the right abilities are available in the right place at the right time. By "competencies" we mean our attributes, skills, and behavior, which are key to successfully dealing with current and future tasks. Our competence model sets the framework for recruitment, feedback talks, assessment of potential, and support programs. It comprises four competence areas, each of which has two competencies assigned.

- ▶ **Entrepreneurial competence**
Result orientation, future orientation
- ▶ **Leadership competence**
Leading myself, leading others
- ▶ **Interpersonal competence**
Collaboration, communication
- ▶ **Professional competence**
Breadth of experience, depth of knowledge

Focus on personal skills

Since 2021, Bosch offers the Skill Hub as a marketplace for training opportunities. Based on their competencies and skills, associates can find up-to-date project and job offers here as well as personalized learning opportunities including mentoring. This empowers them to take charge of their own career while at the same time providing them with personalized development and learning opportunities. The Skill Hub also puts the company in

a position to access any capacities needed quickly and flexibly and support associates even better in developing their competencies. The tool was introduced in India, China, and the EU for more than 50,000 associates in 2021. Further regions will follow in 2022.



The competence model is applied in different formats that support our associates in their personal development.

Goal and performance dialogue: As part of the annual goal and performance dialogue, executives and associates look back over what was achieved in the past year, discuss targets for the year ahead, and give each other feedback. Despite pandemic-related restrictions, some 199,000 dialogues were held in 2021.

Personal development dialogue: To better reflect the requirements of agile working, in 2021 the personal development dialogue was introduced in units that apply agile methods. In this format, associates talk to a person of their choice about their personal development. It can replace the goal and performance dialogue in these units.

Career and development dialogue: The career and development dialogue takes place between associates and their line manager, the next higher executive, and their HR business partner. It deals with the associate's medium- and long-term development goals and sets out the course for their achievement. In 2021, the number of dialogues held increased again to around 3,400, having fallen to 2,500 dialogues in 2020 due to restrictions associated with the Covid-19 pandemic.

Talent and associate review: Once a year, supervisors and HR business partners discuss the potential of their staff so as to identify and advance talent at an early stage.

Talent pool: Talent pool members take part in training programs to prepare for the requirements of the next-higher level. This membership gives them the opportunity to network across sectors. In 2021, the number of associates in the talent pool increased to around 6,900, a new record number.

Bosch Learning Company initiative

Launched in 2016, the Bosch Learning Company (BLC) initiative aims to get our associates in shape for the digital transformation and to establish a learning, leadership, and collaboration culture that enables self-determined, lifelong learning. The BLC program is available at all company sites worldwide and provides learning opportunities on different topics in a range of formats for associates across all organizational levels. Developed by international teams that combine various perspectives, the content offered is structured into three pillars.

► **Certified training:** The first BLC pillar combines various certified training programs with which we aim to give associates practical support in meeting new challenges. To this end, we have developed learning opportunities tailored to their needs. Here, too, the focus is on digital transformation. The courses are open to all associates and include topics such as digital transformation in a nutshell, training for specific software, or Web-based training such as for AI and big data that was developed in cooperation with the Bosch Center for Artificial Intelligence (BCAI).

► **Digital learning:** This pillar covers projects on the infrastructure of digital learning. An array of digital formats is available to individual associates or complete teams to quickly and flexibly take up training opportunities tailored to their needs. In 2021, attention was given to further developing the existing digital learning infrastructure – partly so we can make digital solutions available quickly during the continuing pandemic. Bosch's proprietary Learning Portal received new features in this connection: trainers, HR, and specialists can now create learning paths and guide associates through the training opportunities in a more targeted manner. In addition, new e-universities (external, digital learning platforms) have been integrated and their courses linked up with the learning portal's search function, thus providing associates a one-stop shop for their learning needs. There are also plans to personalize learning recommendations to match the associate's position and level of knowledge.

► Self-managed learning and a culture of learning:

This pillar is where the BLC's "Learnagility Toolbox" shines. It pools a variety of learning formats, some of which are informal or self-managed by associates, with participants sharing their knowledge in a network. Also included are self-organized learning forums or, for example, the Working Out Loud initiative, which offers over 1,000 events each year. In addition, associates can publish their own instructive videos on the internal Bosch Tube platform. The range is constantly growing: over 4,500 learning videos are already available on the platform today, around 3,200 more than a year ago.

Investment in training

In 2021, Bosch invested 203 million euros (previous year: 122 million euros) in training for its associates. Owing to the pandemic, once again a large number of classroom training courses had to be canceled. Furthermore, in 2021, Bosch focused its training programs on topics that are particularly relevant to the transformation in order to address the difficult economic conditions. To put this in perspective: in the four years before the Covid-19 pandemic, Bosch spent an average of 286 million euros per year on training measures.

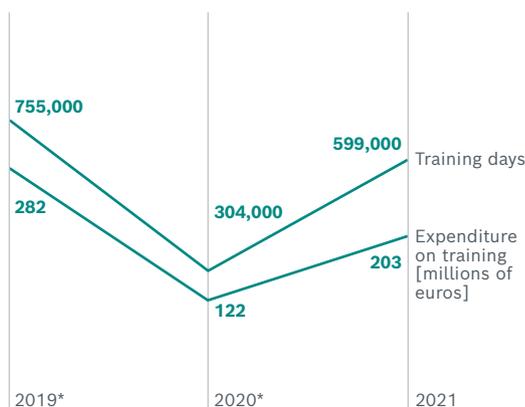
In total, our associates attended roughly 599,000 training days in 2021, including seminars and webinars (previous year: 304,000). These training measures are based on target-group-specific curricula set for associates with standardized profiles. At present, there are about 3,300 (previous year: 3,600) target-group-specific cur-

ricula, and roughly 151,000 (previous year: 146,000) associates use at least one such learning curriculum for their training. In an effort to enable associates to continue their training during the pandemic, numerous face-to-face events were again converted into digital formats in 2021. A total of 59 percent of all training events were held digitally in 2021 (previous year: 36 percent). Looking ahead, Bosch will continue to focus on digitalizing the training offered. The aim is to offer 80 percent of all events in a digital format by 2025 – without compromising quality, learning success, or participants' satisfaction. In this respect, learning formats that can be used anytime and anywhere (learning in the moment of need) are gaining in importance. For example, more than 24,200 e-university licenses were granted to associates in 2021.

Online assessments are used to directly test the success of individual training measures. In addition, the Learning Management System permits effectiveness audits in accordance with ISO for all formal further training measures. Target-group-specific curricula aligned to the competencies required by specific groups of associates are revised each year by what are known as "subject owners" and adapted accordingly as requirements change. All training measures carried out are systematically evaluated. The resulting associate feedback obtained is made available by the training providers and taken into account in future revisions.

47 | Training activities

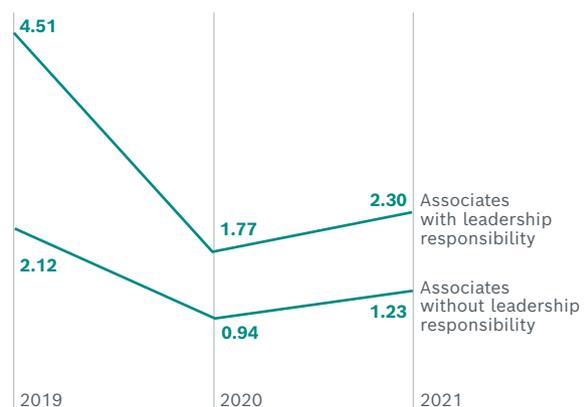
Bosch Group 2019–2021



* Restated due to improved data compilation methodology.

48 | Average training days

Bosch Group 2019–2021, without BSH Hausgeräte



Vocational training and university studies

For over 100 years, Bosch has been using apprenticeships and traineeships as a means of covering its needs for qualified young talent, while also assuming its corporate social responsibility. Back in 1913, Robert Bosch founded the first apprentices' workshop. Bosch's vocational training measures are offered at about 50 company locations in Germany and 100 branches in more than 30 countries. Our young talents have a choice of over 30 career profiles. At present, more than 6,000 (previous year: 6,200) Bosch apprentices and trainees around the world are preparing for their future careers, some 4,000 of those in Germany. Once their training is completed, we usually offer suitable young talent a permanent job. In recent years, the hiring rate was around 90 percent.

For years, Bosch has been training more candidates than it needs, offering in Germany alone roughly 1,300 apprenticeships and traineeships every year, with about 350 of those as part of programs with universities of cooperative education. The over 15,000 applications on average for these training positions are testament to just how appealing training at Bosch is for career starters. As a rule, we offer to about 20 percent of a

year's trainee intake the opportunity to enroll in our international trainee exchange and obtain international experience, improve their ability to work in a team, take on responsibility, and become independent early on. However, this was not possible in 2021 due to the pandemic.

We reached an important milestone in 2021 with the introduction of Internet-based e-learning systems. These job-profile-specific platforms round out conventional on-site apprenticeships and training and can be accessed by apprentices and trainees via any mobile device any time anywhere.

As a globally operating supplier of technology, Bosch is a role model in the concept of dual education and training in cooperation with universities, including in Asia and Latin America. In cooperation with the Chamber of Industry and Commerce (IHK) and the German chambers of commerce abroad, we are helping establish dual training programs based on the German system in a number of countries, among them China, India, Vietnam, Brazil, and Turkey. For instance, since 2013 Bosch Vietnam Co., Ltd. in cooperation with the Delegate of German Industry and Commerce in Vietnam (AHK Vietnam) and the vocational education center LILAMA2 International Technology College (Dong Nai) has been offering a 3.5-year course to qualify as an industrial mechanic or as mechatronics engineer.

