

Sustainable Value Enhancement

Our goal is to run our business responsibly along the entire value chain. Everyone should benefit from this – our customers, our employees, the environment and society. Our future program TOGETHER – Strategy 2025 describes this change process in the Company. The starting point is our vision of being one of the world's leading providers of sustainable mobility.

The main financial key performance indicators for the Volkswagen Group are described in the "Results of Operations, Financial Position and Net Assets" chapter. Nonfinancial key performance indicators also attest to the efficiency of our Company's value drivers. These include the processes in the areas of research and development, procurement, production, marketing and sales, information technology and quality assurance. In all of these processes, we are aware of our responsibility towards our customers, our employees, the environment and society. In this chapter we provide examples of how we are increasing the value of our Company in a sustainable way.

SUSTAINABILITY

The Volkswagen Group is committed to sustainable, transparent and responsible corporate governance. The biggest challenge we face in implementing this at all levels and at every step in the value chain is the complexity of our Company, with its twelve brands, around 665 thousand employees and 123 production locations. In order to tackle this complexity in the best way possible, our focus is on coordinating our sustainability activities across the entire Group. We have a forward-looking system of risk management in place, a clear framework for dealing with future environmental issues, and attach great weight to social commitment and employee responsibility. Moreover, we are oriented towards the recommendations of the German Corporate Governance Code.

For us, sustainability means simultaneously striving for economic, social and environmental goals in a way that gives them equal priority. The future program TOGETHER – Strategy 2025 places sustainable growth at the heart of our Group strategy: we want to be an excellent employer and a role model for the environment, safety and integrity, to excite

customers and to ensure that we achieve competitive profitability at the same time. Our corporate citizenship activities also support us in this endeavor. We understand corporate citizenship as voluntary services that our company performs for society above and beyond our core business. These services address social challenges, but are also designed to promote business objectives such as improving our reputation, credibility and/or attractiveness as an employer. Specifically, they may take the form of financial donations or donations in kind, social sponsoring, operational projects founded on the Company's initiative but also different forms of corporate volunteering.

By 2025, we aim to make the Volkswagen Group the world's number one in electric mobility. We have therefore set new priorities with Roadmap E. We also need to ensure that we detect risks and opportunities in the areas of environment, society and governance at an early stage at every step along the value chain.

Management and Coordination

The Volkswagen Group has created a clear management structure to coordinate the Group's activities as regards sustainability – including corporate citizenship. Its highest committee is the Group Board of Management. It is regularly briefed by the Group Sustainability steering group on all issues related to the topics of sustainability and corporate responsibility. The members of the Group Sustainability steering group include executives from central Board of Management business areas and representatives of the Group Works Council and the brands. The steering group's tasks include identifying the key action areas, making decisions on the strategic sustainability goals and programs, using indicators to monitor the extent to which these goals are being met and approving the sustainability report.

THE VOLKSWAGEN GROUP'S KEY ACTION AREAS



Sustainability activities are planned and managed by the functional area Group Sustainability. Its duties include coordinating all sustainability activities within the Group, the brands and the regions. These also include stakeholder management at Group level, for example contact with sustainability-driven analysts and investors. In addition, project teams work across business areas on topics such as decarbonization, human rights and sustainability in supplier relationships. This coordination and working structure is also largely established across the brands and is constantly expanding. Activities in fiscal year 2018 focused on strategically realigning the functional area Group Sustainability and anchoring sustainability in our core business, as well as on developing a sustainability program that places emphasis on climate protection and sustainable supply chains, among other things.

Sustainability Council

To support its strategic sustainability goal, the Volkswagen Group appointed a Sustainability Council in September 2016. This is made up of internationally renowned experts from the academic world, politics and society. The Council establishes its own working methods and areas of focus independently, has extensive rights for the purposes of exchanging information, consultation and initiating action, and consults

regularly with the Board of Management, top management and the employee representatives.

In 2018, the projects initiated by the Council the year before were commenced: a dialog platform for innovations and cultural change in the area of sustainable mobility, an international program for mitigating the effects of climate change through forecast-based civil protection financing and a scientific study for designing future traffic policy in line with international climate targets. In addition, the Council decided on a further project for the strategic focus of sustainability at Volkswagen and the establishment of a visiting professorship for open labs and cultural change at the Einstein Center Digital Future in Berlin. Furthermore, the Sustainability Council formulated recommendations for how technological, political and cultural change should be organized to win back trust and lay the foundations for future success.

Materiality analysis

Two developments in 2018 continued to influence the detailed analysis as to which issues are material to the Volkswagen Group: the alignment of the Group as part of the future program TOGETHER – Strategy 2025 and dealing with the consequences of the diesel issue.

As the starting point for our analysis, we are oriented towards the Sustainable Development Goals (SDGs) formulated by the United Nations, which describe the social challenges facing companies. Based on the results, we defined 18 key action areas for achieving our goal of becoming one of the world's leading providers of sustainable mobility. In order to identify key topics, we took into account external studies, sector and media analyses, ratings, stakeholder surveys, internal and external guidelines and codes, the Group-wide future program TOGETHER – Strategy 2025 and the individual departmental strategies.

As the details of the Group strategy have not yet been finalized, we are still in the process of specifying the content of the key action areas and defining corresponding values, targets and indicators.

Principles and guidelines

Voluntary commitments and principles that apply throughout the Group form the basis of our sustainable focus. In addition, our sustainability model provides the framework for sustainable and responsible action. The Volkswagen Group's Code of Conduct applies to the entire Group and helps managers and employees alike to deal with legal and ethical challenges in their day-to-day work.

THE VOLKSWAGEN GROUP'S STAKEHOLDERS



We expressly support the United Nations Global Compact, an agreement between the UN and the business world aimed at enhancing the social and ecological aspects of globalization. As long ago as 2002, the Volkswagen Group made a commitment to promoting human rights, labor standards, environmental protection and combating corruption. We are seeking reincorporation of our membership in the United Nations Global Compact, which had been suspended following the diesel issue; talks on this were resumed in 2018. In addition, our objective is to ensure that our actions are in line with the declarations of the International Labor Organization (ILO), the principles and conventions of the Organisation for Economic Co-operation and Development (OECD) and the international covenants of the United Nations on basic rights and freedom.

We have established our own internal guidelines in the form of the Volkswagen Social Charter, the Charter on Labor Relations, the Charter on Vocational Education and Training, and the Charter on Temporary Work. The environmental policy and the environmental principles for products and production, which apply throughout the Group, are mandatory for environmental protection.

Strategic stakeholder management

Our stakeholders are individuals, groups, or organizations who have a material influence on or are materially influenced

by the way in which the Group reaches its corporate decisions and the implications of those decisions. Our customers and our employees are our key stakeholders. Around this core, we have defined eight types of stakeholders. This classification is the product of a stakeholder analysis in which we regularly identify the Group's key stakeholder groups.

The role of stakeholder management is to enter into dialog with stakeholder groups in order to manage the many demands placed on us and integrate them into decision-making processes. To be able to systematically incorporate our stakeholders' suggestions and recommendations, we have set up councils such as the Sustainability Council and the Stakeholder Panel. The Panel is comprised of 300 national and international opinion leaders. In addition, we offer our stakeholders a broad range of opportunities for interaction and feedback channels including regular stakeholder discussion events, stakeholder surveys and international partnerships.

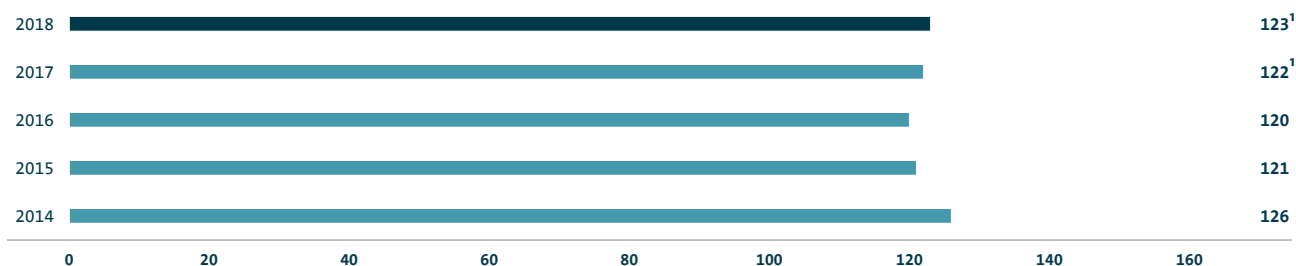
RESEARCH AND DEVELOPMENT

Forward-looking mobility solutions with brand-defining products and services would be unthinkable without innovations. This makes our research and development work essential for sustainably increasing the value of the Company.

Together with our Group brands, we have launched strategic initiatives for networking development activities across the Group based on our future program TOGETHER – Strategy 2025. At the heart of this is an efficient, cross-brand development alliance characterized by a close network of our experts, collaboration on an equal footing, an innovative working environment and the pooling of development activities. With this, we aim to make use of synergy effects across the Group and act as a role model for the environment, safety and integrity. The alliance is playing a major part in the Volkswagen Group's transformation into a leading provider of sustainable mobility and helping to make the Group fit for the future.

Based on this strategic focus, we concentrated in the reporting period on continuing to develop forward-looking mobility solutions, establishing technological expertise to strengthen our competitiveness, expanding our range of products and services and improving the functionality, quality, safety and environmental compatibility of our products and services, for example through cooperation across brands.

