

# **SUSTAINABILITY REPORT 2016**



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# ABOUT THE REPORT

Following our sustainability brochure in 2015, this is the fifth edition of the sustainability report published by ZF Friedrichshafen AG. It is based on the fiscal year 2016 in which TRW Automotive was included for the first time for a full year. While most of the non-financial data have been successfully consolidated for the combined company, there are still a few datapoints for which a complete integration could not yet be finalized. Wherever data and information provided in this report only represent ZF without TRW, this is marked accordingly. Apart from new disclosures for the combined company relating to the reporting period of this report, there were no restatements necessary from information provided in the 2014 sustainability report – the last full report in accordance with the Global Reporting Initiative (GRI). Our sustainability report is published annually and was not submitted for an external assurance.

This sustainability report has been drawn up in compliance with the G4 guidelines of the Global Reporting Initiative and meets the “In Accordance” core option. The fulfillment of the GRI indicators is shown in the GRI Content Index (page 83). The G4 guidelines require the company to perform a materiality analysis which sets priorities in reporting and focuses on central elements of the performance indicators in the fields of economy, environment, and society. The process for determining the material issues is described on pages 23 – 26 of the

report. The report was submitted for the GRI Materiality Disclosures Service, and GRI confirmed the correctness of the locations of the G4 materiality disclosures (G4-17 – G4-27).

The report is intended to offer transparency, with a particular focus on our sustainability activities and objectives. At the same time, the report represents our progress report to the United Nations Global Compact that we joined in May 2012. It addresses customers, employees, suppliers, politicians, authorities, and all other target groups that are interested in our company and wish to know about our values and principles.



UN GLOBAL COMPACT  
COMMUNICATION ON  
PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

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# CEO STATEMENT

Dear readers,

the automotive industry is undergoing a radical transformation. Two megatrends in particular are revolutionizing our entire industry: digitalization and sustainability. Not only is mobility becoming increasingly automated, it is also being impacted by several dynamically evolving developments such as population growth, a shortage of resources, climate change, urbanization and demographic challenges. All of these factors are directly affecting mobility concepts of the future. Today more than ever, a company which is not able to provide solutions quickly enough may put its business success at risk. For this reason, agility and sustainability are both vitally important to us.

Sustainability at ZF has several dimensions. Indisputably, the technologies we provide have the biggest impact globally. It is our vision to cut down both mobility-induced emissions and road fatalities to zero. With our technologies, we are enabling the global automotive industry as well as other industrial sectors to realize these goals. For this purpose, we are continually expanding our portfolio of electric drives, holistic safety technologies as well as intelligently connected and automated systems for cars, commercial vehicles, farming and construction machines and industrial applications.

Two years ago, and in line with our ZF 2025 Strategy, we took one big step in that direction by purchasing TRW Automotive. At the same time, sustainability for ZF also means continually reducing our own

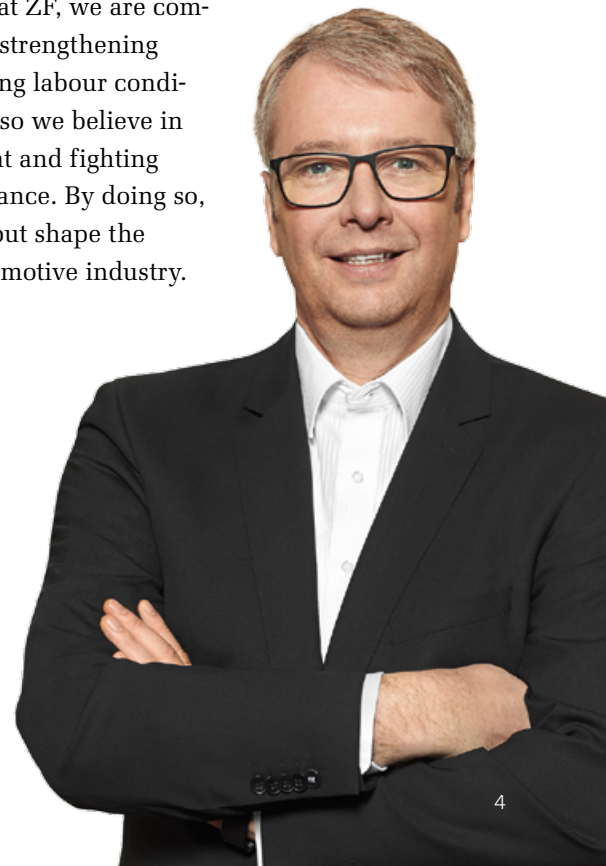
ecological footprint, maintaining a healthy and highly motivated workforce, engaging with our communities and continually developing the ecological and social performance of our suppliers.

This sustainability report reflects how we performed across all of these dimensions in 2016 and highlights the targets which will lead us into the future. It includes – this year for the first time – TRW and represents the progress we have made as an integrated company towards our commitment to the United Nations Global Compact.

As a signatory of the Global Compact and in line with our very own values at ZF, we are committed to working towards strengthening human rights and improving labour conditions wherever needed. Also we believe in protecting the environment and fighting corruption with zero tolerance. By doing so, ZF will not only support, but shape the transformation of the automotive industry.

Yours sincerely,

**Dr. Stefan Sommer**  
Chief Executive Officer



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# COMPANY PROFILE

ZF Friedrichshafen AG was founded in 1915 to produce gears and transmissions for aircraft, motor vehicles, and motorboats. Over the past decade, the company has increased significantly in size and market importance. ZF is twice as powerful today following the major acquisition of TRW Automotive in 2015 and its successful integration.

As of 2016, ZF has a workforce of 136,820 employees at approximately 230 locations in 40 countries and 20 main development locations. The group has an international service network with 120 service locations and 650 service points that offers ZF customers an extensive range of services worldwide. ZF has a portfolio of several thousand products in approximately 130 different product groups and generated sales of EUR 35.2 billion in 2016.