Knowledge sharing by Bosch for Bosch

The Global Days of Learning were held in 2021 with over 500 sessions and more than 150,000 participants – the largest self-organized learning event yet at Bosch. The goal was to use the knowledge available in the organization more efficiently and provide access to it globally

across divisions and national boundaries. Over the course of two weeks, all associates had access to a central calendar to offer or take part in digital sessions in six transformation-relevant categories.

The Global Days of Learning categories: knowledge as the basis for our company's transformation

Social Health Aspects
How can I strengthen myself?

Easy to Work
Tips and tricks to ease the use of tools

Transformation Impulses
Current change projects/initiatives/innovations present themselves

Technology Now
Everything about new technologies at Bosch

New Working Models, Culture and Collaboration
Help for efficient work, collaboration, mindset, and culture

Leadership Impulses
This is how leading (yourself, others, and the business) works

Supporting students

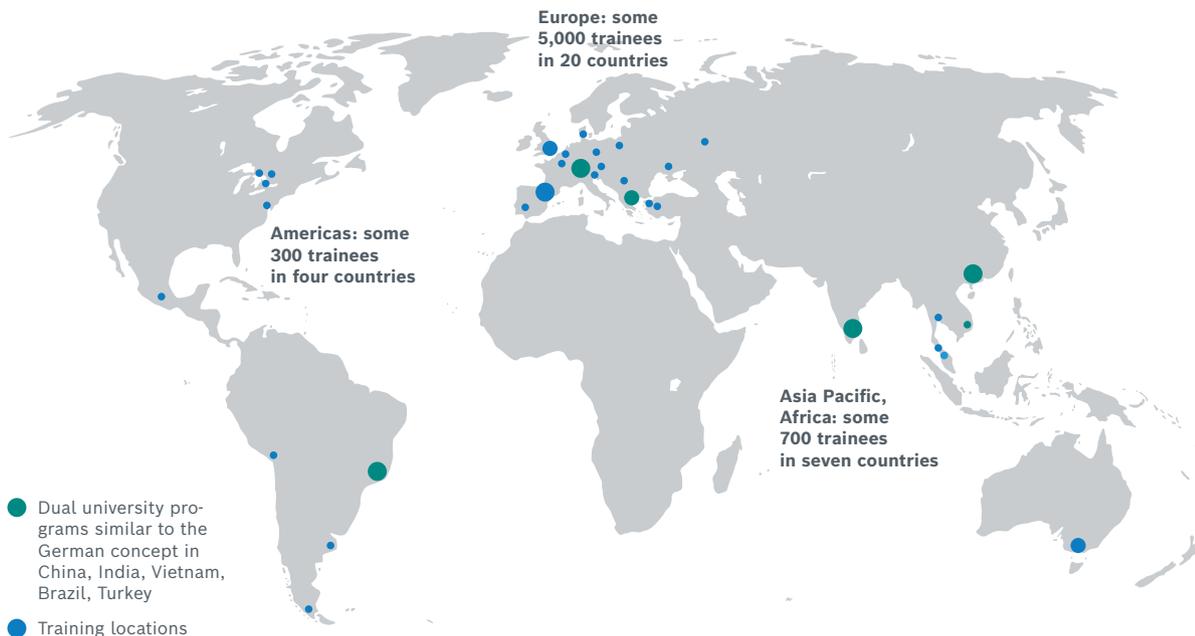
Back in 1972, Bosch together with other companies founded the model of the universities of cooperative education in the state of Baden-Württemberg (today Baden-Württemberg Cooperative State University), making it one of the pioneers of the dual university program in Germany. Today it offers 29 different programs in healthcare, social services, technology, and business. With our PreMaster program, BA graduates can obtain practical experience while they pursue an MA course. This initiative allows us to establish contact with students at an early stage and at the same time help advance their professional and personal development. The program comprises a practical phase at the company (no longer than 12 months) and an MA course phase. Participants are assigned to a specialist department that individually structures the content of the phase served at the company and, together with a personal mentor, supports participants during the complete duration of the program. In 2021, some 700 graduates took part in the PreMaster program.

While still at university, students can already gain deep insights into various fields of work – for example, as part of an internship, on a student work placement, or while working on their final-year project thesis. Diplom and

MA graduates can pursue a PhD within the framework of a three-year employment contract in close cooperation between a specialist department and their university. In addition, Bosch in Germany has been providing financial support for talented students for many years because we believe that education should not be dependent on an individual’s financial means. We also have offers such as mentoring to make sure scholarship holders are ideally prepared for their future advancement. Our associates, too, can apply for a training scholarship.

OVER **6,000** TRAINEES AND APPRENTICES ARE PREPARING FOR THEIR FUTURE CAREERS AT BOSCH IN 2021.

49 | Training and study at Bosch



5.5 Occupational health and safety

Protecting and promoting associates' health and providing a safe working environment at all times are core aspects of Bosch's understanding of its role as a company. This was underscored in 2020 and 2021 in the context of the pandemic response measures and efforts to keep business operations running as best we could. In all corporate decisions, health was always the first concern. All protective measures and instructions have been and continue to be strictly applied.

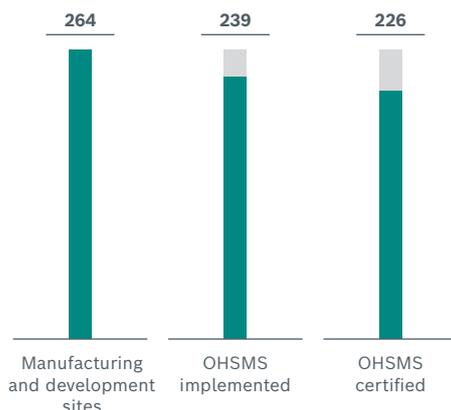
The Sustainability and EHS corporate department manages occupational safety and health protection at Bosch with the help of a central process that is used throughout the Bosch Group. Management of the operating units and local company sites are responsible for compliance with the centrally set requirements and goals. Designated EHS officers support them in this context. Current progress reaching targets is reported regularly as part of management reviews across all levels up to the board of management and also ad hoc in the event of particularly serious incidents (also see the "[Company | Sustainability strategy and culture](#)" section).

A group guideline applicable company-wide defines the principles, organization, and responsibilities for occupational safety in the Bosch Group. Occupational safety and environmental protection policy is framed in the Guidelines of Work Safety and Environmental Protection. The principles and requirements of the group guideline are specified for individual target groups in a central directive that is applicable worldwide. As early as 2007, Bosch introduced an occupational health and safety management system based on the globally recognized standard OHSAS 18001, which has since been developed further and today satisfies the new ISO 45001 standard. As of the end of 2021, 239 of the 264 manufacturing and development sites had already implemented occupational health and safety management systems, of which 95 percent had been certified (also see Fig. 50).

Our goal was for all relevant manufacturing sites and all development sites with more than 50 associates to introduce occupational health and safety management systems and have them certified externally by the end of 2020. Due to the Covid-19 pandemic, it was not possible to reach this goal, but we are continuing to work toward it with rigor.

50 | Occupational health and safety management systems (OHSMS)

Bosch Group 2021



Occupational safety

Preventing accidents and ensuring workplace safety is a crucial part of our responsibility as an employer. Having reached our first target in 2020 – less than 1.7 accidents per 1 million hours worked – and even lowered the accident rate to 1.5, we now want to build on what we have achieved: by 2025, we aim to lower the number of work accidents at Bosch to 1.45 accidents per 1 million hours worked. As production resumed after the pandemic-related restrictions, the accident rate also rose again slightly in 2021: there were 1.62 accidents per 1 million hours worked. It is with great sadness that we have to report one fatal occupational accident in the reporting

year. Despite the slightly higher accident rate, we believe we are on track to reaching our long-term target by 2025. Our efforts are aimed above all at minimizing the risk of accidents.

Every year, we identify and assess potential occupational safety risks and classify them by priority. For this purpose, we refer to accidents reported in the Incident Management System as well as findings from internal audits under ISO 45001 or the audits of the internal audit department. On this basis, we develop specific risk mitigation programs and define key audit matters for subsequent audits. We analyze any occupational accidents causing at least one day of downtime, irrespective of whether Bosch associates or third-party staff are involved. In the event of serious accidents, special problem-solving tools are used for a detailed investigation of the root causes and to derive specific measures.

As in the past few years, in 2021 we again focused on the early detection of dangerous situations and hazards (hazard recognition). To this end, we continue to raise awareness among executives and associates in annual

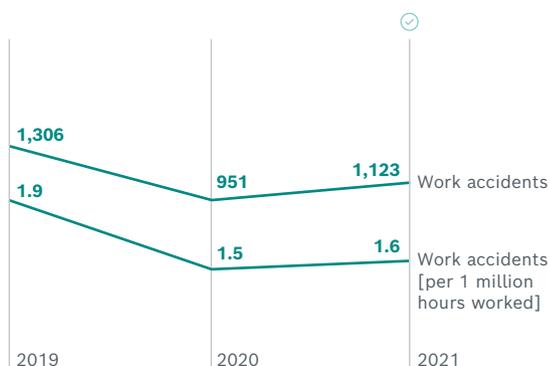
occupational health and safety campaigns on focus topics to empower them to take a proactive approach to preventing accidents in their area.

Based on an internal regulation applicable worldwide, workplace or activity-related hazard assessments are carried out regularly. These are used as a basis for determining any preventive and protective measures needed, and our associates are instructed accordingly. We have

BY 2025, WE WANT TO LOWER THE NUMBER OF WORK ACCIDENTS TO 1.45 PER 1 MILLION HOURS WORKED.