CO₂ EMISSIONS OF THE VOLKSWAGEN GROUP'S EUROPEAN (EU28) NEW PASSENGER CAR FLEET
in grams per kilometer



1 Subject to official publication by the European Commission in the annual CO₂ fleet monitoring report.

Fuel and drivetrain strategy

The Volkswagen Group's new passenger car fleet in the EU (excluding Lamborghini and Bentley) emitted an average of 123 g CO₂/km¹ in the reporting period and was thus below the 2018 European limit of 130 g CO₂/km. The small year-on-year increase is mainly attributable to the new measurement techniques to be applied. As small volume manufacturers, the Lamborghini and Bentley brands each have an independent fleet for the purposes of the European CO₂ legislation; Bentley complied with its individual target, Lamborghini was slightly above its target.

As part of a Group-wide initiative – and with a view to the legal regulations on emissions – we are currently developing a forward-looking vehicle and drivetrain portfolio: to achieve our goal of sustainable mobility, we have set ourselves the objective of increasing drive system efficiency with each new model generation – irrespective of whether the means of propulsion is a combustion engine, a hybrid, a plug-in hybrid, a purely electric drive, or a fuel cell drive system. The Volkswagen Group closely coordinates technology and product planning with its brands so as to avoid breaches of fleet fuel consumption limits, since these would entail severe financial penalties.

We anticipate that already by the year 2025, one in four new Volkswagen Group vehicles worldwide will have a purely electric drive; depending on the market development, this could be up to three million electric vehicles a year. The Volkswagen Group has launched a comprehensive electrification offensive in the form of Roadmap E. By 2025, we plan to offer our customers around the world more than 80 new electric models, including some 50 purely battery-electric

vehicles and 30 plug-in hybrids. By 2030, the Volkswagen Group aims to electrify its entire model portfolio – from high-volume models to premium vehicles. This will mean offering at least one electric version – battery-electric, hybrid or mild hybrid vehicles – of each of our approximately 300 passenger car models across all Group brands. We are therefore developing two new electric platforms for vehicles with a range of up to 600 km.

The Volkswagen Group is committed to achieving the Paris climate targets and is pursuing the goal of making its vehicle fleet completely carbon neutral by 2050.

To enable sustainable, affordable mobility in the future for as many people around the world as possible, we will offer the full range of drivetrains – from conventional combustion engines to all-electric drive. From today's perspective, conventional combustion engines look set to make up the lion's share of drive technology in the coming years. In the interest of using resources responsibly, it is therefore essential to further enhance this engine segment and systematically consolidate it for specific markets. Powertrain measures such as far more sophisticated exhaust gas purification or mild hybridization of the vehicles, but also vehicle measures such as optimized aerodynamics or reduced rolling resistance will be necessary to fulfill future emissions standards.

In addition to electric drives and more efficient combustion engines, renewable, reduced-CO₂ fuels (in gas or liquid form) are playing an increasingly important role. We support the expansion of the natural gas (CNG) infrastructure and are conducting intensive research into options for producing fuels from renewable electricity, enabling carbon-neutral operation of combustion engines.

Last but not least, we are working under Audi's leadership to make fuel cell technology ready for market.

It is more important to us than ever to rigorously pursue our modular approach. We are reducing the number of individual modules so that we can make a large product portfolio economically viable. Over the long term, we will reduce the number of versions of conventional combustion engines in the Group by more than a third. This will create capacity for the development and production of new hybrid and electric drives.

Life cycle engineering and recycling

On their own, technological innovations for reducing fuel consumption are not enough to minimize the effect of vehicles on the environment. That is why we examine the entire product life cycle of our vehicles – from the extraction of raw materials to the production of components and the provision of fuel and energy during vehicle use to their final disposal. We identify the stages of the life cycle at which improvements will have the greatest effect and develop appropriate solutions. We call this life cycle engineering. Recycling, for example, is an important means of reducing environmental impact and conserving resources. Already when developing new vehicles, we therefore pay attention to the recyclability of the required materials, use high-quality recycled material and avoid pollutants. At the end of their lives, our vehicles are 85% recyclable and 95% recoverable.

Leveraging synergies increases efficiency

When developing vehicles, we cooperate closely with our brands to leverage synergies. The joint strategy of our development alliance aims, for example, to make the Group more competitive and viable in the long term by deploying resources more effectively and efficiently in the research and development of new mobility-related technologies, products and services. In our Group-wide development alliance, the brands not only work with each other, but also for each other on key technologies, forming cross-brand networks of expertise to address the topics of the future. For example, we consolidated the Group's activities and responsibility for the development, procurement and quality assurance of all battery cells centrally in a Center of Excellence under the umbrella of the Volkswagen Passenger Cars brand. There, a pilot line for cell production will be put into operation in 2019 to build up expertise for the Group in cell design, as well as throughout the entire value chain.

Our modules are also managed centrally to reduce costs, capital expenditure and complexity. With the aid of a Group initiative, we are seeking to reduce expenditure in the

toolkits, while at the same time implementing a wide-reaching electrification offensive and focusing on autonomous systems. We will achieve this through a considerable reduction in complexity using streamlined platforms that synergize but do not overlap. The individual Group brands are using the modular toolkits, thus creating synergies between the various models of a model line and across model lines. The streamlined toolkits are creating the financial leeway for development of the future trends of digitalization and autonomous driving. As part of the TOGETHER – Strategy 2025 program, the high-volume passenger car brands have introduced model line organization through a Group initiative, consequently strengthening the brands' responsibility for the success of vehicle projects, improving project work across different cross-departmental areas, accelerating decision-making and intensifying the focus on results of projects.

We are also creating synergy effects by continuing to widely share best practices, for instance in virtual development and testing. Finally, the centralized development and consolidation of IT systems is also helping to strengthen cooperation across brands, make development activities more comparable and reduce the Group's IT costs.

Sustainable mobility, connectivity and automated driving

Mobility is a prerequisite for economic growth. But while the need to always be mobile is rising, natural resources are dwindling. This calls for holistic mobility concepts to minimize the environmental impact. Such solutions need to be efficient, sustainable, customer-oriented and accessible anytime and anywhere.

We are researching and developing such pioneering concepts and solutions in our Group-wide alliance. In shaping the future of mobility, we are looking not only at the automobile but at all modes of transport and transport infrastructures, at people's mobility habits and at other relevant factors. Innovations such as digital connectivity and automated driving allow for completely new problem-solving approaches. We strive to utilize these in order to play our part in a comprehensive mobility system in the future and to help shape our industry's transformation.

Another initiative of our future program TOGETHER – Strategy 2025 focuses on establishing a cross-brand mobility solutions business. Our mobility business MOIA is to become one of the leading providers of innovative transport services and will develop profitable and globally scalable business models. Strategic investments and partnerships are also being sought. Our strategic goal is to make Volkswagen one of the world's leading providers of efficient and convenient

smart mobility services by 2025, with a portfolio encompassing all brands and both “mobility as a service” and “vehicle on demand” services.

On the road to autonomous driving, the Volkswagen Group further improved its assistance systems and automated driving functions in 2018 and fitted them in vehicles. The strategic objective is to market highly automated driving functions for private vehicles, shared mobility systems and commercial mobility providers as a core competency of the Group. The Volkswagen Group has introduced its vision of an autonomous mobility system in the form of the Sedric family, comprising fully autonomous vehicles for short- and long-distance mobility, as well as sports cars, self-driving delivery vehicles and heavy trucks. In both, cities and rural areas, these vehicles will enable new forms of mobility – particularly for user groups that have so far been excluded from access to mobility.

Autonomous driving in complex urban environments places especially heavy demands on technology. We are dedicated to meeting these challenges. Our Autonomous Intelligent Driving GmbH is working on developing a Group-wide system for self-driving vehicles.

Given the growing number of digital and software-based vehicle-related components, customer satisfaction with these elements is becoming increasingly important. The goal of a Group initiative is therefore to make Volkswagen one of the best companies worldwide in terms of user experience. Close collaboration among our Group brands in this area provides the basis for this.

Pooling strengths with strategic alliances

The future program TOGETHER – Strategy 2025 plans to transform our core business and to establish a new mobility solutions business area at the same time. It is decisive to the success of this plan that we place our great innovative strength on even broader foundations.

Growth in the mobility sector is currently a global phenomenon, above all in the economy segment. As part of a Group initiative, Volkswagen is therefore increasingly entering into local partnerships to develop and offer economy products in line with the market. This is helping us to identify regional customer needs more precisely, to adjust our product range accordingly and to establish competitive cost structures. We are therefore concentrating to a greater extent on partnerships, acquisitions and venture capital investments and managing investment selection centrally so as to

generate maximum value for the Group and its brands. In light of this aspect, we have formed a large-scale alliance with the Ford Motor Company. The first step involves a collaboration regarding the development of vans and mid-sized pickups starting in 2022. This alliance allows us, in addition to making optimal use of manufacturing capacity, to share the development costs and improve the performance and competitiveness of the vehicles. This generates cost savings, while further strengthening our innovative power. Beyond this specific agreement, we are considering collaboration for additional mobility and vehicle concepts.

Thanks to our strategic partnership with Microsoft, we are accelerating our transformation into a mobility service provider with a fully connected vehicle fleet and our digital ecosystem “Volkswagen We”. Working together, we aim to press ahead with software development for the automobile of tomorrow and new services for our customers. This enables the comprehensive strengthening and expansion of our IT expertise and solutions.

Developing battery technology as a core competency has also been defined in a strategic initiative of the Volkswagen Group. The battery accounts for 20 to 30% of the cost of materials in electric vehicles; in future, it will be one of the most important components for differentiating between products. We have already pooled our in-house expertise in battery cells in a Center of Excellence and also plan to accelerate the building up of expertise and technological change through intelligent partnerships. We anticipate that our own electric fleet with lithium-ion batteries will require a battery capacity of more than 150 GWh a year in the period to 2025. To cover this enormous demand, we have defined strategic battery cell suppliers for our most important markets and the first MEB models, and we aim to initiate further long-term strategic partnerships in China, Europe and the USA. Looking ahead, we are already preparing for the next generation: together with partners, we aim to develop solid-state batteries to market readiness.