The Engineered Fasteners & Components Business Unit was sold in the fiscal year 2016. In addition, Cherry GmbH was sold in October 2016 to the German private investment company GENUI. As of year-end 2016, an agreement was entered into with Voith Automotive GmbH on the sale of 51 percent of the shareholding in ZF Fonderie Lorraine S.A.S. The company produces internal transmission parts and transmission housings in Grosbliederstroff (France). In 2016, ZF Group founded Zukunft Ventures GmbH and established joint ventures with Ibeo and doubleSlash.

ZF Friedrichshafen AG is a non-listed corporation in accordance with German law. The shareholders of ZF are the Zeppelin Foundation administered by the City of Friedrichshafen and holds 93.8 percent of the company's shares and the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde (Germany) that holds 6.2 percent of the company's shares. Employee stocks are not issued. The company is headquartered in Friedrichshafen, Germany.

Each year, ZF gives the Zeppelin Foundation a dividend. The funds are used exclusively for non-profit and social purposes, especially in the fields of science and research, art and culture, as well as child and youth development. The Dr. Jürgen and Irmgard Ulderup Foundation in Lemförde supports the education and vocational training of young people as well as nature and landscape conservation. Jürgen Ulderup was the founder of the Lemförder Group, a company that is part of the ZF Group today.

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ZF expanded its product portfolio by adding safety and sensor technology products and expertise through the acquisition of TRW Automotive. As a global leader in driveline and chassis technology as well as active and passive safety technology, ZF operates in particular in the passenger car and commercial vehicle industry. In addition, our activities cover other market segments such as construction and agricultural machinery, wind power, marine propulsion, aviation technology, rail drives, special drives and test systems for industry and transmissions for industrial applications. Alongside transmission systems, units and components, the company also produces chassis systems and components as well as safety technology, electronics and sensors. ZF offers a wide range of services that are mainly marketed by the ZF Aftermarket organization. These services primarily involve the spare parts business for driveline and chassis technology as well as maintenance and repair services. The Group provides intelligent solutions to successfully meet the mobility challenges of tomorrow. That is how ZF is shaping the future of the mobility industry.

The most important ZF product brands include:

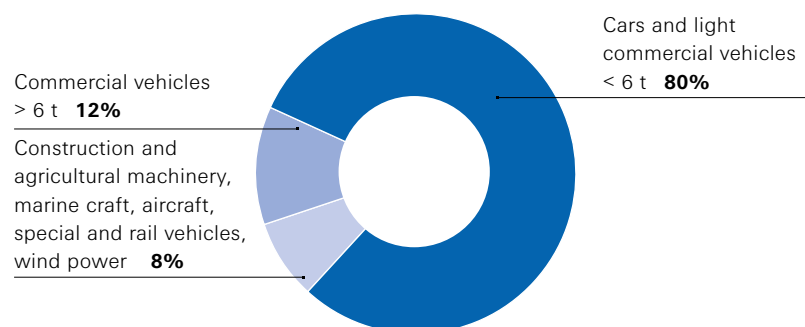
- SACHS: clutches, dual mass fly wheels, torque converters and shock absorbers for passenger cars and commercial vehicles
- LEMFÖRDER: steering and suspension systems, rubber-to-metal components for passenger cars and commercial vehicles
- TRW: braking systems, steering and suspension systems and shock absorbers for passenger cars and commercial vehicles. Brakes, clutches, handle bars, accessories and footrest systems for motorcycles
- BOGE: shock absorbers for passenger cars and commercial vehicles
- OPENMATICS: connectivity solutions for passenger cars, trucks, industrial applications, manufacturers, fleets and end consumers

The pooled strengths of ZF and ZF TRW in research and development enable us to jointly offer customers advanced and holistic solutions. ZF is benefiting vastly from the complementary product portfolio that contains practically no overlaps. There are also further advantages to our acquisition of TRW: The division of business is much more international, with TRW strengthening our presence in North America and Asia. Looking at our customer portfolio, ZF now has a much broader base. ZF's historically strong positioning with premium customers is supplemented by TRW's orientation toward volume customers, which broadens our customer base. Thanks to the acquisition, ZF has achieved global market penetration as well as profitable diversification, while further expanding its technology and cost leadership.

## Global footprint

The international business activities of the ZF Group traditionally focus on Europe (over 81,500 employees), primarily in the German domestic market (over 49,000 employees). The major locations in Germany accommodate both production and development capacities.

### Sales Distribution by sectors



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The integration of ZF TRW added locations in Poland, Romania, China, the USA and other vital markets around the world – including 22 technical centers and 13 test tracks. In North America, Mexico represents the major share of employees with over 18,000 and twelve locations, while the U.S. has a workforce of over 12,800 employees. The ZF Group has almost 17,000 employees in Asia-Pacific, of them, more than 13,000 in China. Since China is currently the most influential market for e-mobility, ZF is well positioned with 2 engineering technology centers, 32 manufacturing facilities, 3 aftersales service and trade companies as well as 239 aftersales service networks all over the country.