51 | Occupational accidents

Bosch Group 2019–2021



defined clear regulations governing responsibilities and processes in order to ensure occupational safety also when we use external companies. These apply right from the outset when we select a service provider. As of 2019, we have set down in our Terms and Conditions of Purchase significant EHS requirements for suppliers, such as sufficient qualifications of their personnel and safe equipment. Our service providers also agree to name a person charged with ensuring compliance with the supervision and control duty. In addition, our coordinators on-site must be consulted before work is carried out. As part of audits, we check whether the requirements and defined protective measures are being complied with. In the event of discrepancies, appropriate corrective action must be taken before proceeding with the work. Here, too, Bosch is committed to systematically developing its suppliers further (also see the “[Supply chain | Supplier assessments](#)” section).

Bosch meticulously complies with hygiene measures for containing the Covid-19 pandemic, including external companies in its efforts. In the event that any external companies fail to comply with the hygiene measures – for example, by not wearing masks – measures can extend to their being barred from the premises.

Training and awareness-raising measures

It is our conviction that occupational safety begins with individuals, their awareness of problems, and their behavior. This is where we see the greatest potential for improvement, which is why we are focusing on measures to raise the awareness of associates. With six memorable principles, our Safety Basics initiative calls on all executives and associates to always consider occupational safety in their daily work.

- ▶ Safety is the basis for everything we do.
- ▶ As leaders, we care about your safety.
- ▶ We ensure a safe work environment for all.
- ▶ We take care for each other's safety.
- ▶ We speak openly about safety.
- ▶ We have zero tolerance for negligence.

Communication measures such as newsletters, posters, and videos help to reinforce our safety culture and incorporate the principles in standard processes. Regular assessments show how safety basics are practiced and implemented at our company sites. To anchor the principles even more firmly, we also develop campaigns with a different focus each year. Having identified potential for improvement in recognizing hazards based on audit findings back in 2019, the 2021 campaign continued to focus on this area. Company locations were provided with toolboxes containing various communication tools for the

THE SAFETY BASICS INITIATIVE RAISES ASSOCIATES' AWARENESS OF OCCUPATIONAL SAFETY.

campaign priority areas of contractor safety and emergency response. Tailored to specific target groups, the materials for executives and associates cover the most relevant hazards and appropriate countermeasures.

As a large share of accidents is due to human error, we want to raise awareness among our associates for occupational health and safety matters as part of our EHS competence management and through occupational safety instructions and training. We are also deploying

new technologies for this purpose: for example, virtual safety training with augmented reality has been available at numerous locations since 2019. The digitalization of training remains an important topic that has only gained further momentum since 2020 as a result of the pandemic. In the reporting year, numerous training courses were again held online, including the EHS auditor training. This digital format was again met with a good response in its second year: associates from various countries attended the online training and benefited from the international exchange of knowledge and experience. And last, but not least, the Sustainability and EHS Award is another means of raising awareness among associates. In a separate category dedicated to occupational safety, exemplary projects from around the world are selected each year (see the "[Company | Sustainability strategy and culture](#)" section).

Award-winning commitment

Bosch's commitment to occupational safety is recognized worldwide. In China, the Changsha site was praised as a role model for occupational health and safety by the local occupational safety committee, which noted above all the established processes as well as the involvement of associates in occupational safety activities. Occupational health and safety initiatives at the Naganathapura site in India also won awards in 2021: on the occasion of the 50th National Safety Day, the local authority (Karnataka Government's Department of Factories Boiler Industrial Safety & Health) commended Bosch associates in the categories "Best Safety Officer" and "Best Safe Worker." In Turkey, the Bosch site in Manisa was honored by the Turkish employer association MESS in the "behavior-based safety" category. The jury was impressed with a training program developed at the site that provides training stations for associates to experience safety-critical issues themselves – such as handling sharp-edged materials or using personal protective equipment.

Occupational health

Each individual's health is of vital importance both for our associates' motivation and satisfaction and for Bosch as a responsible, high-performing company. We have therefore integrated occupational health in our fundamental principles of work and made them a fixed element of our corporate culture. As a person's health depends on many factors, associates and the company work together as part of a holistic approach to occupational health. Given that good leadership culture and team spirit among colleagues are key in this respect, guidelines for healthy management are firmly anchored in the "We LEAD Bosch" leadership principles.

Our occupational health management system "befit" covers a wide range of topics from preventive medical care and physical and mental fitness to mental health and right through to tips on a healthy diet and workplace design. An important role is also played by our reintegration management, as well as leadership, training, and competence development in relation to individuals' health, and the integration of people with reduced capacity to work and severe disabilities. In Germany and other countries, medical care is provided in the workplace by a large internal network of occupational health services with the support of external providers under cooperation arrangements. In addition, many company locations have specialists for workplace design, in-house social services, and health management to answer health-related questions.

Rigorously tackling Covid-19 further

In the second year of the Covid-19 pandemic, Bosch continues to give first priority to the health of associates. Back in 2020, extensive hygiene measures were taken very quickly to protect associates, and these also extend to third-party personnel. For example, very early on, it became strictly mandatory for all associates to wear masks covering the mouth and nose and to observe minimum distances at company sites. Such measures were flanked by additional possibilities for mobile working and virtual collaboration. The establishment of the company's own mask production line and the rapid introduction of the Vivalytic test also helped to contain the impact of the pandemic. To provide associates with medical support, the medical service set up a Covid-19 hotline, offered a telemedicine service, and designed information material. In addition, all associates were able to consult the latest travel recommendations and warnings at any time.

Besides continuing these measures, in 2021 we focused above all on offering our associates the opportunity to get vaccinated. To this end, Bosch has launched a vaccination campaign and – where permitted by the legal and organizational framework – offers Covid-19 vaccination for associates. In Germany, the vaccination

campaign began in June 2021 at 50 sites. Bosch-internal vaccination centers were set up at the larger sites, such as the research location in Renningen. After initially vaccinating associates, we were soon able to extend the offer to associates' family members. By the end of 2021, the company medical staff had thus administered some 79,000 doses of vaccine in total in Germany, including 13,500 booster shots. The vaccination campaign is to be continued in 2022.

In this connection, the company medical services continuously monitor developments and new scientific findings on Covid-19. Together with Tübingen University Hospital, Bosch is conducting a study on occupational health and safety to help deal with the Covid-19 pandemic. Among other things, the study is analyzing immunological changes at the company. The aim is to explore additional ways of improving occupational health and safety measures to limit the spread of the virus to the greatest extent possible in daily work. It also seeks to provide guidance on how companies can adapt to change in times of crisis. Initial results show that the hygiene and protective measures taken generally are met with a positive response. The final results of the study are expected in 2022.

The health experts work together as a network, which also makes it possible for associates to obtain advice when they have flexible mobile work arrangements. In this connection, the befit communities on the intranet are increasingly gaining in importance. Especially associates with mobile work arrangements can visit these virtual health centers to obtain information about health management at Bosch or quickly find the respective contact persons.

As part of our integrated approach to health management, strategic guidelines were published in 2019 to better meet the needs and tackle the challenges in the individual regions and company sites. The aim is for all health experts to work together as a network and to establish a central point of contact for health issues at the company sites.

To reduce the number of absentees due to sickness, occupational health management at Bosch sets specific priorities based on the experience of the medical service and safety engineers as well as the health report issued by the Bosch company health insurance fund. Insights from occupational reintegration management and hazard assessments are also considered. As a result, medical conditions affecting the musculoskeletal and respiratory systems as well as mental illnesses were identified as focus areas.

What are referred to as the “health working groups” are responsible for implementation at the individual company locations. They comprise representatives from different internal specialist departments – among them the representatives for people with disabilities, occupational health and safety, social services, works council, medical services, canteens and cafeterias, HR, and our cooperation partner, the Bosch health insurance fund – and are available to answer all health-related issues of our associates. In addition, we cooperate closely with external specialists and institutions. These are consulted as required – for example, as part of the OncoCure program that, in cooperation with Robert Bosch Hospital in Stuttgart, enables associates with cancer to get a second opinion and a genetic diagnosis if appropriate. The offer is currently available to associates in Germany, Austria, and Spain. In addition, we offer our associates in Germany free preventive examinations such as skin or colon cancer screening. In 2020 and 2021, numerous digital health offerings were designed and developed to address the special working conditions during the Covid-19 pandemic.



Befit: successful health management during the pandemic at the Bosch site in Cluj, Romania

Comprehensive and flexible in order to cater to various needs: the befit health management program at Bosch's Cluj site was specifically developed to cover in the best possible way the wide range of functions and different personal needs of the nearly 4,000 associates of the automotive electronics plant (Bosch plant in Cluj) and the engineering center. It not only made it possible to successfully organize mobile working during the pandemic, but various health-related online services were also developed and made available to the workforce.

Since many of the 2,800 associates at the Cluj plant were working on-site during the pandemic, a vaccination center was set up at the site, offering vaccines free of charge not only for Bosch associates and their families but also for staff of companies in the neighborhood. The site's medical center also made a contribution, offering regular check-ups for associates and support in determining the next steps in their individual health plan.

Occupational health measures

We group all measures related to health and well-being under the befit program. Within this holistic, workforce-oriented health management program, health experts, executives, and associates work together as partners. Its main focus is preventive medical care, which includes measures such as medical screening, ergonomic workplace inspections, sports and nutrition offers, and seminars on mental stress management. Associates can obtain information about the entire range of services in an online portal. To continuously enhance health management at our company sites, we measure quality in Germany using a capability maturity model and agreed targets. If these are achieved, the Bosch health insurance fund pays out a bonus. In 2021, an amount of roughly 650,000 euros (previous year: 630,000 euros) was thus channeled into occupational health at the company's locations in Germany. In addition to the bonus payments, the company's health insurance fund supported realized befit measures with further funds of around 125,000 euros. Similar initiatives are run in other countries.