As part of the joint involvement of our Group brands Volkswagen Passenger Cars, Audi and Porsche in the pan-European High-Power Charging (HPC) joint venture IONITY, a comprehensive charging infrastructure is being built to safeguard long-distance mobility: by 2020, we aim to jointly build and operate fast-charging stations at 400 locations along major transport arteries in Europe.

As part of forward-looking mobility concepts, the Volkswagen Group is also working on robot-based service solution

for a variety of tasks. Rapid charging of an electric vehicle for example – be it in the user's garage at home, in underground car parks or in car parks – is something that could be done by a service robot in the future: when the driver gets out of the vehicle in front of the car park, their self-driving electric car autonomously looks for a free parking space and is charged there by "CarLa" – a charging robot that the Volkswagen Group and automation specialist KUKA presented at the Geneva International Motor Show in 2018.

In view of the growing importance of e-mobility, lightweight automotive engineering is considered a key technology for future competitiveness because a lighter vehicle weight increases the range of electric vehicles. Our Material Research team plays a major role in the Open Hybrid LabFactory, a public-private partnership in which various industry and research partners work together to develop lightweight construction solutions for mass production.

We are actively involved in public projects to help shape the framework conditions for the approval and introduction of our own self-driving system. The experience we are gathering here will benefit the Group brands and thus also our customers.

Key R&D figures

In fiscal year 2018, we filed 7,639 (6,566) patent applications worldwide for employee inventions, around half of them in Germany. The fact that an ever increasing share of these patents is for important cutting-edge fields underscores our Company's innovative power. These fields include driver assistance systems and automation, connectivity, alternative drive systems and lightweight construction.

The Automotive Division's total research and development costs in the reporting period were 3.8% higher than in the previous year; their percentage of the Automotive Division's sales revenue – the R&D ratio – came to 6.8 (6.7)%. Along with new models, above all the main focus was on the electrification of our vehicle portfolio, a more efficient range of engines, digitalization and new technologies. The capitalization ratio was 38.4 (40.0)%. Research and development expenditure recognized in profit or loss in accordance with IFRSs increased to €12.1 (11.6) billion.

As of December 31, 2018, our Research and Development departments – including the equity-accounted Chinese joint ventures – employed 51,948 people (+5.3%) Group-wide or 7.8% of the total headcount.

RESEARCH AND DEVELOPMENT COSTS IN THE AUTOMOTIVE DIVISION

€ million	2018	2017
Total research and development costs	13,640	13,135
of which capitalized development costs	5,234	5,260
Capitalization ratio in %	38.4	40.0
Amortization of capitalized development costs	3,710	3,734
Research and development costs recognized in profit or loss	12,116	11,609
Sales revenue	201,067	196,949
Total research and development costs	13,640	13,135
R&D ratio	6.8	6.7

PROCUREMENT

In fiscal year 2018, the main task for Procurement was once again to safeguard the supplies and to help create competitive, innovative products and optimize cost structures. In addition, we continued to digitalize procurement processes.

Procurement strategy

A global network of strong business partners and suppliers is paramount for achieving the goals of the Group strategy known as TOGETHER – Strategy 2025. We are implementing our Group-wide vision TOGETHER – Best in Customer Value and Cost with our procurement strategy 2025. This involves using our strengths to deliver products with a high customer value and optimum cost structures that meet the needs of the market. We integrate knowledge from our global supplier networks, secure expertise for the global procurement markets of the future and ensure well-timed industrialization and market implementation in line with cost requirements. Six goals were agreed upon with the brands and regions:

- › Access to supplier innovations
- › Active cost structures
- › Forward-looking structures
- › People, expertise and attractiveness
- › Supply chain excellence
- › Group-wide synergies

We intend to achieve these goals with initiatives that accomplished noticeable results in 2018.

By simplifying technical component concepts and bringing these into line with global standards, we generated significant savings. Based on these results, we are now rolling out the approaches to other regions and vehicle projects. Over half of our purchasing projects have already benefited from an extended cost analysis.

We have secured important innovations for the Company with our innovation contracts. In the case of new technologies, we selected suitable partners early on to allow innovations to be implemented in the market.

We are tackling the challenges of the transformation in our procurement markets by setting up a Connectivity, eMobility & Driver Assistance Systems division. The redesign of our procurement process for software and data will pave the way for partnerships that are secure for the future.

Implementation of the Group Procurement Suite is a means of revamping our procurement systems, automating procurement operations and facilitating the support of strategic procurement activities through analyses and artificial intelligence.

Volkswagen FAST – Supplier network as the basis for success

FAST is the central initiative of Group procurement, introduced in 2015 with the aim of making the Volkswagen Group and its supply network future-proof. The goal of FAST is to successfully implement the key topics of innovation and globalization by involving suppliers at an earlier stage and more intensively. The FAST initiative enhances the quality and speed of collaboration with our key partners, and thus enables us to coordinate global strategies and points of technological focus even more closely. The common goal is to make impressive technologies available to our customers more quickly and to implement worldwide vehicle projects more effectively and efficiently.

After incorporating additional partners into the FAST program in 2017, we worked with these partners in the reporting period to exploit the benefits of the strategic integration.

Digitalization of supply

We are working systematically to implement a completely digitalized supply chain. This will help us to ensure supply, leverage synergies throughout the Group and become a leader in terms of cost and innovation. We are therefore creating a shared database and using innovative technologies to enable efficient, networked collaboration in real time – both within the Group and with our partners. The cornerstone for the future of Procurement was laid in 2018 in the form of Group Procurement's digitalization strategy. This strategy aims not only to eliminate the weaknesses of Procurement's IT system environment but also to increase the organization's effectiveness, efficiency and future viability.

Structure of key procurement markets

Our procurement is organized at global level, with a presence in the key markets around the world. This ensures that production materials, investments in property, plant and equipment, and services can be procured worldwide to the quality required on the best possible terms. Networking of the brands' procurement organizations enables us to leverage synergies across the Group in the various procurement markets.

In addition to the brands' procurement units, the Volkswagen Group operates eight regional offices. In growth markets, we identify and train local suppliers to generate cost advantages for all the Group's production sites. In familiar and established markets, the regional offices support access to the latest technologies and innovations.

Supply situation for purchase parts and upstream materials

Systematic safeguarding of the supply of purchase parts is one of Procurement's goals. As a result of the new WLTP test procedure and the related changes in the production programs, we required a high degree of flexibility from our suppliers. Adverse effects on production in the Group caused by unforeseeable events such as natural disasters were minimized to the best of our ability.

Management of purchased parts and suppliers

The importance of managing purchased parts and suppliers is steadily growing due to the continued globalization of supply chains. We support and supervise the processes from development to series production of the purchased parts, making a substantial contribution to ensuring production start-ups for vehicles and powertrains all around the world. Our activities in purchased parts management focus on safeguarding component quality and the industrialization process at the individual supplier locations. At the same time, increased complexity in the automotive industry requires regular monitoring and safeguarding of supplies for series production. In order to identify any disruptions at an early stage and take necessary countermeasures, we simulate series production at suppliers as part of the pre-production process. Purchased Parts Management works closely with Quality Assurance at the production sites and conducts multi-stage performance testing.

Sustainability in supplier relationships

Successful relationships with our business partners are based upon observance of human rights, compliance with occupational health and safety standards, active environmental protection and combating corruption. These sustainability standards are defined in the contractually binding Volkswagen Group requirements for sustainability in relations with business partners (Code of Conduct for Business Partners).

Especially in view of the more stringent sustainability requirements being imposed worldwide, training and professional development for our suppliers is a key aspect of our sustainability in supplier relationships concept. By the end of the reporting period, more than 31,000 supplier locations had completed our online training program since 2012. In the Asia-Pacific, South America and European regions, we trained over 900 employees from more than 550 suppliers at face-to-face events addressing topics such as sustainability, and informed them of region-specific challenges. In addition, we raised awareness of sustainability risks in Procurement with face-to-face events attended by over 2,000 Procurement employees.

Our supplier checks for verifying compliance with sustainability requirements retained their importance in 2018. For this reason, we once again considerably increased the number of checks performed year-on-year and conducted local audits at 947 supplier locations. In 551 cases, an action plan was agreed upon that led to an improvement in suppliers' sustainability performance. Furthermore, checks of more than 28,000 supplier locations were carried out by means of questionnaires relating to sustainability since 2012, allowing improvements in sustainability performance to be achieved in more than 2,100 cases during the reporting period.

In 2018, we also decided to introduce a comprehensive sustainability rating for the awarding of contracts in which the criteria environment, society and compliance will be systematically reviewed prior to the conclusion of all contracts starting in 2019. Only suppliers with a positive sustainability rating will have the opportunity to enter into a business relationship with us.

COMPONENTS BUSINESS

A realignment of the Group-wide components business was decided upon as part of the future program TOGETHER – Strategy 2025. The aim is further improvement in competitiveness through cross-brand management of components activities and a value creation strategy coordinated throughout the Group. For traditional technologies and topics of the future, synergies will be leveraged to advance the progressive transition to e-mobility.

The expertise of the components business, which employs some 80,000 people worldwide, lies in the development and manufacture of vehicle components. In order to realign these competencies in a future-oriented way, it was decided as part of the Group strategy to combine components activities around the world into an independent entity, Volkswagen Group Components.