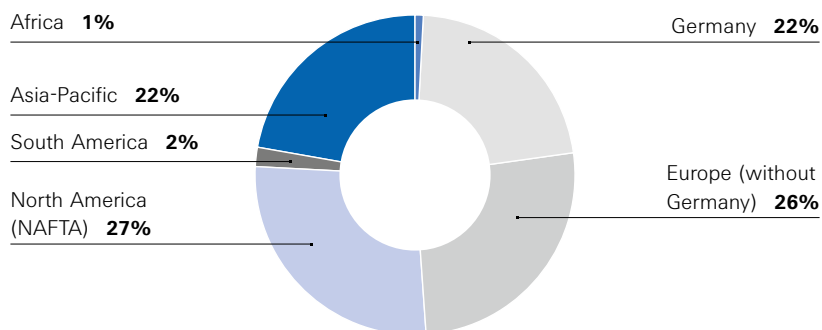
Like in previous years, global economic growth remained moderate in 2016 and trends in the individual sectors and regions were highly mixed. The crisis markets in South America and Russia had to absorb further declines while Asia-Pacific, especially China, as well as Europe and North America, were able to enjoy further gains. In terms of vehicle sectors, global production of passenger cars and light commercial

vehicles as well as global commercial vehicle production grew; in contrast, the off-road machinery markets continued to contract. One major growth driver for ZF was the particularly high sales volume of automatic transmissions for luxury and mid-size vehicles, especially in the USA, Europe and Asia. The Industrial Technology Division experienced a strong growth in 2016 due to high business dynamics in wind power markets and the acquisition of Bosch Rexroth AG. Compared to the previous year, regional sales distribution remained mainly unchanged with 48 percent of sales in Europe, 27 percent of sales in North America (NAFTA) and 22 percent of sales in Asia-Pacific.

The top financial key figures ROCE (Return on Capital Employed), ZF Value Added, and Operating Result are used to measure and control the financial performance of the ZF Group. Furthermore, free cash flow and gross margin are important financial key figures in terms of financial control in all organizational units. The application of further liquidity-oriented key figures such as working capital are supplementing the financial performance management concept.

2016 was the first year that ZF TRW, acquired in May 2015, was included in the ZF Group's business figures for a full year. The group succeeded in increasing sales by 20.6 percent to EUR 35,166 million. The adjusted EBIT also improved from EUR 1,570 million to EUR 2,239 million. The successful integration of ZF TRW is reflected in the increase in free cash flow to EUR 2,000 million, adjusted for M&A transactions. 2016 also saw the establishment of a joint aftermarket organization between ZF and TRW, which is now the second largest in the world. The joint company invested EUR 1,948 million or 5.5 percent of sales in research and development, with 14,550 employees

**Sales development by regions**



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working for ZF Research and Development worldwide including some 1,600 engineers and technicians. The ZF Group overall donated EUR 8 million (2015: EUR 12.2 million).

ZF is one of the biggest employers and customers in all the regions that the company operates in. On average, ZF products are made up of around 60 percent supplied materials and products. The ZF Group's purchasing volume rose along with sales in the year under review, particularly on the back of the expansion of business in the North America and Asia-Pacific regions. Solely for the procurement of production materials, ZF maintains a global network consisting of approximately 6,500 suppliers, ranging from small family businesses through to large groups.

The production materials purchasing volume in 2016 totaled EUR 19.2 billion. This includes directed buy volumes. The value of non-production materials amounted to some EUR 5.5 billion. Overall personnel expenses totaled EUR 7,125 million (2015: EUR 5,975 million), including wages and salaries, social security contributions, benefit expenses and pension expenses.

**Ongoing tax payments by region 2016**  
in EUR million

Europe	217
North America	45
Asia-Pacific	97
Others	5
<b>Total</b>	<b>364</b>

## Investments

In the reporting year 2016, investments in property, plant and equipment amounted to EUR 1,185 million (2015: EUR 1,290 million). The investment ratio of 3.4 percent of sales was below the prior-year level.

A share of 81 percent of capital expenditure was spent on technical equipment and machines, including advance payments and construction in progress, while 16 percent was spent on other equipment, factory and office equipment, and 3 percent on land and buildings.

The largest portion of capital expenditure related to the expansion of capacities for existing products and the rampup of new products. This included capital expenditure for transmission applications (incl. hybridization), electric traction drives, electronics, chassis systems, damper modules, brakes and steering systems, occupant safety as well as body control systems. There were also investments in constructing development and office buildings in Shanghai (China), Northville, Michigan (USA) as well as Saarbrücken and Friedrichshafen (Germany). Geographically, capital expenditure focused on Germany, the USA, China and Mexico.

Since summer 2016, the parking lot for visitors and employees at our location in Schweinfurt, Germany, has been equipped with 8 charging stations to promote e-mobility. After a quick registration process, visitors can easily make a payment with their mobile phone and ZF employees can charge their car at no cost. The electricity comes from certified water power. Besides Schweinfurt, employees benefit from this service also at our headquarters in Friedrichshafen and at our location in Auerbach, with more locations to follow in 2017.

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### Opening of the ZF Forum

In November 2016, we opened our new headquarters in Friedrichshafen, Germany. The building – known as the “ZF Forum” – offers a unique combination of offices for up to 650 employees, a fully equipped training center and an exhibition area that presents the past, present and future of ZF. This exhibit is open to the public during visiting hours.

The new ZF Forum is an important investment in Friedrichshafen and the surrounding region. In preparation for the construction, part of the city center underwent redevelopment and was upgraded over a period of more than three-and-a-half years. ZF has invested EUR 92 million in the complex comprising offices, the exhibition space, a conference level, an auditorium with seating for 350 people and a staff restaurant. The ZF Forum also provides rooms for the Knowledge Workshop (Wissenswerkstatt) Friedrichshafen, a teaching and learning facility for children and youngsters, and the Students' Research Center South Württemberg (SFZ). Training opportunities for employees and business partners is another important element in the ZF Forum. The east wing houses training facilities for the ZF Technical Training, which gives users hands-on experience with ZF products. A workshop area that houses a truck or bus for training purposes is also located in this wing.

The ZF Forum conforms to the latest structural engineering and energy standards. The buildings have been designed in a way that reduced specific power consumption levels by more than 20 percent. ZF has set up a gas-fired combined heat and power plant to provide heat and electricity.

### Government grants

In the fiscal year 2016, EUR 18 million (2015: EUR 28 million) in government grants were received. They have been itemized as follows:

**Government Grants**  
in EUR million

	2016	2015
Investment grants	12	17
Expense subsidies	6	11

Investment grants were basically received for investments at various locations in the USA, Germany, Belgium, Russia and Australia.