Occupational health measures and projects at the individual company sites are tailored to their size and respective needs. As the challenges differ from one country to the next, we manage the activities locally – in particular in countries such as Brazil, China, India, the United Kingdom, and Romania. Regular network meetings enable the capture of synergies between locations and also across national borders in order to offer associates the broadest and most attractive range of services possible. In countries without full medical coverage, associates at many Bosch locations have the option of visiting clinics located directly on-site. We also offer a wide range of training courses on topics as diverse as work-life balance, metabolic disorders, and exercise and health. Last but not least, associates can work on their personal fitness by participating in sports groups.

In-house social services

Bosch knows just how important its associates' mental health is, and the company was one of the first employers in Germany to introduce in-house social services back in 1917. Since 2017, our associates can also take advantage of this offer online to get support for all personal and professional matters. Over 100,000 associates in Germany can contact our in-house social services department through a portal at any time, and anonymously if they wish. Under a works agreement in Germany, we also hold training courses on mental health designed for executives. The Psyga portal provides associates and executives with additional information and tests on mental health and, when needed, indicates who the best person to talk to is.

BEFIT POOLS ALL MEASURES RELATED TO HEALTH AND WELL-BEING.



To further expand our mental health measures, we work together with the University of Ulm. It was in the course of this cooperation that the aforementioned training courses on mental health were designed and evaluated. These have already earned Bosch the Occupational Medicine Award from the Baden-Württemberg metalworking and electrical engineering industry union (Südwestmetall). Due to the positive feedback from the participating executives and the increasing significance of forms of mobile working, the concept is now being developed further.

SOCIETY

Our ambition: Through our actions, we want to promote progress in society and help improve quality of life.



Local commitment

► Brazil: Instituto Robert Bosch has been active for more than 50 years in helping socially disadvantaged young people.



New focal points

► Corporate philanthropy and corporate citizenship activities realigned.



Covid-19 aid in India

► Twelve treatment centers established.



Stakeholder dialogue

► Four dialogue events held on current topics.

6.1 Management approach

We see ourselves as a corporate citizen and take an active stance in society also beyond the scope of our own business activities. In our activities, we distinguish between corporate philanthropy, corporate citizenship, political lobbying, and dialogue with our stakeholders.

Corporate philanthropy

Our donation work focuses on the common good, and we do not expect anything from the recipients in return. The focus of our donation activities is on education and science.

Corporate citizenship

Bosch is active locally at many of its locations around the world – not only financially, but also through the volunteer work of its associates. In some countries, dedicated nonprofit institutions engage in corporate social responsibility activities.

Political lobbying and dialogue with stakeholders

Using our knowledge and our arguments, we actively help shape opinions at the level of government policy and take part in societal debates. Our guiding principle is to provide fact-based and technology-oriented policy advice aimed at harnessing technological progress

for society's benefit. This way, we want to engage in dialogue with policymakers and other stakeholders, based on our values, in order to contribute toward a positive development of society.

As an independent foundation, Robert Bosch Stiftung demonstrates its commitment to society worldwide by supporting or implementing innovative and flagship projects (for more information on Robert Bosch Stiftung, see the "[Company | Bosch Group profile](#)" section).



Bosch Research Foundation

The Bosch Research Foundation was established in 1986 to coincide with the company's centenary. It supports outstanding young scientists who are working to obtain their doctorates at leading research institutes in fields such as algorithms, big data and machine learning, materials science, and medical technology. The foundation funds its support program from the income it generates with its assets and from Bosch donations. In 2021, the Bosch Research Foundation received close to 800,000 euros from Bosch.

6.2 Corporate philanthropy

Our social commitment in the form of donations is carried out by the respective operating units in the countries in question. In the reporting year, the Bosch Group donated 27.6 million euros worldwide (previous year: 21.2 million euros) to charitable purposes, including donations in kind. A group guideline sets out corresponding principles, assessment criteria, and responsibilities. Depending on the amount involved, either the managers of the operating units or the members of the Bosch Group's board of management decide how the funds raised should be spent. All donation transactions must be documented in writing. In addition, the persons responsible keep an annual ledger of donations that is accessible for audit purposes. At a minimum, this ledger must indicate the group of recipients, the amount of the donation, the reasons for the donation, and the date on which confirmation of receipt was received.

The purposes of the donations to date are clearly defined with the focus on education and science. At Bosch, we believe that good education is the key element in providing for the future and therefore a central concern for any company. As a technology group we support universities and research institutions in fields of relevance for our company. In the regions surrounding our company sites, we make donations to schools and childcare centers, for example, as well as social and cultural institutions. This way, we support nature conservation and environmental protection as well as other nonprofit organizations to which our associates volunteer their time. We also make donations to help survivors of natural disasters, especially in the regions where Bosch has operations.

During the disastrous floods in Germany in the summer of 2021, Bosch provided spontaneous help. The company donated one million euros to support the work of the German Red Cross in assisting the people affected. At the same time, various divisions made their own donations in kind to help: Power Tools made tools worth some 200,000 euros available to the German technical relief services (Technisches Hilfswerk) in line with the respective local needs. The thermotechnology division supported selected social organizations

with new heating systems, and BSH Hausgeräte GmbH donated 500 washing machines worth over 80,000 euros, the distribution of which was coordinated by Johanniter Unfallhilfe as part of the "Aktion Deutschland hilft" alliance of German aid organizations. BSH associates also made a contribution of their own: the funds they donated were almost doubled by BSH's management. In the end, via the association BSH Katastrophenhilfe e. V., the company was able to transfer 210,000 euros to various aid organizations.

Furthermore, Bosch is making its contribution to deal with the challenges posed by the Covid-19 pandemic. In 2021, one priority was India, as it was particularly badly affected by the virus in the early summer. Bosch made ventilators and oxygen concentrators worth around one million euros available to the Indian Red Cross in New Delhi. In addition, the company supported training for some 850 paramedics, participated in the enlargement of several health centers in rural areas, and supplied more than 100,000 meals to people in need. Individual Bosch locations also created Covid-19 treatment centers for associates and their families. Bosch has since made the largest of these emergency hospitals, offering 78 beds, available to Bangalore's local government, and it is open to the whole population.

Bosch realigned its corporate philanthropy and corporate citizenship activities at the start of the year 2022 to contribute even more effectively and purposefully to solving the most pressing challenges of our age. We will in future focus our donations on the following kinds of projects.

- ▶ **Living sustainably:** citizen projects promoting climate action in everyday life
- ▶ **Education for the high-tech world:** projects to develop socially disadvantaged children and young people's skills for technological change
- ▶ **Social cohesion:** projects strengthening democracy and tolerance, especially at Bosch locations

6.3. Corporate citizenship

We encourage and support the social commitment of our associates because they embrace our values, demonstrate team spirit, and develop new solutions where required – qualities that also strengthen the innovative power of our company. We encourage the extensive commitment of our associates, for example, by allowing them temporary leave and by setting up regular volunteer meetings. Such initiatives are always organized locally. Moreover, our program for prospective executives in Germany involves supporting a social project of a local organization.

As part of the initiative Wissensfabrik – Unternehmen für Deutschland e. V. (Knowledge Factory – Companies for Germany), over 100 Bosch associates are involved in preschools, schools, and start-ups in their free time. Bosch is a founding member of the business network, which currently comprises some 130 companies and business-related foundations. The aim of the initiative is to spark the interest of young people in technology and business and thereby strengthen Germany's future prospects. Since 2007, the Knowledge Factory has also been organizing the WECONOMY startup competition, through which it supports technology-oriented start-ups with expertise and a network together with various cooperation partners. Bosch is represented on the initiative's steering committee, its executive board, and various task groups, and various members of management at Bosch are also personally committed to the Knowledge Factory and WECONOMY.

Together for society

Bosch associates are working to improve social conditions in many countries, together with the company and in their own initiatives. The oldest and most comprehensive initiative is Primavera – Hilfe für Kinder in Not e. V., which has set itself the goal of helping children in need

in developing and emerging countries and offering them new prospects. Founded in 1990 by ten Bosch associates, Primavera today has more than 1,550 members. Most of them are active or former associates, but Primavera is also increasingly gaining supporters outside the company. At present, the association supports close to 50 projects and roughly 9,000 children in 16 countries worldwide. The projects are supervised by associates of the Bosch locations or their relatives on a voluntary basis. Bosch supports Primavera both with donations and with administration so that every euro donated directly benefits the projects.

The initiative primarily aims to show the children supported ways out of poverty and need. With this in mind, Primavera focuses its support on school education and vocational training activities that empower the children to take control of their lives for the long term. One vital aspect in this respect in developing and emerging countries is medical care for children. The initiative often acts in conjunction with local Bosch companies. In Cairo, for example, Primavera and Robert Bosch Egypt support the Es Salam School (peace school). It is located in the middle of the Moytamadeia district, where people earn their living collecting and sorting garbage. In addition, Primavera finances medical and dental checkups as well as eye tests for the children.

Many Bosch associates also get involved by making regular donations to the community, which is supported by the company. In Germany, associates can choose to take part in the "Cents for help" initiative and donate the cent amounts from their monthly take-home pay; Bosch then doubles the total amount collected. In 2021, the donations collected this way came to more than one million euros. How the funds should be used is decided by a committee comprising an equal number of members from the combined works council, the combined executives' committee, HR representatives, and the donations

department. Associates in Germany can also apply to the “Cents for help” initiative for funds to support a charitable project that is close to their hearts. In France, associates can participate in a similar program called solidarite@bosch. There, our French regional company generously rounds up its associates’ contributions.

Regional support

Some Bosch regional companies have established their own charitable institutions to carry out their CSR activities in accordance with the respective national regulations. Such institutions are usually active in the vicinity of company sites and concentrate on country-specific priorities. Despite regional and cultural differences, however, such charitable activities are required to be recognizable as concerted actions by Bosch. In addition, they must document their work to make their actions transparent and enable the evaluation of their activities.