To this end, five new business areas were formed in 2018: Engine and Foundry, Transmissions and Electric Drive Systems, E-Mobility, Chassis and Seats. In each of the five business areas, the different departments such as Development, Procurement and Production will cooperate closely at an early stage to boost innovative power and competitiveness.

To achieve efficiency targets, manufacturing and administration processes will consistently be made leaner; shop floor management, which ensures uniform communication between management, foremen and employees, will be enhanced and savings will be generated by implementing optimization measures at the sites.

For its product portfolio, the components business relies on sustainable economic products. Products that are not

competitive will be progressively phased out in the medium to long term. E-mobility components will instead become an integral part of the portfolio.

Employees who take on new responsibilities in this respect will receive appropriate training.

PRODUCTION

Our global, cross-brand production network safeguards the processes from the supplier to the factory and assembly line, and from the factory to dealers and customers. Enduring efficiency is a prerequisite for our competitiveness. We meet challenges of the future with holistic optimizations, forward-looking innovations, flexible supply streams and structures, and an agile team. In fiscal year 2018, the global vehicle production volume surpassed the previous year's level, reaching 11.0 million units. Productivity increased by around 5.3% year-on-year, despite the continuing difficult conditions in many markets.

"Intelligently networked" production strategy

Production is supporting the future program TOGETHER – Strategy 2025 with their "intelligently networked" functional area strategy. By intelligently connecting people, brands and machines, we aim to pool the strengths and potential of our global production and logistics and take advantage of the resulting synergy effects. We are guided in this by four strategic goals:

- > Versatile production network
- > Efficient production
- > Intelligent production processes
- > Future-ready production

With division-specific initiatives we have created content clusters in which expert teams work on the strategic topics relevant for production in the Group. Examples include the competitive design of our global production network, the reduction and offsetting of environmental impact throughout the production process, and digitalization with its implications for production and working processes and for collaboration. The overarching aim is to increase productivity and profitability.

With the production strategy, we have laid the foundations for the successful and sustainable enhancement of our production. We use regular reviews to ensure that we constantly align our activities to the current challenges.

Global production network

With twelve brands and 123 production locations, aspects such as consistent standards for product concepts, plants, operational equipment and production processes are key to

forward-looking production. These standards enable us to achieve synergy effects, respond flexibly to market challenges, make optimal use of a flexible production network and realize multibrand locations. Currently, almost half of the 45 passenger car locations are already multibrand locations. The Bratislava site continues to serve as a prime example, producing vehicles for the Volkswagen Passenger Cars, Audi, Porsche, SEAT and ŠKODA brands. The newest multibrand location is Wolfsburg, where production of the SEAT Taracco began in the autumn of 2018.

The Volkswagen Group has set itself the goal of becoming one of the world's leading providers of battery-electric vehicles by 2025. The basis for this is the introduction of the Modular Electric Drive Toolkit MEB, which we will use to complement our range with additional battery-electric vehicles.

In order to design multibrand projects and for electric mobility to be cost-effective in conjunction with existing concepts, it is important to make production highly flexible and efficient. Making maximum use of potential synergy effects is also a decisive factor for the success of future vehicle projects. Using common parts and concepts as well as identical production processes enables reduced capital expenditure and provides the opportunity to better utilize existing capacities. The future will also see electric vehicle projects at multibrand locations such as Zwickau, Germany and Anting, China.

We are constantly enhancing our production concepts and aligning them with new technologies. The targeting process anchored in our strategy serves to realize ambitious targets in individual projects as part of a cross-divisional approach.

Production locations

The Volkswagen Group's production network is comprised of 123 locations in which passenger cars, commercial vehicles and motorcycles, as well as powertrains and components are manufactured.

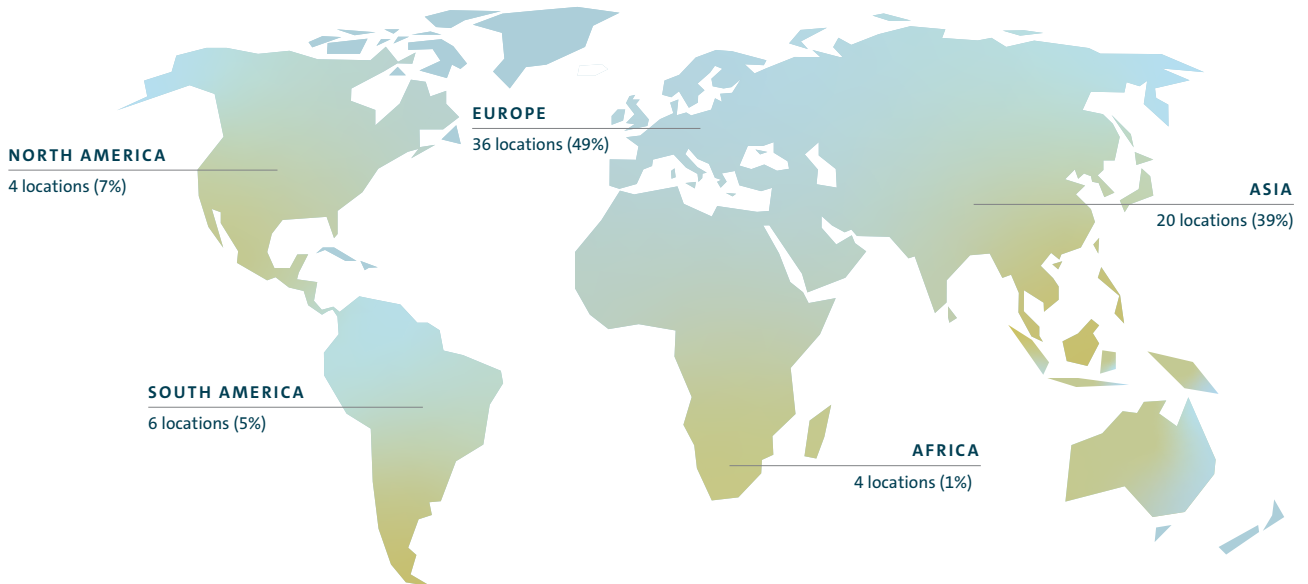
With 71 locations, Europe remains our most important production region for vehicles and components. There are 28 sites in Germany alone. The Asia-Pacific region has 34 locations. We have five locations in North America and nine in South America. The Group operates four locations in Africa.

2018 saw 52 production start-ups: 29 for new products and successor products and 23 for product upgrades and derivatives.

Capacity utilization of the locations in the Volkswagen Group's production network is further enhanced by supplying the locations with complete knock-down (CKD) kits for local assembly.

VEHICLE PRODUCTION LOCATIONS OF THE VOLKSWAGEN GROUP

Share of total production 2018 in percent



The Group's production system

Our aim is to continuously and sustainably improve our production workflows at all the brands' and regions' locations. A key component for achieving excellence in processes in production and production-related environments is the Group production system; we are further consolidating this and increasing the extent to which it is used.

Leadership and individual responsibility are the foremost factors, embedded in a culture of respect and collaboration.

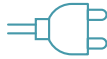
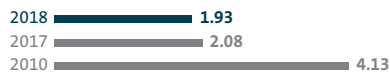
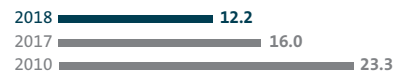
A factory must work at optimal capacity if it is to achieve the goal of continuing to manufacture high-quality products that give customers maximum benefits at competitive prices. This is made possible by the standardization of production processes and operating equipment early on in the line, based on the principle of concept consistency. This ensures that common design principles, joining techniques and joining sequences, but also installation and connection concepts are applied in the brands' development and production areas. The principle of concept consistency is used to establish a foundation for creating efficient logistics and manufacturing processes.

New technologies and product innovations

3D printing is one of the key technologies for Industry 4.0 and digitalizing the automotive value chain. The process opens up wholly new opportunities in the areas of development, design and production. Due to the digital nature of the

technology, which requires no tools whatsoever, components can be flexibly implemented directly from digital drawings, and completely new designs and component geometries can be created. The technology of 3D printing has been successfully used for building prototypes for many years now and has advanced rapidly in recent years – also accompanied by new areas of application at Volkswagen. The specific characteristic of this technology, an additive manufacturing technique, is its influence along the entire automotive value chain. It is used for early design studies, for building prototypes, for manufacturing tools and operational equipment, for producing parts in small batches and for the manufacturing of replacement parts in after sales. The materials available for 3D printing range from plastics to fiber composite materials and metallic materials.

However, there is still a long way to go before large-scale automotive production applications are possible. Here, Volkswagen leverages the diversity of the Group, achieved through close collaboration between its brands, and cooperates with leading technology providers and research institutions. For example, the Volkswagen Passenger Cars brand has partnered with printer manufacturer HP and component producer GKN Powder Metallurgy to become the first automaker to use HP Metal Jet, the latest 3D printing technology.

KEY ENVIRONMENTAL INDICATORS FOR PRODUCTION IN THE VOLKSWAGEN GROUP¹**ENERGY CONSUMPTION**
in kilowatt hours per vehicle-19.1%²**CO₂ EMISSIONS**
in kilograms per vehicle-34.3%²**VOC EMISSIONS³**
in kilograms per vehicle-53.3%²**DISPOSABLE WASTE**
in kilograms per vehicle-47.6%²**FRESH WATER CONSUMPTION**
in cubic meters per vehicle-15.1%²¹ Production of passenger cars and light commercial vehicles. Prior-year figures adjusted.² Change 2018 as against 2010.³ Volatile organic compounds (VOCs).

Where the design and introduction of new production technologies is concerned, affected staff are involved in the redesign of workplaces and processes from the outset. This is an important prerequisite if new technologies and solutions are to find the necessary acceptance.