Expense subsidies mainly comprise research subsidies and subsidies for education and vocational training.

### Our Values

We know that a company can only achieve business success in an intact economic environment. A company's focus on success must match the development of the surrounding and dependent companies so that sustainable corporate governance is possible for all. This principle plays a major role in our relationships with business partners, but also in our investments in production materials and capacities. That is why we have firmly anchored sustainable corporate management factors in our Guiding Principles. We see them not as individual actions, but as a central aspect of entrepreneurial activity in our daily decision-making processes.

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## ZF Charter

The ZF Charter is an integral part of the new ZF Management System and defines the things we regard as most important across all our divisions, functions and regions. The ZF Charter unites the strengths of ZF and ZF TRW, combining their existing values according to the “Best of Both” approach. It supersedes ZF’s “GiveMe5” and TRW’s “Core Principles”. The Guiding Principles of the ZF Charter are Innovation Approach, Customer Focus, Result Orientation, and Commitment to People. The Guiding Principle “Commitment to People” helps us creating a corporate culture that supports trusting collaboration and motivates top performance.

ZF aims to be a fair and responsible employer that has a great deal to offer, but in return, demands serious commitment. This is how we attract and retain the best talent globally. The ZF Management System and its principles are at the heart of everything we do and represent everything that makes ZF special. By concentrating on them, we become stronger, grow faster and sustainably while improving our chances in a difficult but enormously promising industry. For further details see chapter People, page 31.

We respect and support internationally recognized human rights and we respect the dignity, privacy and personal rights of every individual. We make every effort to create a climate of mutual respect, trust, tolerance and fairness between our employees and with our business partners.

Our Code of Conduct explicitly states that we do not tolerate any discrimination, especially on the grounds of race, gender, religion, age, nationality, social or ethnic origin, disability, belief, sexual orienta-

tion, or political and trade union involvement. These principles apply to the recruitment of new employees, to employees with a valid employment contract, working relationships between employees, our dealings with business partners and, lastly, how we professionally promote our employees. The only determining factors here are performance, personality, skills and qualification. Accusations of discrimination will be investigated.

Correct, responsible and sustainable business management and accepting corporate social responsibility are fundamental components of our corporate policy. Compliance is thus an essential element in ensuring the long-term success of our company. Ever since its founding, the ZF Group has been committed to transparent business management and always bases its activities on applicable law and jurisdiction in the countries in which it operates. These include our commitment to sustainable development as well as our adoption of basic principles in the fields of human rights and working conditions, quality and environmental management, health and safety of employees, fair market behavior, and combating corruption.

We have signed the United Nations Global Compact and also observe the ILO (International Labour Organization) core labor standards, the contents of the German Corporate Governance Code, and the OECD Guidelines for Multinational Enterprises.

We reject any form of human trafficking, forced labor and child labor. All work performed within the ZF Group must be voluntary. We support the abolition of slavery, forced labor, and exploitative child labor. At ZF, we always observe the minimum age for employment stipulated in national legislation.

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All new joint ventures are bound to implement the ZF Compliance Management System or at least a comparable management system. For all existing joint ventures with majority-held ZF participation, ZF Board representatives are called upon to ensure that the ZF Compliance Management System is implemented.

### Business Partner Principles

The Business Partner Principles (BPP) were published in 2014. The ZF BPP and the ZF TRW Global Supplier Quality Manual require all suppliers and service providers to make a commitment to respect for national and international laws and regulations at their locations worldwide. They also have to ensure human rights are respected and human dignity is protected in all business processes. For further details see chapter Supply Chain, page 67.

## Our Commitments

ZF signed the United Nations Global Compact on May 1, 2012, thus committing the Group to observe and promote its ten principles. Since joining, ZF has also become a member of the German Global Compact Network and participates in exchanges between the member companies.

The ZF Group and its companies are committed to a wide range of associations and interest groups. The following list provides a representative selection:

- Employers' Association Südwestmetall
- German Aerospace Industries Association (BDLI)  
(ZF Luftfahrttechnik GmbH, Kassel-Calden is a member)
- German Association of Materials Management,  
Purchasing, and Logistics e.V. (BME)
- Carbon Composites e.V.
- Compliance Network e.V.
- German Global Compact Network
- Chamber of Industry and Commerce Hochrhein Bodensee
- Chamber of Industry and Commerce Oberschwaben, Weingarten
- Foundation of German Business – Remembrance, Responsibility,  
and Future (as a donor)
- German Association of the Automotive Industry e.V. (VDA)
- Automotive Industry Action Group (AIAG)
- German Engineering Federation e.V. (VDMA)
- Association of German Engineers e.V. (VDI) – Lake Constance  
regional association (as a supporting member)
- Wissenswerkstatt Friedrichshafen e.V.  
(as a supporting organization)
- German Federation for Motor Trades and Repairs
- German Association of Electrical Engineering and the Electronics  
Industry (ZVEI) (Member is the Auerbach plant,  
Electronic Systems business unit)
- European Association of Automotive Suppliers (CLEPA)
- German Diversity Charter (Charta der Vielfalt e.V.)

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## ZF Group Sustainability Program

The strategic framework of our sustainability program is determined to a large extent by the global megatrends which are continuously altering the world in which we do business. Taking this into account, our sustainability management in 2016 was characterized by the implementation and further development of the sustainability program first published in 2015. As part of this program, the company committed to meeting nonfinancial targets such as reducing specific greenhouse gas emissions in production, mitigating the environmental impact in logistics and continuously improving occupational health and safety, diversity and ZF's appeal as an employer. Similar

actions are being taken at ZF TRW where sustainability management involves assessing possible impacts of processes in production and at the end of the product life cycle on the environment and employees.