Instituto Robert Bosch

[Instituto Robert Bosch](#) has been active in Brazil for 50 years. The partnerships built over the past five decades – the institute was founded in 1971 – have already improved the quality of life for thousands of people to date. Founded as Associação Beneficente Robert Bosch, the foundation initially set itself the goal of promoting health and then in 2004 shifted its focus to promoting education as Instituto Robert Bosch. Since then, the foundation has pursued the goal of promoting the development of socially disadvantaged children and young people through education. This includes training

social and emotional competencies as well as technical skills. In 2021, the institute spent around 0.8 million euros on its projects, reaching some 3,500 young people. In addition, the institute motivates Bosch associates to contribute to the projects as volunteers. Indeed, close to 2,500 volunteer hours were logged in 2021, in addition to monetary donations.

One example that illustrates the work of Instituto Robert Bosch is the Formare project that was developed in collaboration with another foundation. The project prepares 46 young people living in the neighborhoods around the Bosch locations in Campinas and Curitiba for their professional development. They work on topics such as time management, communication, personal marketing, goal setting, self-esteem, and self-confidence. The training is provided by some 170 associates working as volunteers who impart their theoretical and practical knowledge after receiving appropriate training from the company. Over the course of the program – Formare has been running for two years – Bosch has to date invested around 0.7 million euros in the young people’s futures. The majority of them were subsequently hired by the company.

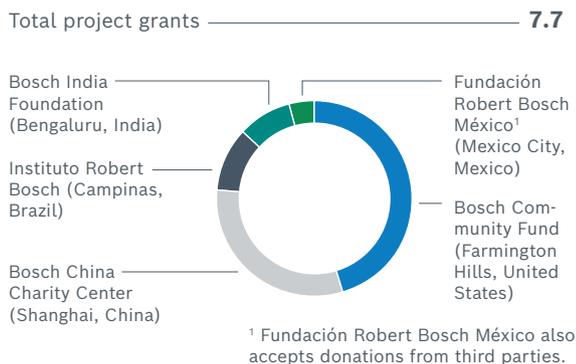
Bosch China Charity Center

Founded in 2011, the [Bosch China Charity Center \(BCCC\)](#) coordinates the social initiatives of our locations in China. True to its guiding principle “Charity for A Better Life,” the center focuses on projects to promote education, reduce poverty, promote social community, and pursue philanthropy. To date more than 300,000 people have benefited from the 235 projects supported by the BCCC. In 2021, the BCCC awarded grants totaling 2.4 million euros. In addition, the projects also benefited from over 6,000 volunteer hours worked by Bosch associates in China.

In early 2021, the BCCC for the fourth time now invited charitable organizations in China to submit proposals for projects to support. As a result, the BCCC received 499 valid applications, including 230 relating to educational development, 88 to combating poverty, and 181 to philanthropy. Following the evaluation of the applications, 32 projects are now to be implemented and will receive funding from Bosch China totaling around 1.7 million euros.

52 | Expenditure on social initiatives

Regional activities 2021, in millions of euros



Bosch India Foundation

Since 2008, the [Bosch India Foundation](#) has been using its education offers to help people lead independent lives, regardless of their background. Its offering spans training courses for unemployed young people from rural areas through to self-help groups for rural women, who can thus start their own microenterprises and earn additional income. Furthermore, the foundation finances medical care for sick children and pregnant women in cooperation with local organizations. Through the range of projects, the foundation supports disadvantaged people in more than 100 villages and promotes education and health among young people. In the past financial year,* Bosch India Foundation's related expenditure totaled around 0.7 million euros. On top of that, local Bosch associates contributed around 500 hours of volunteer work.

In 2021, project implementation was severely restricted as a result of the Covid-19 pandemic. Nevertheless, the foundation succeeded in launching a new program with the Aravind Eye Hospital that offers cataract surgery for senior citizens free of charge. In the reporting period, 870 such operations were carried out, in most cases considerably improving the cataract patients' eyesight.

* For Bosch India Foundation, this is the period from April 1, 2020, to March 31, 2021.

Bosch Community Fund

The [Bosch Community Fund](#) pools the charitable activities of 39 Bosch sites in the United States, Canada, and Costa Rica. The funded projects are in the fields of natural sciences, technology, engineering, mathematics, environmental protection, education, and disaster relief. In 2021, the institution funded 178 projects with a total of about 3.5 million euros. In addition, Bosch associates contributed over 9,500 volunteer hours.

To take an example from the wide breadth of activities: with 20,000 dollars, for one year the Bosch Community Fund sponsored a program of the North Carolina Coastal Federation dealing with how to recycle oyster shells and educating the public accordingly. The program uses

recycled shells to build new oyster reefs in New Bern in North Carolina. This helps to improve the water quality and provides new habitats for fish and other species. In addition, oysters and the reefs they create offer a number of ecological, economic, and social advantages. As a key species in large river estuaries, their health is an indication of that of the entire coastal ecosystem.

Fundación Robert Bosch México

Founded in 2016, [Fundación Robert Bosch México](#) supports the education of disadvantaged children and adolescents in the vicinity of our company sites in Mexico. The foundation provides infrastructure and equipment for schools, awards scholarships, and promotes the development of basic competencies and skills. In 2021, the institution implemented over 40 projects, reaching more than 28,000 children and young people. In addition to the 320,000 euros in funding, Bosch associates contributed more than 800 hours of volunteer work to the educational projects. Aside from donations from the Mexican regional subsidiary, Fundación Robert Bosch México also receives financial support from third parties.

In 2021, the foundation helped to reopen public schools following the lockdown caused by the pandemic by providing classrooms with access to water and ventilation systems, as well as supplying cleaning agents, equipment, and hygiene guidance. The campaign reached more than 20 schools and benefited 13,000 school students and teachers in applying safety and hygiene protocols.

Fundatia Bosch Romania

Founded in the fall of 2020, Fundatia Bosch Romania has not yet been able to start any projects owing to the impact of the Covid-19 pandemic. In 2021, the foundation therefore focused on collecting donations. It now has some 65,000 euros available for activities that are to start in 2022.

6.4 Political lobbying and dialogue with stakeholders

As a supplier of technology with global operations, we believe it is our responsibility to put our deep technology expertise to work for the benefit of society and to point out concrete opportunities as well as solutions to current challenges in society. With this in mind, we help shape opinions at a government policy level, in associations, and in various social forums. This work is driven by our “Invented for life” ambition.

Owing to its expertise in technologies of the future such as artificial intelligence (AI), hydrogen, and connected, automated driving, Bosch is a sought-after partner and thought leader in the political process. We are in favor of standards that are both ambitious and as consistent as possible. For instance, carefully considered supranational EU legislation is preferable to having a large number of national requirements, and it can frequently serve as a global benchmark. New business fields, such as connecting things and services, also create an entirely new need for regulation. At the request of policymakers, Bosch purposefully shares its knowledge in the process for developing the corresponding framework conditions.

Our aim is to advocate for technology and societal solutions in the fields of relevance to us with a focus on technical feasibility and impact on society. We also want to do justice in this regard to the complete spectrum of requirements of our stakeholders. We are committed to remaining politically neutral and seek to engage in dialogue with all relevant political parties.

Clear guidelines provide the framework

Bosch has guidelines applicable throughout the company governing responsibility for political lobbying. Accordingly, the Bosch Group’s government relations are assigned to a corresponding corporate sector, together with group-wide corporate communication. Activities include, among other things, representing the company’s interests vis-à-vis policymakers, associations, and organizations; they are designed to strengthen the company’s reputation, build trust and relationships, and support the company’s profitability and sustainability.

BOSCH IS COMMITTED TO ADVOCATING FOR TECHNOLOGY AND SOCIETAL SOLUTIONS IN FIELDS OF RELEVANCE.



Another central directive governs interactions with politicians, for example, in the run-up to elections, during visits to Bosch locations, or when Bosch associates enter into contact with members of the EU’s political bodies. This also sets out how to comply with the requirements of the EU Transparency Register and in what form Bosch participates in EU consultations. Principles, responsibilities, and tasks relating to setting standards are equally clearly defined at Bosch. The corresponding regulation defines responsibilities for setting public standards and industry or alliance-driven (intercompany) standards.

Transparency as a matter of principle

We want to make our lobbying activities transparent. To this end, we strictly adhere to the various requirements in the respective regions. Headquartered in Berlin, our Corporate Governmental and Stakeholder Affairs department has offices around the world. A total of 35 associates* represent the political interests of the Bosch Group worldwide vis-à-vis institutions, ministries, governments, parliaments, and society.

* Fourteen associates work for Bosch in Berlin, five in Brussels, five at various UN bodies, and a total of 11 at other locations around the world.

Through the Brussels office, Bosch is entered in the Transparency Register of the European Commission and publishes its responses in connection with EU consultations. [Robert Bosch GmbH's entry in the EU Transparency Register](#) describes in detail the company's position and its political interests. In addition, the entry includes the consultations and working groups in which the company takes part. In the reporting year, we spent just over one million euros on activities as defined by the European Transparency Register, primarily on personnel and lease expenses. Five full-time equivalents (FTEs) at Bosch in Brussels are assigned to accompanying EU legislation activities; another four FTEs support these activities with the divisions' technical expertise. In the United States, we are also subject to an obligation to publish and document political activities. There, only

accredited lobbyists are permitted to engage in talks with political representatives. Here, too, Bosch complies with the transparency regulations.

Bosch has a central directive that is binding worldwide and governs gratuities in dealings with third parties. It is only permitted to offer, grant, or accept gratuities in strict compliance with numerous prerequisites. Our rules relating to officials and elected representatives are especially restrictive. Here, it must be ensured that any appearance of influence being exercised is ruled out and that the internal regulations of public authorities are adhered to. Should local law in some regions prescribe stricter or more specific requirements, these must be adopted and complied with.