Environmentally efficient production

One element of the production strategy is the environmentally exemplary production initiative. This involves us working on four key issues in the period leading up to 2025:

- › Setting and achieving ambitious environmental targets for production
- › Developing a long-term vision for environmental targets in production and rolling it out across the Group
- › Strengthening employees' environmental awareness and integrating relevant environmental aspects into processes
- › Achieving top positions in renowned environmental rankings

In this context, the Volkswagen Group has set itself the goal of reducing the five key environmental indicators of energy and water consumption, waste for disposal, and CO₂ and VOC emissions in production by 45% for each vehicle produced by 2025 – starting from 2010 levels. This objective applies to all of the Group's production locations and is derived from our

environmental requirements for production processes, which are anchored in the Group's environmental principles. The charts above show the development of these indicators.

We are encouraging networking and communication between the brands worldwide in order to leverage synergies. Our environmental experts meet regularly in working groups; in addition, we train our employees on the topic of environmental protection.

To identify and implement site-specific cost-cutting measures, the Environmental Task Force analyzes manufacturing processes, factory supply systems and resource and energy flows at the Group's locations and evaluates the impact of the efficiency measures. Based on the experience from the analyses in several brands and regions, the team can systematically reinforce and spur on the transfer of measures.

We record and catalog environmental measures in an IT system and make these available for a Group-wide exchange of best practices. In the reporting period, around 1,500 implemented measures in the area of environment and energy were documented in this system. They serve to improve infrastructure and production processes for passenger cars and light commercial vehicles. These activities are beneficial from an environmental and economic perspective.

With a series of effective, innovative measures, we were once again able to reduce environmental indicator levels in the reporting period, while at the same time improving production processes.

Green logistics

Logistics contributes to the Volkswagen Group's focus on the environment by analyzing the emissions of the entire transport chain. The Green Logistics initiative promotes alternative means of transport and sustainable, energy-efficient transport systems.

Building on the dialog established between Group Logistics, Scania, forwarders, authorities and oil companies at the LNG Truck Day in September 2017, the concept of LNG-trucks (liquefied natural gas) will now be put into practice. The aim is to have LNG trucks drive on many routes in the future, which will require an appropriate fuel station network. Together with its service providers, Group Logistics is planning to deploy approximately 100 LNG trucks in northern Germany in the medium term. The first trucks hit the roads in January 2019.

Where transport activities are concerned, maritime transport represents another important starting point for reducing CO₂ emissions. In mid-2019, Volkswagen Group Logistics will put two LNG-powered charter ships into service. The low-emission LNG ships will transport vehicle models produced by the Volkswagen Group between Europe and North America.

To ensure that our employees can provide the best possible support along the path to achieving our environmental targets and can also help shape this path, in-house training courses on green logistics and lectures at universities are a fixed part of the vocational training program.

SALES AND MARKETING

As part of our future program, we have developed a sales and marketing strategy aimed at exciting customers on a whole new level under the slogan "customer delight". We regard ourselves as an innovative and sustainable mobility provider for all commercial and private customers worldwide – with a unique product portfolio encompassing twelve successful brands and innovative financial services.

In the 2018 fiscal year, we achieved a milestone in our TOGETHER sales strategy: together with their sales partners and importers, our passenger car brands agreed on a procedure for integrating innovative products and services into the sales network. The priority is safe handling of customer data and the way in which this is processed for digital products and services or in connection with the vehicle purchase. The legal requirements for handling customer data have been tightened in many countries. At the

same time, new Group vehicles that are permanently connected to the Internet are about to be launched. We are increasingly investing in distribution systems and processes with the goal of further digitalizing and improving the individual customer experience in all distribution channels.

Optimal coverage of markets, customer segments and customer budgets is at the heart of a strategic Group initiative. To this end, we are establishing automobile-specific customer segmentation to steer the positioning of our brands. At the same time, we are examining global markets for potential revenue sources. This methodology has already been established for Europe and China and was rolled out to further markets including the United States and Brazil in 2018. It will be continuously applied in the strategy and product process and regularly reviewed and adjusted as necessary whenever new market requirements arise.

Customer satisfaction and customer loyalty

The Volkswagen Group aims its sales activities at exciting its customers. This is our top priority, as excited customers remain loyal to our brands and recommend our products and services to others. In addition to satisfaction with our products and services, we value our customers' emotional connection to our brands. It is important for us to retain customers and win new ones. To measure our success in this area, we compile and analyze two strategic indicators for the major passenger car-producing brands:

- **Loyalty rate.** Proportion of customers of our passenger car brands who have bought another Group model. The loyalty of Volkswagen Passenger Cars, Audi, Porsche and ŠKODA customers has kept these brands in the upper loyalty rankings in the core European markets in comparison with competitors for a number of years even though the Volkswagen Passenger Cars and Audi brand have seen a slight decrease in the loyalty rate as a consequence of the diesel issue. Compared to other manufacturer groups, the Volkswagen Group continues to hold a top spot in the core European markets in terms of loyalty, with a considerable margin over the competition.
- **Conquest rate.** Newly acquired passenger car customers as a proportion of all potential new customers. Here, too, the Volkswagen Group has a top ranking in comparison with competitors, primarily thanks to the good scores achieved by the Volkswagen Passenger Cars brand.

In the core European markets, the downward trend in brand image and brand trust at the Volkswagen Passenger Cars brand as a consequence of the diesel issue did not continue in 2018. After the first signs of recovery had been seen in 2017, the figures continued to stabilize in the reporting period. Porsche remains in top position in the image ranking.

We also use a strategic indicator to measure the satisfaction of customers with our products and services in the truck business:

- › Customer satisfaction. In the markets relevant for the Volkswagen Group, we aim to be one of the industry leaders in terms of the satisfaction rate for our commercial vehicle brands. To evaluate these criteria, we use customer satisfaction studies, which again delivered exceedingly positive satisfaction figures in line with our targets in the reporting period.

In the financial services business, we use two strategic indicators:

- › Customer satisfaction. Satisfaction of our customers results from a customer-oriented product range and the service focus of our staff. In the annual assessment, these two aspects serve as suitable indicators for the critical evaluation as to whether we will achieve our customer satisfaction target of 90% in 2025. In 2018, we were within the expected range with a satisfaction rate of 82%. Our goal is to satisfy our customers completely. To do so, we are developing current measures at country level.
- › Customer loyalty. Trust in and loyalty to our services rely on customer satisfaction with our product range and service. New contract rates are regularly determined based on product sales to our customers – financing and leasing agreements for purchases of new Volkswagen Group vehicles. Currently at 20%, these are proof of customers' trust in our financial services. With ambitious targets of 50% for 2025, we underscore the focus on fulfilling the needs of our customers.

E-mobility and digitalization in Group Sales

As part of our Roadmap E, we aim to offer our customers around the world more than 80 new electric models, including around 50 pure battery-electric vehicles and 30 plug-in hybrids by 2025. This campaign will be complemented by vehicle-related, customer-focused offerings, such as customized charging infrastructure solutions and mobile online services. This is turning the Volkswagen Group from an automotive manufacturer into a mobility service provider, posing completely new challenges for sales.

We are making highly targeted use of the opportunities of digitalization in sales, which include an improved customer approach. Our actions are guided by a clearly defined strategy that requires extensive cooperation between the brands to achieve the greatest possible synergies. Our aim here is to create a completely new product experience for the customers of our brands – one which impresses with its seamless communications, from the initial interest in purchasing a vehicle, to servicing and ultimately to the sale of the used car.

In doing so, we are opening up new business models relating to every aspect of the connected vehicle – in particular with regard to mobility and other services. Vehicles are becoming an integral part of the customer's digital world of experience.

We also gear our internal processes and structures to the methods and new forms of working created by digital innovation. The result is project teams operating across different business areas, new forms of cooperation, a more intensive relationship with the international start-up scene, a consolidation of venture capital expertise – as a form of supporting innovative ideas and business models – as well as new lean systems and cloud-based IT solutions.

Fleet customer business

Business relationships with fleet customers are often long-term partnerships. In a volatile environment, this customer group guarantees more stable vehicle sales than the private customer segment.

The Volkswagen Group has an established base of business fleet customers in Germany and the rest of Europe in particular. Our extensive product range enables us to satisfy their individual mobility needs from a single source.

In the German passenger car market, which declined as a whole by 0.2% in 2018, the share of fleet customers in total registrations fell to 13.6 (14.1)%. The Volkswagen Group's share of this customer segment decreased to 44.0 (44.7)%. Outside Germany, the Group's share of registrations by fleet customers in Europe remained stable at 25.2 (25.2)%. The upward trend until August shows that fleet customers still have considerable confidence in the Group. The temporary limitation of the model range as a consequence of the change-over to the WLTP had a negative impact from September 2018 onwards.

After Sales and Service

In addition to individual service, the timely provision of genuine parts is essential to ensure passenger car customer satisfaction in After Sales. The genuine parts supplied by our passenger cars brands and the expertise of the service centers represent the highest level of quality and ensure the safety and value retention of our customers' vehicles. With our global after sales network including more than 130 of our own warehouses, we ensure that almost all our authorized service facilities around the world can be supplied within 24 hours. We regard ourselves as a complete provider of all products and services relevant to customers in the after sales business. Together with our partners, we ensure the worldwide mobility of our customers. The partner businesses offer the entire portfolio of services in all vehicle classes. We are continuously expanding our range of tailored services in

order to improve convenience for our customers and increase customer satisfaction.

In the Digital After Sales project, we are modernizing processes and IT systems in After Sales. By adopting an approach that focuses product and service development on the specific needs of both dealers and customers, we aim to reduce the time needed for administrative tasks at the dealers through automated, interrelated services and also stabilize existing IT systems and boost efficiency. Innovative digital after-sales services will additionally improve the customer experience.