During the process of integrating ZF TRW into the ZF Group's sustainability management program, it was determined that the sustainability program required further development, which is to be completed by the end of 2017. The development involves harmonizing targets, management approaches, definitions of nonfinancial key figures as well as consolidating data and integrating the corresponding internal reporting processes.

Strategic Target	Actions	Status 2016	Date
<b>Product safety</b>			
High product safety standards	Employee qualification and rollout of a new training concept	Action completed	Completed
	External appraisal and certification of processes relating to product safety	Examination of the software and electronic processes to ascertain compliance with ISO 26262 and IEC 61508 by TÜV Süd (Technical Monitoring Association)	Ongoing
	Cooperation in national and international bodies dealing with functional safety	Cooperation in working groups dealing with functional safety at ISO, VDA, and ZVEI	Ongoing
	Align ZF and ZF TRW functional safety strategy	New action	2017
<b>Environmental protection in production</b>			
The program for environmental impact of production shows ZF without ZF TRW. Information on former strategic targets, actions and achievements of ZF TRW locations are presented as part of the performance report, chapter Environment page 54.			
20 percent reduction in specific CO <sub>2</sub> emissions relating to sales by 2020, compared to the average for the years 2006 to 2010	Annual review of the key figures and actions for target achievement – corrective actions by corporate in case of huge deviations, control through the environmental management system	<ul style="list-style-type: none"> <li>Target achieved: Reduction by 20 percent by the end of 2015</li> <li>The achieved reduction reached 36 percent in 2016</li> <li>Compared to the previous year specific CO<sub>2</sub> emissions were reduced by 2 percent</li> </ul>	Completed

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Strategic Target	Actions	Status 2016	Date
	Increase in energy efficiency within the framework of the environmental management system and energy management system through a broad range of actions at the individual locations Installation of own power production with lower CO <sub>2</sub> emissions	<ul style="list-style-type: none"> <li>Implementation of a large number of actions at the ZF locations whose effectiveness was confirmed in the certification audit</li> <li>Projecting phase for a combined heat and power plant in Passau, Germany</li> </ul>	Ongoing
Reduction of specific energy consumption in relation to sales, compared to the previous year	Annual review of the key figures and actions for target achievement – corrective actions by corporate in case of huge deviations, control through the environmental management system	<ul style="list-style-type: none"> <li>Target achieved: Compared to the previous year the specific energy consumption in relation to sales reduced by 3 percent</li> <li>Since 2013 the specific energy consumption decreased by 27 percent</li> </ul>	Ongoing
	All European locations are to be certified according to the energy management standard ISO 50001	<ul style="list-style-type: none"> <li>All German locations run the certified energy management system ISO 50001 since 2014</li> <li>European locations currently not covered by the ISO 50001 matrix conduct an energy audit according to DIN EN 16247</li> </ul>	2018
	Include energy efficiency as a decisive criterion in the procurement process for new machines and systems	Energy efficiency criteria were included in a new version of the technical delivery specifications for new machines and systems	Completed
Reduce or stabilize specific water consumption in relation to sales, compared to the previous year	Annual review of the key figures and actions for target achievement – corrective actions by corporate in case of huge deviations, control through the environmental management system	<ul style="list-style-type: none"> <li>Target achieved: Specific water consumption reduced by 8 percent compared to previous year</li> <li>Absolute amount of water decreased (by approx. 497,000 m<sup>3</sup>) compared to previous year</li> </ul>	Ongoing
	Appropriate planning of water-saving projects (depending on relevance)	<ul style="list-style-type: none"> <li>New <u>demineralization system at Schweinfurt</u>, Germany</li> </ul>	Ongoing
Reduce or stabilize specific wastewater generation in relation to sales, compared to the previous year	Annual review of the key figures and actions for target achievement – corrective actions by corporate in case of huge deviations, control through the environmental management system	<ul style="list-style-type: none"> <li>Target achieved: Specific wastewater consumption reduced by 10 percent compared to previous year</li> <li>Absolute amount of wastewater decreased (by approx. 655,000 m<sup>3</sup>) compared to previous year</li> </ul>	Ongoing
	Resource-efficient design of operational processes	Various wastewater specific projects realized in 2016	Ongoing
Reduce or stabilize specific waste generation in relation to sales, compared to the previous year	Annual review of the key figures and actions for target achievement – corrective actions by corporate in case of huge deviations, control through the environmental management system	Target achieved: Specific waste generation reduced by 6 percent compared to previous year	Ongoing
	Resource-efficient design of operational processes	<ul style="list-style-type: none"> <li>A plant near Shanghai, China, set up an <u>on-site treatment for emulsions</u></li> </ul>	Ongoing
Evaluation of hazardous substances and substitution as far as possible	Hazardous substances management at the locations	<ul style="list-style-type: none"> <li>Continuous screening of hazardous substances</li> <li>EHS release process for new substances at the sites</li> </ul>	Ongoing
	Rollout/localization in Asia-Pacific region	Completed in 2015	Completed