At the beginning of 2021, Bosch revised its funding policy with respect to political parties in Germany: we no longer make donations here but instead participate in the economic dialogue forums of the parties CDU, CSU, SPD, FDP, and Bündnis 90/Die Grünen. Through these memberships, we strive to provide stable financial support and engage in a productive exchange of ideas from which all participants benefit. The regional organizations are responsible for donations made outside Germany. However, the guidelines require that donations to political parties be submitted to the chairman of Bosch's board of management for his decision. No such matters were presented to him in 2021.

Active stakeholder dialogue

The stakeholder dialogues launched in 2020 have proved their worth and were successfully continued in 2021: a total of four dialogues took place, some of which face-to-face, others using digital formats.

In April 2021, the focus was on the European Green Deal. Together with member of the German Parliament Lisa Badum (Bündnis 90/Die Grünen) and Jörg Hofmann (president of IG Metall trade union), Bosch board of management member Stefan Hartung discussed via digital channels how to achieve a fair and also purposeful transition toward a climate-neutral Europe by 2050. With respect to the mobility transformation, Bosch decidedly advocates technology neutrality.

Toward the end of 2021, representatives of Germany's Federal Ministry of Labor and Social Affairs, the Federal Employment Agency, and the IG Metall trade union spoke to Bosch's director of industrial relations Filiz Albrecht about how to safeguard employment in Germany despite major disruptions and how business, politics, and social partners can work together effectively to keep people in employment. The roundtable took place in Bosch's liaison offices in Berlin. They were joined online by representatives from politics, business, and society, as well as Bosch associates.

Political lobbying activities

Our political lobbying activities aim to identify at an early stage debates and developments concerning policies and initiatives that can affect our products, our company sites, or our business operations in general. As a rule, the Bosch Group supports political framework conditions that are conducive to innovation and endeavors to find possible solutions for the challenges facing society.

Due to our highly diversified product portfolio, we are affected by a large number of legislative projects, including in climate, energy, and environmental conservation policy as well as transport, research, trade policy, data protection laws, cybersecurity, and labor and social policy. At UN level, we advocate for the harmonization of technical standards, for example, for automated driving.

In principle, Bosch's political lobbying activities fall into the following categories.

► **Involvement in committees organized by governments or ministries:** Bosch is involved in committees, forums, and working groups set up and held by governments or other representatives from the public sector. We decide on which committees to take part in based on our priority topics. Here are some recent examples.

In 2021, the European Commission created the European Clean Hydrogen Alliance as part of the EU Green Deal. The chairman of Bosch's board of management has agreed to co-chair the roundtable on clean hydrogen for residential applications.

As part of its cybersecurity activities, Bosch is a member of the Stakeholder Cybersecurity Certification Group of the European Union Agency for Cybersecurity (ENISA). In addition, Bosch is represented on the Federal Government's German Cyber Security Council.

In Germany, Bosch attended the 2021 Auto Summit at the Federal Chancellor's invitation, which allowed the company to present key framework conditions for a successful transformation from the suppliers' perspective.

At the invitation of the state government of Baden-Württemberg, Bosch has been a fixed member of the automotive industry strategy dialogue in the federal state since 2017. Once a year, the results of the working groups are discussed with the state government at a high-level meeting.

► **Contributions to industry networks with a special topic focus:** By contributing to industry networks, we work with other companies to advance topics of relevance for the development of our industry and our company. For example, Bosch is a founding member of Gaia-X European Association for Data and Cloud AISBL, which aims to set up a trustworthy data infrastructure to establish an open, digital ecosystem and help companies share data and scale business models worldwide.

In the automotive area, we are pooling our competencies in the Catena-X network to enable a secure exchange of data between companies among all parties involved in the automotive value chain – an important building block for successful new digital services and related ecosystems. This way, Europe – and Germany in particular – could take the lead in terms of data sovereignty and technology neutrality for an entire industry. The same applies to documenting companies' sustainability performance. As part of Catena-X, a software solution is being developed to make sustainability information, such as carbon footprint or percentage of recycled materials used, securely accessible in a certified form along the entire value chain.

► **Involvement in associations:** Aside from direct dialogue with policymakers, Bosch engages in numerous associations and is actively involved in establishing positions on topics. In Germany, at EU level, and in a number of other countries, we are members of the relevant industry associations. In Germany, for example, we are members of the German Electro and Digital Industry Association (ZVEI), the German Association of the Automotive Industry (VDA), the German Federal Association for Information Technology, Telecommunications, and New Media (BITKOM), and the German Mechanical Engineering Industry Association (VDMA). In addition,

we are active on the executive board and steering committee of econsense – Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e. V. (Forum for Sustainable Development of German Business). In Brussels, we are members of the European Association of Automotive Suppliers (CLEPA) and Digital Europe, and at the international level we are members of the International Chamber of Commerce. In the United States, too, we are also members of the National Association of Manufacturers (NAM) and the Alliance for Automotive Innovation, and we are members of various national automotive industry associations in other countries, including Brazil (Sindipecas), Mexico (INA), and India (ACMA).

To ensure the Bosch Group speaks with one voice at external standard-setting committees, associations, and industry networks, a database was set up in 2021 to create transparency on the involvement of our experts in the respective organizations. The database is accessible for all associates worldwide.

► **Organization of public stakeholder dialogues:**

By means of topic-specific events, we seek to engage in dialogue with policymakers, NGOs, and interested members of the general public. Back in 2019, we launched a new stakeholder dialogue series for this purpose, which has since become an established format for exchange, transparency, and the joint search for solutions. In 2021, we continued the dialogue series with several events in Berlin and in digital format (see the information box on page 108).

► **One-on-one interviews with political stakeholders and NGOs:**

Again in 2021, Bosch associates were in contact with members of the EU Commission, the European Parliament, and representatives of NGOs. In accordance with legal requirements, all meetings at the EU Commission level are documented and published by the Commission.

Priority topics

The priorities of our political lobbying activities are set each year by the board of management. At present, our activities are primarily focused on counteracting the trend toward protectionism worldwide. At the EU level, our attention centers on climate policy and the European Union's data strategy. Furthermore, we support the sustainable design of supply chains.

Our activities centered on the following topics in 2021.

► **Climate action:** The EU Green Deal, which aims to achieve EU climate neutrality by 2050, is of particular importance for Bosch in the coming years. In this context, we advocate for regulation that is open to different technological solutions, while harmonizing environmental, social, and economic considerations in the interest of sustainability. To reach the EU climate goals, all technologies that reduce CO₂ emissions have to be leveraged. These include all forms of electromobility from e-bikes to trucks as well as the cross-sectoral deployment of hydrogen. At a national and EU level, we therefore want to further the development of the hydrogen economy. In 2021, Bosch also put this position forward in legislative processes on mobility of the future, especially with respect to carbon emissions of road traffic, as well as on expanding the emissions trading system for the road transport and buildings sectors.

Another important part of the European Green Deal is how to finance the transformation toward a resource-efficient economy. In this context, attention centered above all on the EU taxonomy for classifying products and services according to their sustainability and expanding the sustainability reporting requirements. Bosch is in favor of the EU's general efforts to achieve more transparent and comparable corporate sustainability information. In implementing these requirements, the task is now to eliminate legal uncertainty and ensure industry-wide application. The awaited European standard should be developed in close cooperation with existing, internationally recognized standards to be available in the near term and avoid redundant reporting in different publications.

► **Digitalization:** Digitalization remains an important component for an innovative and sustainable development of the economy: applications, including the use of AI, must serve humans as well as be safe, robust, and explainable – and thus trustworthy. The year 2021 saw a large number of new regulations relating to digitalization that affect our work significantly as well. The first EU-wide regulatory framework proposal on AI in particular has a significant impact on our business. Bosch is of the opinion that the hurdles for using AI should be as low as possible to allow for further investment in this technology.

► **Autonomous driving:** Germany is the first country in the world to enact a law permitting level 4 automated driving. This has removed one major regulatory hurdle for successfully realizing automated driving. It makes it possible for Bosch to gather important experience under real road conditions and rapidly advance the development of automated vehicles in Germany and Europe. At the same time, Bosch is involved at the UN level in defining the technological requirements of automated vehicles in the interest of ensuring an internationally harmonized development of the technology.

► **Supply chain:** The German Act on Corporate Due Diligence Obligations in Supply Chains (*Lieferkettensorgfaltspflichtengesetz*) is to enter into force in 2023. It is intended to improve the respect of human rights internationally by defining requirements for responsible supply chain management. Bosch supports the objective of the new act and is preparing intensively to implement the new requirements: a number of processes and responsibilities have already been adjusted accordingly (see the “[Supply chain | Social and environmental requirements for suppliers](#)” section). This way, we are creating the framework for managing human rights-related issues in a comprehensive and legally compliant manner.

► **Research and innovation:** As a matter of principle, Bosch only engages in business operations that are viable without support from subsidies. We consider temporary government support a suitable instrument only in efforts to assist breakthroughs in new technologies or for the purpose of implementing industrial policy strategies. In the reporting period, Bosch was awarded funding totaling roughly 49 million euros. This went toward projects including in the fields of semiconductor technol-

ogy (European supply chain for silicon carbide semiconductor technology), software-defined car (software defined from embedded systems through to the cloud for development and operation), and AI (AI basic research for embedded systems with virtual sensor technology and fuel cell management as lead applications).

Policy papers define the course

Aligned policy papers define the Bosch Group’s position on relevant topics. These global policy compass papers are applicable worldwide and are released by the board of management. They are supplemented by specific regional position papers to take account of respective regional or national legislation. These form the basis for political lobbying and provide a summary of facts and arguments, which are also publicly available in the context of EU consultations.