Around the world, our commercial vehicles business also prides itself on products of the highest quality and on customer focus. Our range of trucks, buses and engines is complemented by services that guarantee fuel efficiency, reliability and good vehicle availability. The workshop service and service contracts offer customers a high degree of certainty, in addition to a high level of quality. We are reducing servicing times and costs with a view to the vehicles' total operating costs and helping to retain their value.

In the Power Engineering segment, we help our customers ensure the availability of machinery with MAN PrimeServ. The global network of more than 100 PrimeServ locations guarantees excellent customer focus and offers, among other things, replacement parts of genuine-parts quality, qualified technical service and long-term maintenance contracts.

GROUP QUALITY MANAGEMENT

The quality of our products and services plays a key role in maintaining customer satisfaction. Customers are particularly satisfied and loyal when their expectations of a product or service are met or even exceeded. Appeal, reliability and service determine quality as it is perceived by the customer throughout the entire product experience. Our objective is to positively surprise our customers and fill them with enthusiasm in all areas, and thus to win them over with our outstanding quality.

Strategy of Group Quality Management

We embody outstanding quality and ensure dependable mobility for our customers worldwide – this is the strategic goal that guides the work of Group Quality Management. Group Quality Management and the brands' quality organizations play an active role at all stages of product emergence and testing, making an important contribution to successful product launches, high customer satisfaction and low warranty and goodwill costs.

In consultation with the brands, we developed the Group Quality Management strategy as part of our future program TOGETHER – Strategy 2025. Focal areas include digitalization, new technologies and business fields, as well as uniform processes, methods and standards at all brands.

Advancing digitalization is also a major challenge for the Volkswagen Group: an ever increasing number of digital products and services is being developed and brought to market. To continue to ensure our customary level of quality and safety amid this diversity, we must adapt our quality measures accordingly. For example, the increased functional diversity and complexity of the driver assistance systems, extending all the way to autonomous vehicles, means that the software is also growing in scope. We have therefore introduced the processes and structures of what are known as smart quality organizations in the Group and the brands, completing this in the reporting period. Among other things, smart quality organizations refine the methods we use to support the development of software for selected critical features, and with which we can ensure that quality requirements are met. At the same time, we are taking advantage of the progress in digital technology to further optimize our existing processes and structures. For example, we use virtual measurement technologies or big data analyses when vehicles on the market encounter quality problems.

The strategy of Group Quality Management developed in this context comprises the following four goals:

- › We will impress our customers with our outstanding quality by understanding what exactly they perceive as quality and implementing this in our products.
- › We will contribute to competitive products with optimal quality costs by ensuring robust processes, thereby reducing the expense involved in testing each vehicle.
- › In critical business processes, we will reinforce the principle of multiple-party verification and monitor achievement of milestones even more closely.
- › We will become an excellent employer by promoting the personal development of every single employee even more intensively.

To achieve our goals, we are working on a variety of quality initiatives. All are focused on the topics that are decisive to the success of the quality organizations in the Volkswagen Group.

Contributing to the Group's strategic indicators

We use a strategic indicator to measure the contribution of Quality Management in the major passenger car-producing brands.

- › Tow-in 12 MIS. This indicator shows the number of vehicles that need to be towed to a dealer per 1,000 vehicles after 12 months in service (MIS). It includes all Group vehicles categorized as tow-ins by dealers in the German market. After a continuous fall in the number of Volkswagen Group tow-ins in the German market since 2014, a slight overall increase was recorded again in the 2017 production year. Of the six brands featured, Audi, SEAT and Porsche saw their performance improve year-on-year. The Volkswagen Passenger Cars, ŠKODA and Volkswagen Commercial Vehicles brands recorded a slight upward trend. The brands' ratios for the 2017 production year are within or slightly above the target corridor in each case. Quality is the Volkswagen Group's top priority. All of the Group brands are therefore striving to continuously reduce the number of vehicles that need to be towed to a dealer.

We also use a strategic indicator to measure our success in the truck and bus area:

- › Claims per vehicle 12 MIS Truck. This figure incorporates the number of claims related to liability for material defects per 1,000 vehicles after 12 months in service. MAN and Scania each collect this data for their products from across the globe. MAN recorded a slight increase in the number of claims at the beginning of the fiscal year due to a cross-sector problem that has now been resolved. Systematic quality management enabled both brands to keep their figures at a good level for the rest of the year.

Legal and regulatory compliance

The legal and regulatory compliance of our products is paramount in our work. We have further reinforced application of the principle of multiple-party verification – which involves mutual support and control between the divisions – and introduced additional important processes, including in software security. With effect from the reporting period, software development is accompanied by quality milestones at all brands, whereby all systems, components and parts that directly influence a vehicle's safety, type approval and functioning and therefore require particular vigilance are safeguarded through multiple-party verification. At the series production stage, we are also ensuring even more stringently than before that the conformity checks on our products are carried out and assessed with the participation of all business units involved. This applies particularly to emissions and fuel consumption.

We are also placing even greater emphasis on our quality management system than before, reinforcing the process-driven approach Group-wide across all business areas. Quality management in the Volkswagen Group is based on the ISO 9001 standard, which was revised in 2015: the requirements of this standard must be met to obtain the type approval needed to produce and sell our vehicles. We conducted numerous system audits in the reporting period to verify that our locations and brands comply with the requirements of the standard. Particular focus was placed on assessing the risk of non-compliance with defined processes. Our quality management consultants pay attention to ensuring that these and other new requirements, as well as official regulations are implemented and complied with; they are supported in this endeavor by Group Quality Management.

With these and other measures, Group Quality Management is helping to ensure that we as a manufacturer meet the legal requirements, and that our products do so, too.

Observing regional requirements

Our customers in the different regions of the world have very diverse needs as far as new vehicle models are concerned. Another important task of Group Quality Management is therefore to identify and prioritize these regional factors so that they can be reflected in the development of new products and the production of established vehicle models – together with other important criteria such as the quality of locally available fuel, road conditions, traffic density, country-specific usage patterns and, last but not least, local legislation. We mainly use market studies and customer surveys to determine region-specific customer requirements.

To ensure that the perceived quality of our vehicles is at a level commensurate with that of our competitors, we already realigned our vehicle audit back in 2017 and tailored it more closely to regional customer needs. Every brand works together with the individual regions to decide how its product is to be positioned there. This enables us to strengthen the responsibility of the brands and invest less in features that do not resonate with customers. To ensure that the audit returns comparable results, consistent quality benchmarks apply across all markets and regions. We are continually adapting these to changing requirements. For more than 40 years now, we have been deploying auditors around the world to assess from the customer's perspective the vehicles that are ready for delivery and to ensure that these vehicles comply with the benchmarks defined.

EMPLOYEES

The Volkswagen Group is one of the world's largest employers in the private sector. As of December 31, 2018, we employed 664,496 people, including the Chinese joint ventures, 3.5% more than at the end of 2017. The ratio of Group employees in Germany to those abroad remained largely stable over the past year: at the end of 2018, 44.1 (44.8)% of the employees worked in Germany.

Human resources strategy and principles of the human resources policy

With the human resources strategy "Empower to transform", the Group is continuing with key and successful approaches to human resource management. These include the pronounced stakeholder focus on corporate governance, comprehensive participation rights for employees, outstanding training opportunities, the principle of long-term service through systematic employee retention and the aspiration to appropriately balance performance and remuneration. At the same time, the new human resources strategy is setting innovative trends. Hierarchies are being dismantled, and modern forms of working such as agile working – an approach whereby most responsibility for the work organization is transferred to the teams – are set to be expanded. In the future, collaborative robots will ease heavy physical work in factories and digital processes will simplify administration.

In the Human Resources division, we are guided by five overarching objectives:

- › The Volkswagen Group aims to be an excellent employer with all of its brands and companies worldwide.
- › Highly competent and dedicated employees strive for excellence in terms of innovation, added value and customer focus.
- › A forward-looking work organization ensures optimal working conditions in factories and offices.
- › An exemplary corporate culture creates an open work climate that is characterized by mutual trust and collaboration.
- › The Company's human resources work is highly employee-oriented while also aiming for operational excellence and providing strategic value-added contributions.

In the course of the 2018 reporting period, we continued to work on our diversity management program that we are rolling out throughout the Company. Given the cultural diversity in our global markets and the growing economic momentum, competitive success requires an ever-broader range of experience, world views, problem-solving and product ideas. The diversity of our staff provides potential for innovation in this area, which we aim to make better use of in the future. Mandatory rules on the percentage of women in management, combined with targets for the internationalization of senior management, are at the heart of diversity management at Volkswagen.

EMPLOYEES BY CONTINENT

in percent, as of December 31, 2018



We are also driving large-scale cultural change to achieve greater openness and transparency in line with our corporate strategy. Seven Volkswagen Group Essentials formulated in 2018 provide shared values and the foundation for cultural change across all brands and companies:

- › We take on responsibility for the environment and society.
- › We are honest and speak up when something is wrong.
- › We break new ground.
- › We live diversity.
- › We are proud of the work we do.
- › We not me.
- › We keep our word.

Group-wide activities such as team dialog encourage employees to analyze the Group Essentials.

In 2018, we also began to implement our new approach throughout Human Resources departments across the Group. Going forward, the development paths into management will be characterized by greater individual responsibility, transparency and practical relevance and will include employees from different levels of the hierarchy in the evaluation of candidates.