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Strategic Target	Actions	Status 2016	Date
<b>Environmental Impact of Products</b>			
Environmentally compatible product development	Increase the environmental compatibility of product developments compared to previous generations	<ul style="list-style-type: none"> <li>Strengthening environmental friendly product design though new GDPEP development directive</li> <li>8-speed plug-in hybrid transmission</li> <li>TraXon is in total 6 dB – about one third – quieter than its predecessor</li> </ul>	Ongoing
	Further strengthen the electronics fields of competence and their integration into ZF products and systems, as well as the field of lightweight design to achieve fuel efficiency as well as reduced CO <sub>2</sub> and noise emissions during the utilization phase	<ul style="list-style-type: none"> <li>ZF Innovation Truck can be controlled from a tablet outside the cab, moving and parking on battery power alone</li> <li>Lightweight rail drives with new aluminum housing for underground trains</li> <li>„Car eWallet“ – fees for charging electric car batteries are automatically paid without any manual payment transaction</li> <li>Dashboard app for comprehensive, cost-effective and efficient management of e-mobility fleets</li> </ul>	Ongoing
	Further development of hybrid technology and e-mobility	<ul style="list-style-type: none"> <li>Division E-Mobility is established</li> <li>Electrical and hybrid product portfolio further expanded</li> <li>Projects promoted based on the recommendations of the German Federal Government's National Platform for Electric Mobility (NPE) are now in their final phase</li> </ul>	Ongoing
	Establish a body spanning the different corporate functions that deals with product related environmental protection	Kick off meeting and two working sessions were held	Completed
Ensuring eco friendly product design over entire life-cycle	LCAs (Life Cycle Assessments) for fiber based products	Projects launched to analyze the entire <u>life-cycle of fiber-based</u> products in comparison to their steel and aluminium counterparts	Ongoing
<b>Environmental impact of transports</b>			
Create transparency about environmental impacts of transport	Calculate and take account of emissions in transport projects (apart from pure cost analysis of internal projects in overland freight)	<ul style="list-style-type: none"> <li>Postponed due to integration process</li> <li>Recommencement once common freight cost reporting is in place</li> </ul>	2018
	Introduce a tool to increase transparency within the supply chain (ATM – Active Transport Management)	10 ZF plants and more than 150 suppliers connected to the system	Ongoing
Ecologically efficient design of transport networks	Pool and consolidate inbound freight transports	Extension of transport consolidation via the European Consolidation Center (ECC) in Bremen	Ongoing
	Increase FTL share (full truck load)	<ul style="list-style-type: none"> <li>FTL tender with a <u>focus on local transports</u> within Germany increased the amount of FTL transports</li> <li>Further projects are planned</li> </ul>	Ongoing
	Efficient empties management	Use of existing round trips for the transport of empty loading aids to avoid complete empty runs	Ongoing

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Strategic Target	Actions	Status 2016	Date
Shift to alternative modes of transport	Use alternative, environmentally friendly modes of transport	Usage of rail transports from Germany to China to avoid airfreight	Ongoing
	Avoid and reduce air freight	Reduction of airfreight amount of ZF from 12.9 percent to 5.27 percent compared to previous year	Ongoing
	Check air freight shipments with new air freight release process	Action completed	Completed
Use sustainable logistics providers	Include emission valuation in the tender process for land freight (Germany)	Postponed due to the integration of ZF TRW's carriers and new tenders	Ongoing
	Inquire about sustainability aspects of service providers (fleet, workload, emissions, empty journeys, etc.)	Current <u>project to use long trucks</u> (length of 25.25 meters and a total weight of 40 tons) within Germany to increase utilization.	Ongoing
<b>Employer attractiveness</b>			
Positioning as a globally attractive employer	Intensify cooperation with international universities	Innovation laboratory with Duale Hochschule (DHBW) Ravensburg established	Ongoing
	Internationalize the trainee program further	The ZF Global Trainee Program was extended from trainee positions focusing on Germany to now 3 x 7 positions with regional emphasis on EU, North America (USA, Mexico) and Asia Pacific (India, China, Japan)	Ongoing
	Attractive qualification and personal development opportunities: establish and expand technical academies, global training, promotion programs, LiN (Learning on the Web) vocational training initiative, university student support programs, work-study degree models	<ul style="list-style-type: none"> <li>Set up of cross-divisional project team to analyze new requirements and qualifications due to digitalization and it's affects to apprenticeships and dual education programs</li> <li>New <u>program launched at Gray Court</u> (South Carolina, USA) for extended internationalization of apprenticeships</li> <li>Dual education center in Trnava (Slovakia) officially opened</li> </ul>	Ongoing
	Maintain the good positions we achieved in rankings and be among the top 20 employers for young engineers in Germany	<ul style="list-style-type: none"> <li>Trendence Graduate Survey places ZF at Rank 16 in Engineering Edition (Rank 14 in 2015)</li> <li>The Universum engineering student Survey ranked ZF 24 (Rank 26 in 2015)</li> </ul>	Ongoing
	Implementation of benchmarks regarding our attractiveness as an employer in China and the USA	Definition of benchmarks and conducted analysis of the strategic markets China and USA	Completed
	Family-friendly work structures to reconcile work and family	Since 2015 new day care center in Friedrichshafen (Germany) for up to 60 children	Ongoing
	Flexible working time models (e.g. sabbaticals)	<ul style="list-style-type: none"> <li>Implementation of mobile working opportunities at all German locations in 2016</li> <li>Development of flexible working supported by <u>Office 3.0</u> concept (e.g. shared document solutions, cloud based co-working)</li> </ul>	Ongoing

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Strategic Target	Actions	Status 2016	Date
Positioning as a globally attractive employer	Global Employee Survey (GES)	<ul style="list-style-type: none"> <li>Survey evaluated and about 15,000 measures for improvement developed. Almost one third were put into practice in 2015 with remaining measures following</li> <li>The Employee Commitment Index of ZF TRW has been an ongoing process for years. Each site utilizes survey results and face-to-face discussion to develop action plans to maintain and improve the workplace</li> <li>Original GES set for 2017 was postponed due to the integration process. A joint survey for the combined company is being planned</li> </ul>	After 2018
	ZF Leadership Principles	Development and Implementation of Leadership Principles aiming at establishing one common understanding of management and forming the basis for One Global Corporate Culture and One ZF in line with the ZF 2025 corporate strategy	Completed
	360° feedback	360° feedback is applied for different groups within ZF and ZF TRW. Consolidated approach will be presented in 2018	2018
Increasing the number of women in executive management positions by 2017	Increase the proportion of women from 6.3 percent to 8.4 percent at the first managerial level below the Board of Management	<ul style="list-style-type: none"> <li>A mentoring program for women in leadership functions was implemented</li> <li>Further mentoring program open to women and men will be implemented in 2017</li> </ul>	2017
	Increase the proportion of women from 6.1 percent to 8.1 percent at the second managerial level	<ul style="list-style-type: none"> <li>Femtec network was joined as corporate partner to support prospective female students from IT, engineering and science to plan and organize their studies and careers</li> </ul>	
<b>Occupational health and safety</b>			
Preserve and promote our employees' health	Preventive actions	Focus on reduction of the sickness rate with various location specific topics and projects	Ongoing
	Foundation of the Occupational Medicine expert group for hazardous substances and the interdisciplinary Health Management expert group	<ul style="list-style-type: none"> <li>Completed for ZF</li> <li>ZF TRW to be included in 2017</li> </ul>	2017
	Define and implement minimum medical standards worldwide	<ul style="list-style-type: none"> <li>Completed for ZF</li> <li>ZF TRW to be included in 2018</li> </ul>	2018
	Training courses on leadership and health	<ul style="list-style-type: none"> <li>Health management experts from all divisions developed binding standards for training courses on leadership and health</li> <li>Roll out of these standards started in Germany</li> </ul>	Ongoing