At the end of 2021, global policy compass papers were available on the following topics.

- Sustainable mobility
- Artificial Intelligence of Things (AIoT)
- Connected and automated mobility
- Innovation policy
- International trade
- Radio frequency affairs – 5G
- Energy and climate (hydrogen)

Bosch’s policy corporate department identifies relevant topics and coordinates the policy papers’ content with the respective specialist departments. The papers are then released via the Corporate Communications and Governmental Affairs corporate department, the responsible members of the board of management, and its chairperson.

Annexes

GRI content index

GRI indicators		Comment	Reference*
General standard disclosures			
Organizational profile			
GRI 102-1	Name of the organization		121
GRI 102-2	Activities, brands, products, and services	- Business sectors	8–9
GRI 102-3	Location of headquarters		121
GRI 102-4	Location of operations		8
GRI 102-5	Ownership and legal form	- Ownership structure of Robert Bosch GmbH	8
GRI 102-6	Markets served		8–9
GRI 102-7	Scale of the organization	- Number of associates - Subsidiaries and regional companies	8; 14
GRI 102-8	Information on employees and other workers	- Forms of employment - Turnover, terminations	8; 80–81; 84
GRI 102-9	Supply chain	- Purchasing volume - Logistics, transportation	46–47
GRI 102-10	Significant changes to the organization and its supply chain		No significant changes
GRI 102-11	Precautionary principle or approach	- Design for Environment - Life cycle assessments - Supplier selection - Product Development Code	21; 26–31; 54–56; 60–61
GRI 102-12	External initiatives		16–17; 53; 56; 72; 104; 109
GRI 102-13	Membership of associations		109–110
Strategy			
GRI 102-14	Statement from senior decision maker		4–5
Ethics and integrity			
GRI 102-16	Values, principles, standards, and norms of behavior	- Code of Business Conduct - Basic principles of social responsibility - Mission statement and values - Product Development Code - Code of Conduct for Business Partners - Target vision	9; 11; 21–22; 48; 78; 107

* The references indicate the pages on which the respective GRI content is mentioned within this report. References marked "AR" refer to our annual report 2021.

GRI indicators		Comment	Reference*
Governance			
GRI 102-18	Governance structure	- Board of management and supervisory board	14; 19–21; 60; 79; AR: 10; 16
Stakeholder engagement			
GRI 102-40	List of stakeholder groups		10; 18
GRI 102-41	Collective bargaining agreements	- Works council - Works agreements - Trade unions - Collective bargaining agreements	88
GRI 102-42	Identifying and selecting stakeholders		10; 18
GRI 102-43	Approach to stakeholder engagement	- Dialogue with stakeholders - Sustainability culture - Materiality analysis	10; 14–18; 107–111
GRI 102-44	Key topics and concerns raised	- Dialogue with stakeholders	18; 107–108
Reporting practice			
GRI 102-45	Entities included in the consolidated financial statements	- Consolidated group	121
GRI 102-46	Defining report content and topic boundaries	- Materiality analysis	10
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GRI 102-48	Restatements of information		121
GRI 102-49	Changes in reporting		121
GRI 102-50	Reporting period		121
GRI 102-51	Date of most recent report		April 2021
GRI 102-52	Reporting cycle		121
GRI 102-53	Contact point for questions regarding the report		121
GRI 102-54	Claims of reporting in accordance with the GRI standards		121
GRI 102-55	GRI content index		112–118
GRI 102-56	External assurance		119–120

Economic performance indicators

Economic performance

GRI 201/103	Management approach disclosures	- Climate change adaptation - Economic KPIs - Position on climate change	10–11; AR: 28 et seq.
GRI 201-1	Direct economic value generated and distributed		8; AR: 96
GRI 201-2	Financial implications and other risks and opportunities due to climate change		63–64
GRI 201-4	Financial assistance received from government		108

* The references indicate the pages on which the respective GRI content is mentioned within this report. References marked "AR" refer to our annual report 2021.

GRI indicators		Comment	Reference*
Market presence			
GRI 202/103	Management approach disclosures	- Social benefits	81–82
GRI 202-1	Ratios of standard entry level wage by gender compared to local minimum wage	- Remuneration	81–82
Anti-corruption			
GRI 205/103	Management approach disclosures	- Code of Business Conduct	10; 19–23
GRI 205-2	Communication and training about anti-corruption policies and procedures	- Compliance management system - Compliance training program - Risk management - Code of Conduct for Business Partners	22–23
Anti-competitive behavior			
GRI 206/103	Management approach disclosures	- Code of Business Conduct	10, 19–23
GRI 206-1	Legal actions for anticompetitive behavior, antitrust, and monopoly practices	- Compliance training program - Risk management - Code of Conduct for Business Partners	20; AR: 83 et seq.
Environmental performance indicators			
Materials			
GRI 301/103	Management approach disclosures	- Materials efficiency - Nanotechnology	10–11; 13; 26–31; 39–41; 48–50
GRI 301-1	Materials used by weight or volume	- Percentage of recycled materials used	46
GRI 301-2	Recycled input materials used	- Key materials - Circular economy strategy - Substances of concern	29
Energy			
GRI 302/103	Management approach disclosures	- Energy efficiency, own generation, green electricity, offsets	10–11; 12; 60–61; 62–67
GRI 302-1	Energy consumption within the organization	- Energy efficiency of the products	68
GRI 302-3	Energy intensity	- Energy management system	68
GRI 302-4	Reduction of energy consumption	- Energy consumption	68
GRI 302-4	Reduction of energy consumption	- Reduction targets	64; 66–67
GRI 302-5	Reductions in energy requirements of products and services	- Sales-related energy consumption, energy intensity	32–33; 35–36
Water and effluents			
GRI 303/103	Management approach disclosures	- Volume of wastewater - Quality of wastewater	10–11; 13; 60–61; 72–74
GRI 303-1	Interactions with water as a shared resource	- Products with positive water-related effects, water efficiency	36; 72–73
GRI 303-2	Management of water-discharge-related impacts	- Reduction targets	74
GRI 303-3	Water withdrawal	- Sales-related water consumption, water intensity	72–73
GRI 303-4	Water discharge	- Water withdrawal - Regions with water scarcity	74

* The references indicate the pages on which the respective GRI content is mentioned within this report. References marked "AR" refer to our annual report 2021.

GRI indicators		Comment	Reference*
Emissions			
GRI 305/103	Management approach disclosures	- Energy efficiency, own generation, green electricity, offsets	10-11; 12; 60-61; 62-71
GRI 305-1	Direct (scope 1) GHG emissions	- Logistics, transportation - Mobility management	65
GRI 305-2	Energy indirect (scope 2) GHG emissions	- Reduction targets	65
GRI 305-3	Other indirect (scope 3) GHG emissions	- Greenhouse gas emissions	68-70
GRI 305-4	GHG emissions intensity	- Sales-related GHG emissions, emission intensity	65
GRI 305-5	Reduction of GHG emissions	- Air pollution	64-71
GRI 305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions		71
Waste			
GRI 306/103	Management approach disclosures	- Waste management - Waste generation and disposal	10-11; 13; 26-31; 60-61; 75
GRI 306-1	Waste generation and significant waste-related impacts	- Hazardous waste	75
GRI 306-2	Management of significant waste-related impacts	- Circular economy strategy - Sales-related waste, waste intensity	26-31; 75
GRI 306-4	Waste diverted from disposal		75
GRI 306-5	Waste directed to disposal		75
Environmental compliance			
GRI 307/103	Management approach disclosures	- Compliance management - EHS (environment, health, safety)	10; 14; 20-23; 60-61
GRI 307-1	Noncompliance with environmental laws and regulations	- Environmental management	25
Supplier environmental assessment			
GRI 308/103	Management approach disclosures	- Selection, assessment, and further development of suppliers	10-11; 13; 31; 46-56
GRI 308-2	Negative environmental impacts in the supply chain and actions taken	- Risk analysis to ensure compliance with social and environmental standards - Social and environmental standards - Responsible supply chain management - Code of Conduct for Business Partners	54-56
Social performance indicators			
Employment			
GRI 401/103	Management approach disclosures	- Turnover rate	10; 78-79; 81-83
GRI 401-1	New employee hires and employee turnover	- Work-life balance	81
GRI 401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	- Remuneration and social benefits	81-83

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GRI indicators		Comment	Reference*
Labor/management relations			
GRI 402/103	Management approach disclosures	- Employee rights	10; 78–80; 86–88
GRI 402-1	Minimum notice periods regarding operational changes	- Cooperation with works councils and trade unions - Leadership and collaboration - Terminations - Feedback and surveys	87–88
Occupational health and safety			
GRI 403/103	Management approach disclosures	- Occupational health and safety management system	10–11; 13; 94–99
GRI 403-1	Occupational health and safety management system	- Occupational accidents - Occupational health, prevention	94
GRI 403-2	Hazard identification, risk assessment, and incident investigation	- Safety basics	94–95; 98
GRI 403-3	Occupational health services		97–99
GRI 403-4	Worker participation, consultation, and communication on occupational health and safety		94–96
GRI 403-5	Worker training on occupational health and safety		96, 98–99
GRI 403-6	Promotion of worker health		97–99
GRI 403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships		38–39; 51–57; 94–99
GRI 403-9	Work-related injuries		94–95
GRI 403-10	Work-related ill health		97–98
Training and education			
GRI 404/103	Management approach disclosures	- Vocational training and university studies	10, 78–80; 89–93
GRI 404-1	Average hours of training per year per employee	- Leadership and collaboration - Competence model	91
GRI 404-2	Programs for upgrading employee skills and transition assistance programs	- Learning and learning culture, digital learning, certified training	89–91
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	- Associate development - Training	90
Diversity and equal opportunity			
GRI 405/103	Management approach disclosures	- Equity, equal opportunities - Dimensions of diversity	10–11; 13, 78–80; 83–85
GRI 405-1	Diversity of governance bodies and employees	- Remuneration system	84
GRI 405-2	Ratio of basic salary and remuneration of women to men		82
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GRI 406/103	Management approach disclosures	- Complaint mechanisms, whistleblower system - Equity, equal opportunities	10; 20–23; 46–48; 51–52; 54–56; 83–85
GRI 406-1	Incidents of discrimination and corrective actions taken	- Dimensions of diversity	23