When implementing our Group strategy TOGETHER – Strategy 2025, we paid particular attention in the reporting period to the level of achievement regarding the goals set by the applicable strategic KPIs. For the passenger car-producing brands, we compile and analyze the following information:

- › Internal employer attractiveness. The indicator is determined by asking respondents, as part of the Group-wide opinion survey, whether they perceive the respective company as an attractive employer. The target for 2025 is 89.1 out of a possible total of 100 index points. A score of 84.2 index points was achieved throughout the Group in the reporting period, contrasting with 85.2 points in the previous year.

- › External employer attractiveness. The ability to recruit top talent is of decisive importance, particularly in view of the Company's transformation into a world-leading provider of sustainable mobility solutions and the associated development of new business fields. Using this strategic indicator, we check the positioning of the major passenger car-producing brands on the labor markets once a year with regard to graduates and young professionals. Rankings in surveys by renowned institutions, in which we aim to achieve top scores for all Group brands, serve as the basis for this.
- › Diversity index. As we establish diversity management across the Group, this strategic indicator for the active workforce is used worldwide to report the development of the proportion of women in management and the internationalization of top management. In particular, it underpins the objective of the human resources strategy, which is aimed at contributing to an exemplary leadership and corporate culture. The proportion of women in management amounted to 13.8% in 2018 and was therefore at the prior-year level; we aim to raise this to 20.2% by 2025. We aim to increase the level of internationalization in top management, the uppermost of our three management tiers, to 25.0% in 2025; in the past fiscal year this was 19.2 (18.7)%.

In the truck and bus business, we look at the opinion survey and cross-brand exchange of employees to identify how well strategic targets are being achieved:

- › Opinion survey. The sentiment rating is used to determine the level of employee satisfaction and identification with the company. The sentiment rating is calculated as the average score of all responses regularly submitted as part of the opinion survey. In the truck and bus business, the 2018 result amounts to 76.4 (74.7) index points and is therefore higher than the previous year's level.
- › Cross-brand exchange and rotation. The aim is to continuously intensify collaboration between the commercial vehicle brands. It is also designed to enable the creation of specialist and international networks at the same time. We use this indicator to analyze how many employees work at another brand through rotation. In 2018, this opportunity for career development again saw an increase in uptake.

One strategic indicator has been defined for the financial services business:

- › External employer ranking. This involves taking part in an external benchmarking, in general once every two years. The aim is to position ourselves as an attractive employer and identify measures to become a top-20 employer by 2025, not just in Europe, but globally. Volkswagen Financial Services AG was represented in various national and international best-employer rankings the last time it participated in 2016. In 12th place, it was among the top European employers in the "Great Place to Work" employer competition.

Training and professional development

At Volkswagen, our capacity for innovation and competitiveness depends to a large extent on the commitment and knowledge of our staff. Training at Volkswagen is organized systematically and according to the so-called vocational groups. These comprise all employees whose tasks are based on similar technical skills and who require related expertise in order to perform their jobs. A skills profile lays down the functional and interdisciplinary skills for each job and serves as a guide for training measures.

Volkswagen Group employees have access to a wide range of training measures – from further training in general Company-related issues to specific training or personal development programs. Thanks to these opportunities, Volkswagen employees are able to further develop and steadily deepen their knowledge throughout their working lives. In this process, they are also able to learn from more experienced colleagues, who pass on their knowledge as experts in the vocational group academies. Training measures are based on the dual training principle, which combines theoretical content with practical experience on the job by means of specific tasks.

New technologies can usefully complement learning and the transfer of expertise. The Volkswagen Group Academy, the central training organization in the Group, incorporates this idea into different projects. One example is the Education Lab, where the Volkswagen Group Academy conducts educational research, analyzes training trends and tests tech-

nologies at Volkswagen together with start-ups, thereby generating new ways to develop skills at the Company.

One branch of the Volkswagen Group Academy is the AutoUni. It provides the Group with knowledge that is relevant for the future by engaging in-house senior experts and universities. Its events are offered as programs and as cooperative study modules in what is known as a blended learning format, which combines classroom training with online content, supplemented by lectures and conferences.

Volkswagen is striking out in new directions with the Faculty 73 program it kicked off in October 2018. From 2019 onwards it will train 100 software developers per academic year who are needed for the digital transformation in the Company. The AutoUni program is designed for employees with basic IT skills as well as in-house and external candidates with other suitable basic qualifications.

Vocational training and cooperative education

The core component of training at Volkswagen is vocational training or for young people eligible to enter university, cooperative education (dual study programs combining university studies with on-the-job training). As of the end of 2018, the Volkswagen Group had trained 19,244 young people in approximately 50 trades. We have introduced the principle of dual vocational training at many of the Group's international locations over the past few years and are continuously working on improvements. The Group's vocational trainees predominantly learn their trade through dual vocational training. Once a year, Volkswagen honors its highest-achieving vocational trainees in the Group with the Best Apprentice Award.

Even after their vocational training has been completed, young people at the start of their careers are encouraged to continue their professional development in our Company. This is why we promote particularly talented young specialists in talent groups. These two-year development and training programs accept the highest-achieving 10% of fully qualified vocational trainees at Volkswagen AG each year. In addition, fully qualified vocational trainees have the option to work at a Group company outside Germany for twelve months as part of the "Wanderjahre" (Year Abroad) program. In the reporting period, 27 Volkswagen Group locations in 17 countries took part in this program.

Last but not least, we developed the AGEBI+ program. It promotes fully qualified vocational trainees who are eligible for university and wish to combine a degree program in subjects that are crucial for Volkswagen's future with closely related practical experience.

Development of university graduates

Volkswagen offers two structured entry and development programs for university graduates and young professionals. In the StartUp Direct trainee program, graduate trainees gain an overview of the Company over two years while working in their own department and take part in supplementary training measures. University graduates interested in working internationally can participate in the 18-month StartUp Cross program. The aim here is to get to know the Company in all its diversity and to build up a broad network. During their participation in the program, young professionals become familiarized with several locations in Germany and other countries by working in various departments. Both programs also include several weeks' experience working in production. In 2018, Volkswagen AG hired a total of 164 graduate trainees as part of these programs, 28.7% of whom were women.

Young people can also take part in graduate trainee programs at the other Group companies as well as at the Group's international locations, such as ŠKODA in the Czech Republic, SEAT in Spain or Scania in Sweden.

Increasing attractiveness as an employer and target-group-specific development programs

A family-friendly human resources policy is a major component of Volkswagen's appeal as an employer; in particular, it helps to achieve greater gender equality. We work continuously to develop family-friendly working time models and to increase the number of women in management positions. In line with German law on the equal participation of women and men in leadership positions (Führpos-GleichberG – German Act on the Equal Participation of Women and Men in Leadership Positions in the Private and Public Sectors), Volkswagen AG is aiming to have a 13.0% share of women at the first management level and 16.9% at the second management level by the end of 2021. As of December 31, 2018, the proportion of women in the active workforce at the first level of management was 10.7 (10.4)% and at the second level of management it was 15.4 (14.0)%.

PROPORTION OF WOMEN*as of December 31*

%	2018	2017
Employees	16.5	16.3
Vocational trainees ¹	27.5	28.8
Graduate recruits ²	28.7	30.3
Total management ¹	12.1	11.4
Management ¹	14.4	13.2
Senior management ¹	9.4	9.2
Top management ¹	7.0	6.5

¹ Germany, excluding Scania, MAN and Porsche.² Volkswagen AG

For every board-level division in the Company we have set targets for the development of the proportion of women in management to encourage women with high potential to advance within the Company. This approach is supported by many different measures including cross-brand mentoring programs.

In recent years, a large number of company regulations have also come into effect in the Group to make it easier for employees to balance the demands of work and home life and allow staff to arrange their own individual working model. These include flexible working hours, variable part-time work and shift models, leave of absence programs enabling employees to care for close family members, child-care services that are connected to the company or are company-owned, and mobile working.

At Volkswagen AG, which entered into its works agreement for mobile working back in 2016, more than 17,800 employees are making use of a more flexible working arrangement as of the end of the reporting period.

Preventive healthcare and occupational safety

Volkswagen's holistic healthcare management system also covers work organization, workstation design, behavioral ergonomics, psychosocial aspects, rehabilitation and reintegration into working life as well as programs for preventing lifestyle diseases.

In addition to conventional preventive healthcare and occupational safety, a free and comprehensive voluntary screening (the Check-up) is provided for all employees at almost all production sites. To maintain and improve employees' health, fitness levels and performance, the Check-up is followed by measures to promote exercise, healthy eating and mental balance, for example.

Another important area for action in the Volkswagen Group is workstation ergonomics. Continuously improving

AGE STRUCTURE IN YEARS OF VOLKSWAGEN GROUP EMPLOYEES*as of December 31, 2018; in percent*

these along the entire production chain and in all work processes is of great importance to us. Together with scientific partners, we are working resolutely to introduce state-of-the-art ergonomic workstations and innovative work processes in as many areas as possible.

Employee participation

Codetermination and employee participation are important pillars of our human resources strategy. Volkswagen aims to promote high levels of expertise and a strong sense of team spirit. This includes employees' opinions, assessments and criticisms being heard.

With the opinion survey, a Group-wide poll, the Company not only regularly gathers information regarding employee satisfaction, but also inquires about the shape of our corporate culture and the manner in which, for example, compliance requirements are implemented. Based on the results, follow-up processes are implemented in which measures are developed and implemented. Over 600,000 employees from 175 locations and companies in 50 countries were invited to take part in the survey. The participation rate was 79%. The average result that is regularly received through the opinion survey – the sentiment rating – is an important parameter in the opinion survey; in 2018 it stood at 78.9 out of a possible total of 100 index points. The score achieved in 2018 was thus slightly higher than the previous year's figure that amounted to 78.3 points.