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Strategic Target	Actions	Status 2016	Date
	ZF TRW: Nominate health expert to join the ZF interdisciplinary Health Management expert group Define health management structure Nominate Executive Medical Officer to join the ZF Health Committee	New Action	2017
OHSAS 18001 certification: Gradually increase the share of Group companies participating in the matrix	Include locations within a centrally managed project with voluntary participation by the locations	ZF: 39 locations are certified within ZF corporate scheme (9 new certifications in 2016), 1 location is holding a single certification ZF TRW: 15 sites are holding a single OHSAS 18001 certification	Ongoing
ZF: Global accident reduction Program: Reduction of the global accident rate to less than 5 work related accidents resulting in one or more lost work days per one million working hours by 2025	Implementation of accident reduction programs at affected locations to achieve individual reduction targets (between 5 and 15 percent) at each location	ZF: global accident rate was reduced from 12.1 (2015) to 11.5 (reduction of 5 percent). The reduction target of 10 percent was not achieved. 13 locations missed their target significantly and as a consequence have to implement OHSAS certification  ZF TRW: accident rate was reduced from 2.45 (2015) to 2.4, resulting in 68 lost days per one million working hours (reduction of 12.1 percent)	2025
ZF TRW: Reduce the accident rate to 3 accidents resulting in one or more lost workdays per one million working hours	Establish a global organizational structure	Qualified safety officers were established at all locations worldwide	Completed
	Binding Group key figures and reporting standardized throughout the Group	<ul style="list-style-type: none"> <li>Consolidated Safety targets for the combined company</li> <li>Unification of Safety KPIs – future Safety Performance indicator will be LTAR</li> <li>Intranet reporting system for the combined company is being discussed</li> </ul>	2017
Reduce the number of lost work days to 50 or less per one million working hours	Accident management with monthly review of the KPIs as a management instrument at Group and location management level	ZF: Monthly reviews have been implemented ZF TRW metrics system includes all sites worldwide, accidents are reported on a monthly basis	Ongoing
	Local actions	Site specific accident reduction programs have been established and are being implemented. A monthly follow up process has been defined	Ongoing
	Participation of the Safety Officers in planning, procurement and operation of machines, plants and buildings	Expert team for machine safety has been nominated and has developed a procedure for the purchase of machines and equipment. The procedure includes checklists with Safety standards as a guidance document	Completed
	Regular safety inspections	Cross divisional safety inspections and audits have been implemented	Ongoing

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Strategic Target	Actions	Status 2016	Date
Safety leadership training for executive managers – will be extended to: Safety Excellence Implementation	Record near-miss-accidents	<ul style="list-style-type: none"> <li>Near misses are being discussed at the shop floor meetings performed on a daily basis</li> <li>Near miss reporting is part of the Production System and related audits</li> </ul>	Completed
	Safety Leadership (SL)	<ul style="list-style-type: none"> <li>ZF launched SL-program supported by ZF TRW experience from existing program. Initial workshop with members of the board of directors and divisional leaders completed</li> <li>Top down implementation in the entire organization ongoing</li> <li>ZF TRW focussed on SL-refresher workshops and SL-workshops for new leaders</li> <li>Supplementary Safety Culture Surveys are performed</li> </ul>	Ongoing
	Employee Involvement	<ul style="list-style-type: none"> <li>A ZF pilot site in Brazil implemented the Behavior Based Safety program with support of ZF TRW – about 5,000 were actively involved at ZF TRW sites and at the ZF pilot site</li> <li>Safety Kaizen workshops were performed to actively involve employees</li> </ul>	Ongoing
	Continuous Improvement	<ul style="list-style-type: none"> <li>The backbone of Continuous Improvement are the management systems and audit programs. Evaluation of ZF and ZF TRW systems started to promote consolidation process</li> <li>Additional sites have implemented a new ergonomics online tool, the Humantech System (THS), to strengthen the fundamental ergonomics program</li> </ul>	Ongoing

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# STRATEGY AND GOVERNANCE

In 2015, ZF completed its ZF 2025 strategy process with the aim of ensuring the entire company remains competitive over the long term. Based on megatrends and their implications for ZF, the Board of Management defined top targets that were fleshed out as part of the new strategy process in the matrix organization of the divisions, business units and corporate functions. This gives ZF robust long-term prospects supported by strategic initiatives and actions. They provide the framework for further Group approaches in strategic and operational planning. While drawing up the ZF 2025 strategy, areas of activity in the portfolio were defined that are being further developed to ensure our long-term business prospects. ZF sees a need for action principally in the areas of efficiency, advanced driver assistance systems, autonomous driving and integrated safety. With the acquisition of TRW, one of the market leaders in these fields, ZF has achieved a major advance that completes its portfolio for a secure future.