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GRI indicators		Comment	Reference*
Freedom of association and collective bargaining			
GRI 407/103	Management approach disclosures	- Code of Business Conduct - Compliance management - Selection, assessment, and further development of suppliers	10; 20-23; 46-48; 51-52; 54-56; 87-88
GRI 407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	- Environmental and social standards - Code of Conduct for Business Partners - Cooperation with works councils and trade unions	20-23; 54-56
Child labor			
GRI 408/103	Management approach disclosures	- Code of Business Conduct - Compliance management - Selection, assessment, and further development of suppliers	10-11; 13; 20-23; 46-48; 51-52; 54-56; 87-88
GRI 408-1	Operations and suppliers at significant risk for incidents of child labor	- Environmental and social standards - Code of Conduct for Business Partners	20-23; 50-54
Forced or compulsory labor			
GRI 409/103	Management approach disclosures	- Code of Business Conduct - Compliance management - Selection, assessment, and further development of suppliers	10-11; 13; 20-23; 46-48; 51-52; 54-56; 87-88
GRI 409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	- Environmental and social standards - Code of Conduct for Business Partners	20-23; 54-56
Human rights assessment			
GRI 412/103	Management approach disclosures	- Code of Business Conduct - Compliance management - Selection, assessment, and further development of suppliers	10-11; 13; 20-23; 46-48; 51-52; 54-56; 78
GRI 412-1	Operations that have been subject to human rights reviews or impact assessments	- Environmental and social standards - Code of Conduct for Business Partners	20-23; 54-56
GRI 412-2	Employee training on human rights policies or procedures		22-23
Supplier social assessment			
GRI 414/103	Management approach disclosures	- Selection, assessment, and further development of suppliers	10-11; 13; 31; 46-56
GRI 414-2	Negative social impacts in the supply chain and actions taken	- Risk analysis to ensure compliance with social and environmental standards - Social and environmental standards - Responsible supply chain management - Code of Conduct for Business Partners	54-56
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GRI 415-1	Political contributions		108

* The references indicate the pages on which the respective GRI content is mentioned within this report. References marked "AR" refer to our annual report 2021.

GRI indicators		Comment	Reference*
Customer health and safety			
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GRI 416-1	Assessment of the health and safety impacts of product and service categories	- Product safety - Substances of concern	38–41
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GRI 417/103	Management approach disclosures	- Information and documentation requirements	39; 43
GRI 417-1	Requirements for product and service information and labeling	- Responsible advertising	39; 43
Customer privacy			
GRI 418/103	Management approach disclosures	- Compliance management	10; 41–42
GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	- IT security, information security, and data protection	23
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GRI 419/103	Management approach disclosures	- Code of Business Conduct	10; 20–23; 78
GRI 419-1	Noncompliance with laws and regulations in the social and economic area	- Compliance management - Code of Conduct for Business Partners	23

* The references indicate the pages on which the respective GRI content is mentioned within this report. References marked "AR" refer to our annual report 2021.

Independent Auditor's Reasonable Assurance Report¹

To the Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart

We have performed a reasonable assurance engagement on selected performance indicators and statements within the sustainability report of the Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart, (hereafter the "Company") and its subsidiaries (hereafter the "Group") for the reporting period from January 1, 2021, to December 31, 2021.

The assured selected performance indicators and statements in the sustainability report are marked with the symbol "⊙" (hereafter "selected disclosures").

Responsibilities of the executive directors

The executive directors of the Company are responsible for the preparation of the sustainability report in accordance with the "GRI Sustainability Reporting Standards," option "core" (hereafter "reporting criteria").

These responsibilities of the Company's executive directors include the selection and application of appropriate nonfinancial reporting methods and making assumptions and estimates about individual nonfinancial disclosures of the Bosch Group that are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal control as the executive directors consider necessary to enable the preparation of a sustainability report that is free from material misstatement, whether due to fraud (manipulation of the selected disclosures) or error.

Independence and quality assurance of the auditor's firm

We have complied with the German professional requirements on independence as well as other professional conduct requirements.

Our audit firm applies the national legal requirements and professional pronouncements – in particular the BS WP/vBP ("Berufssatzung für Wirtschaftsprüfer/vereidigte Buchprüfer": Professional Charter for German Public Accountants/German Sworn Auditors) in the exercise of their profession and the IDW Standard on Quality Management issued by the Institute of Public Auditors in Germany (IDW): Requirements for Quality Management in the Audit Firm (IDW QS 1) and accordingly maintains a comprehensive quality management system that includes documented policies and procedures with regard to compliance with professional ethical requirements, professional standards, and relevant statutory and other legal requirements.

Responsibilities of the auditor

Our responsibility is to express a reasonable assurance opinion on the selected disclosures based on our assurance engagement.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by IAASB. This standard requires that we plan and perform the assurance engagement to obtain reasonable assurance about whether the selected performance indicators and statements in the sustainability report of the Company have been prepared, in all material respects, in accordance with the reporting criteria.

¹ The assurance engagement performed by Ernst & Young (EY) relates exclusively to the German version of the sustainability report of the Company. An independent assurance report was issued in German language, which is authoritative. The following text is a translation of the independent assurance report.

The assurance engagement on the selected disclosures includes performing procedures and obtaining evidence for the quantitative and qualitative disclosures in the sustainability report that is sufficient and appropriate to provide a basis for our opinion.

We exercise professional judgment and maintain professional skepticism throughout the assurance engagement. Our procedures also include the following:

- ▶ Obtain an understanding of the CO₂ neutrality program, as well as concepts regarding work safety of the Bosch Group;
- ▶ Identify and assess the risks of material misstatement, whether due to fraud or error, in the sustainability report, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- ▶ Obtain an understanding of internal control relevant to the assurance of the selected performance indicators and statements in the sustainability report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems;
- ▶ Obtain sufficient and appropriate assurance evidence – for example, in the context of site visits for the sustainability information of the Group’s business activities – in order to form our opinion;

- ▶ Evaluate the appropriateness of methods used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures; and

- ▶ Evaluate the overall presentation of the selected performance indicators and statements in the sustainability report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion

In our opinion, on the basis of the knowledge obtained in the assurance engagement, the selected performance indicators of the Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart, for the period from January 1, 2021, to December 31, 2021, are prepared, in all material respects, in accordance with the reporting criteria.

Restriction of use

We draw attention to the fact that the assurance engagement was conducted for the Company’s purposes and that the report is intended solely to inform the Company about the result of the assurance engagement. As a result, it may not be suitable for another purpose than the aforementioned. Accordingly, the report is not intended to be used by third parties for making (financial) decisions based on it. Our responsibility is to the Company alone. We do not accept any responsibility vis-à-vis third parties. Our assurance opinion is not modified in this respect.

General Engagement Terms and Liability

The "General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften (German Public Auditors and Public Audit Firms)" dated January 1, 2017, are applicable to this engagement and also govern our relations with third parties in the context of this engagement (www.de.ey.com/general-engagement-terms). In addition, please refer to the liability provisions contained in no. 9 and to the exclusion of liability towards third parties. We accept no responsibility, liability, or other obligations vis-à-vis third parties unless we have concluded a written agreement to the contrary with the respective third party or liability cannot effectively be precluded.

We make express reference to the fact that we will not update the report to reflect events or circumstances arising after it was issued unless required to do so by law. It is the sole responsibility of anyone taking note of the summarized result of our work contained in this report to decide whether and in what way this information is useful or suitable for their purposes and to supplement, verify, or update it by means of their own review procedures.

Munich, March 10, 2022

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Nicole Richter	Yvonne Meyer
Wirtschaftsprüferin	Wirtschaftsprüferin
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About this report

The Bosch Group's sustainability report has been published annually since 2011. The present report describes the progress made in terms of sustainable business practices in the 2021 financial year (from January 1, 2021, to December 31, 2021).

As in previous years, the report observes the internationally recognized guidelines of the Global Reporting Initiative (GRI). To the best of our knowledge, the report has been prepared in accordance with the GRI Standards: Core option. Selected key indicators and statements on climate action and occupational health and safety were audited by Ernst & Young Wirtschaftsprüfungsgesellschaft to obtain reasonable assurance. Audited content in this sustainability report is marked "☺."

Unless otherwise stated, all information in this report refers to the full consolidated group. Besides Robert Bosch GmbH, it comprises a further 440 fully consolidated entities. Details of the scope of consolidation and the developments in the financial year relating to it can be found in the annual report (see [annual report 2021](#), page 101 et seq.). Key environmental and occupational health and safety indicators cover 430 (previous year: 422) reportable locations.

The information was requested electronically, and the data was mainly compiled using software specific to each division. In principle, we aim to present three-year

trends to enable better comparability. In individual cases, facts relating to previous periods were restated as a result of improved data collection methodology. Such changes are marked accordingly in the text. Discrepancies in the totals are possible due to rounding differences.

All forward-looking statements in this report are based on the assumptions valid as of the copy deadline. Due to unknown risks, uncertainties, and other factors, the actual results, developments, or performance of the company may differ from our forecasts, assessments, and announcements.

German and English PDF versions of the sustainability report 2021 are available online. Further information can be found at sustainability.bosch.com and in the [annual report 2021](#). The next sustainability report is scheduled to be published in spring 2023.

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