In addition, we also encourage our employees' commitment through idea management: employees can use their creativity and knowledge to contribute their ideas for improvements, thus helping to streamline workflows, further enhance ergonomics in the workplace, reduce costs and continuously increase efficiency. Idea management enables employees to participate actively in the planning and organi-

zation of their work. The system also provides monetary incentives by offering set rewards.

INFORMATION TECHNOLOGY (IT)

Volkswagen is working hard on strengthening its digital competencies with a view to shaping and safeguarding the Company's future viability. To this end we are continuously upgrading our IT systems so that they are sustainable in the long term and we are progressively moving our systems and applications over to new cloud platforms. Our primary concern is further increasing the efficiency of the IT systems used throughout the Group and standardizing these as far as possible. We are also concentrating on building up our expertise and specialist IT knowledge, especially in key digital technologies such as artificial intelligence and the use of new IT technologies in products, services and business processes.

Volkswagen is embracing on digitalization, particularly at its in-house IT labs in Wolfsburg, Munich, Berlin, San Francisco and Barcelona. Group IT, research institutions and technology partners are working closely together at these innovation centers on future trends in information technology, such as artificial intelligence and machine learning, quantum computing, digital ecosystems, intelligent human-robot collaboration and smart mobility. These labs act as test laboratories for the Group, as centers of expertise for these future trends and as liaison offices for start-ups. They enable us to work and experiment with new technologies outside the line organization. This allows the experience and strategic expertise of a large company like Volkswagen to be combined with the pragmatism and speed of young start-ups. Highly specialized experts at the IT labs in San Francisco and Munich, for example, are working on exploiting the potential of quantum computers for areas that have a commercial application. The focus here is on optimization of flows of traffic and simulation of materials and alloys. Initial experimental projects are also investigating opportunities for combining the potential of quantum computers with self-learning systems (quantum machine learning).

In IT test projects we are using artificial intelligence to develop so-called self-learning systems. These learn through intelligent data analysis and are, for example, designed to assist staff in recurring administrative work steps by preparing these activities independently and giving them to staff for a decision.

The growing convergence of different business areas and IT is also opening up opportunities. In production, for example, big data processes help us to analyze faulty machinery

and take action at an early stage. Our experts from Production and Group IT are therefore working together on a digital platform that combines the systems and equipment in the factory into an integrated overall system. This will allow efficiency to be increased and digital pilot projects to be integrated into the existing architecture much more easily than before. Applied research in the field of intelligent human-robot collaboration and IT systems to control mobile assistive robotics and networked infrastructure (Industrial Internet of Things) are also important elements of the digitalization of production at the Volkswagen Group. Group IT is likewise contributing its expertise in the field of research and development in conjunction with the different departments. For instance, digitalized work tools such as the virtual concept vehicle make the product development process faster and more efficient.

In software development centers we develop cross-brand software for digital ecosystems and for new business processes in the Group. We thereby maintain in-house expertise in the rapid, demand-oriented development of software and IT solutions. This capability will become increasingly important as the Group's digital transformation evolves.

The "IT for everyone" initiative aims to give all employees of Volkswagen AG access to digital media and work tools. The objective is to further improve communication and collaboration among production and administrative employees. An important issue in this connection is the growing volume of official work being performed on mobile devices. The Company's internal network Group Connect promotes knowledge transfer and networking among all employees. The platform puts experts in touch with one another across brands and internationally. The introduction of the Group Connect application for personal mobile devices further simplifies access for employees of the direct units.

Safeguarding data and systems at the Volkswagen Group is another focus of our IT. To also protect our customers against cyber-attacks and ensure that our solutions are in conformity with national and international legislation, we continued setting up an integrated, cross-brand, cross-regional Information Security Management System (ISMS) as part of the Protected Customer program. The Group offers documents, templates and tools to all Group companies and brands in the form of an ISMS toolbox to help them implement their own ISMS. Key information security processes have been audited and certified within the international ISO 27001 framework. This is the most important standard for information security and extends beyond IT to

also cover issues such as personal security, compliance, physical security and legal requirements. One of the aims of the program, which is set to run until 2021, is also to safeguard the complete life cycle of our vehicles and the digital mobility services.

In fiscal year 2018, another focus of IT was on the systematic implementation of the European General Data Protection Regulation (GDPR), which was combined in a Group program and rolled out in all corporate functions. In the course of the sustainable implementation of the GDPR, the data protection processes and procedures in place in the brands will be consolidated and standardized. When new IT solutions are being developed, the requirements will be enforced from the outset. Transparency in the processing and minimization of data are key goals on which we will continue to work. To ensure sustainable observance of the GDPR, the Group program will be gradually transferred to a company-wide data protection management system as well as a data protection organization in 2019.

In 2015, Volkswagen AG co-founded Deutsche Cybersicherheitsorganisation GmbH (DCSO). DCSO is accumulating specialist knowledge on cybersecurity and aims to become the preferred service provider to European businesses in this field. DCSO is a competence center and a managed security service provider for protecting companies against criminal hackers, industrial espionage, government attacks and sabotage.

ENVIRONMENTAL STRATEGY

Protecting the environment is firmly anchored in the main goals of our future program TOGETHER – Strategy 2025. As a world-leading provider of sustainable mobility, we want to be a role model on environmental issues. We are working towards this goal, taking responsibility for the environment every single day. In striving to achieve our goal of becoming a role model, we consider the environmental impact throughout the entire product life cycle: from manufacturing (including the supply chain) to use and disposal. In addition to the global challenges of climate change, our approach also looks at other important environmental resources, particularly water, soil, air, energy and raw materials. We use major sustainability ratings as our benchmark and aim to achieve top rankings in these. To this end, we have defined the following target areas:

- › To continuously improve our carbon footprint
- › To continuously reduce harmful emissions
- › To continuously reduce resource consumption

We use the decarbonization index (DCI) as a strategic indicator to document our progress. This measures the products' CO₂ emissions along the entire value chain. The DCI is calculated from the ratio of the carbon footprint to the number of vehicles sold. It encompasses both direct and indirect CO₂ emissions at the individual production sites (Scope 1 and 2) as well as all further CO₂ emissions over the life cycle of the vehicles sold – from the extraction of raw materials, to vehicle use and final disposal of old vehicles (Scope 3). The DCI thus enables transparent, comprehensive tracking of progress toward climate-friendly mobility. We are currently defining the DCI target figures for 2025 together with the Volkswagen Group brands. The 2°C target of the Paris Agreement adopted at the UN Climate Change Conference in late 2015 serves as an important parameter for us in this endeavor.

We are also calculating the environmental impact reduction production indicator. We have set a target for the Group and brands to reduce the environmental impact of production by 45% per vehicle compared with 2010 levels. This indicator includes energy and water consumption, CO₂ and VOC emissions and the volume of waste; the charts on page 144 show the development of these indicators.

Organization of Environmental Protection

The Group Board of Management is the highest internal decision-making authority on environmental matters. Since 2012, it has simultaneously functioned as the Group's Sustainability Board. The Group-wide management of environmental protection is the responsibility of the Group Steering Committee for the Environment and Energy, which is supported by numerous specialist bodies.

The brands and companies are responsible for their own environmental organization. They base their own environmental policies on the targets, guidelines and principles that apply throughout the Group. The Group Steering Committee for the Environment and Energy coordinates the brands and companies. It reports on progress to the Board of Management.

Environmental officers from throughout the Group meet regularly for the Group Environmental Conference in order to optimize the environmental focus along the entire value chain.

Our production sites, including the central development areas, are certified in accordance with ISO 14001 or EMAS (101 of 123 production sites in 2018). Many production locations have also certified their energy management systems in accordance with ISO 50001. Since 2009, the "integration of environmental aspects into the product development at the Volkswagen brand" has also been certified in accordance with ISO TR 14062 in the Technical Development department at the Volkswagen Passenger Cars brand.

Biodiversity

Biodiversity means the variety of life on our planet, and covers the variety of species, the genetic differences within species and the diversity of ecosystems. We rely on it as the basis for our continued existence: healthy food, clean water, fertile soils and a balanced climate. Due to the global decline in biodiversity, the United Nations has declared the current decade to be the “UN Decade on Biodiversity”.

Volkswagen has been committed to protecting biodiversity since 2007 and is a founding member of the Biodiversity in Good Company e.V. initiative. In our mission statement, we have committed to supporting the protection of species at all of our locations. For this, we are collaborating with local partners and suppliers. We are in the process of developing a suitable evaluation model to show the effect of biodiversity projects and promote biodiversity at our production locations. Our membership in Biodiversity in Good Company e.V. had been temporarily suspended as a result of the diesel issue, but we were reincorporated as an active member at the beginning of 2019.

Protecting biodiversity is an integral part of our environmental management. We contribute to achieving the targets of the UN Convention on Biological Diversity (CBD) by reducing

greenhouse gas emissions and utilizing resources as efficiently as possible. Volkswagen supports networking between the various players in the fields of business, politics, society and academia with a view to increasing public awareness of biodiversity conservation and to increase knowledge of the issue.

SEPARATE NONFINANCIAL GROUP REPORT

The combined separate nonfinancial report of Volkswagen AG and the Volkswagen Group in accordance with sections 289b and 315b Handelsgesetzbuch (HGB – German Commercial Code) for fiscal year 2018 will be available on the website https://www.volkswagenag.com/presence/nachhaltigkeit/documents/sustainability-report/2018/Nichtfinanzieller_Bericht_2018_d.pdf in German and at https://www.volkswagenag.com/presence/nachhaltigkeit/documents/sustainability-report/2018/Nonfinancial_Report_2018_e.pdf in English by no later than April 30, 2019.

REPORT ON POST-BALANCE SHEET DATE EVENTS

There were no significant events after the end of fiscal year 2018.