## Vision Zero

means zero accidents and zero emissions.  
Achieving these ambitious goals requires  
intelligently connected and automated systems

### Strategically managing sustainability

The context for our sustainability considerations is to a large extent shaped by the global megatrends. For instance, progressive globalization is having a major impact on ZF's sales and sourcing markets and therefore requires a stronger international focus regarding our structures and competencies. In addition, demographic change and increasing urbanization are leading to changes in consumer behavior – with a fundamentally growing demand in finite resources which is leading to increased conflicts. Several trends require a technology shift toward efficiency and resource conservation, which ZF is pushing for by continually reducing CO<sub>2</sub> and noise emissions, for example. Megatrends are also playing a central role when we set our targets for innovation.

Furthermore, we factor in legislation and politics and product-field trends that already display the initial effects of individual megatrends. In our long-term strategy process based on this analysis, we have identified three central topics for product development: driveline efficiency, vehicle safety systems, plus advanced driver assistance systems and autonomous driving. All these areas represent changing values among car buyers, especially when it comes to fuel efficiency and safety. These findings are directly impacting the ZF innovation process.

### Risks and opportunities due to climate change

ZF's business is affected in various ways by climate change. It presents certain risks for our production activities, but also opportunities for our products.

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One of the main factors affecting our production activities is the emission of greenhouse gases. Operating costs are rising due to increasingly strict legislation with tougher regulations for plant approvals. These can require even stricter adherence to emission limit values at the locations, for example, or in emissions trading, and may require retrofitting equipment. Reducing greenhouse gas emissions is a central element of ZF environmental policy, which is managed worldwide by our environmental management system according to ISO 14001.

#### Losses due to extreme weather

Extreme weather situations caused by climate change such as high water and flooding or extreme drought have so far only affected our production locations in isolated cases. Nevertheless, ZF sees these developments as a potential risk with more frequent and more intensive consequences. That is why we include early precautions against extreme weather and natural disasters as part of our sustainable corporate development.

We have only seen isolated examples of higher property insurance premiums at locations subject to potential natural hazards such as flooding, storm, or extreme drought. These could increase in the future if damage incidents occur more frequently. These issues are decisive factors when building new plants or purchasing production facilities.

#### Water scarcity at locations worldwide

Some of our production locations in Brazil and Mexico are in so-called “water stressed areas”. Permits for water withdrawal for production are in some cases already restricted in these areas. If water

scarcity persists, this could worsen or spread to other regions.

Resource scarcity results in increased investment or costs for the technical modernization of production equipment. Furthermore, we are currently faced with more expensive electricity in Brazil. A large part of the country’s electricity supply comes from hydropower, so if water becomes more scarce, the risk of price increases exists. Such a development could also lead to electricity rationing which would put energy supply to the locations at risk. To help us to better estimate environmental risks in certain regions, we are launching projects which will assess, in advance, the extent to which a particular region is subject to a certain risk. The findings will provide an additional criterion for our decisions on awarding contracts to suppliers, in this way contributing to supply security.

#### Supply chains in light of climate change

To minimize and more effectively manage risks, the ZF Group is working on localizing sources. The objective here is to reduce transport costs and actively contribute to lower CO<sub>2</sub> emissions. Furthermore, this can limit the effects of failures in the supply chain to the region affected. We are also carrying out initial projects to identify robust methods for determining the emission values and environmental impacts of selected products and materials.

#### Solutions on product level

In an overall social context, ZF actually goes beyond the traditional route of research and development work. With the ZF Denkfabrik (think tank) founded in 2015, the company took a new direction to identify trends, technologies and future issues, and to apply them to relevant areas within the Group. There is an equal focus here on energy, sustainable mobility and improving the quality of urban

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living. The ZF Denkfabrik was established to create new perspectives of the distant future and to support the company in designing sustainable developments and creating added value for our customers.

ZF generates a substantial proportion of its sales with products used in the combustion engine driveline. The progressive electrification in the passenger car and commercial vehicle drive segment is representing a competing technology. ZF is developing electric, electronic and mechatronic competence to be prepared for this technology trend with its E-Mobility Division.

The development of competitive products has opened up new sales opportunities for ZF. At the same time, a possible increase in fuel or energy prices may result in an increase in logistics costs and a decrease in the demand for individual mobility on the market side. We can mitigate this risk with innovations in hybrid technology, e-mobility, and lightweight design. For more information about ZF solutions see chapter Product Responsibility on page 72.

#### Further influences

The opportunities and risks for our wind power sector vary widely since business development is still heavily dependent on subsidies and overall development on emission related regulations supporting renewable energies.

European companies are facing higher organizational costs due to the obligation and the expanded requirements for statutory and regulatory reporting. The EU directive on the disclosure of non-financial information can be seen as the main driver in 2016/17. This ambitious legislation requires around 6,000 large companies listed on EU markets, or operating in the banking and insurance

sectors, to disclose relevant environmental and social information in the management report, with the first reports to be published in 2018 (on financial year 2017). Member States had to finalize the transposition into national legislation by December 2016. Finally, suitable precautionary measures must be taken to minimize the diverse and often increased risks. We are also addressing identified risks with our environmental management system and our sustainability program has set respective environmental targets.

## Responsible Governance

ZF Friedrichshafen AG is a non-listed corporation with two foundations as shareholders. The corporation is subject to the provisions of the German Stock Corporation Act that stipulates a dual management system comprising the Board of Management and Supervisory Board. ZF Friedrichshafen AG is led by the Board of Management, which manages the company, and by the Supervisory Board, which monitors the Board of Management. For the most part, the activities of the Board of Management are strategic in nature and comprise both the responsibility for the corporate functions and the divisions. The implementation of the decided strategies is in the responsibility of the divisions and the corporate functions.

On October 1, 2016, the Board member for Corporate Quality, Commercial Vehicle Technology and South America retired. His corporate functions were distributed among the other Board members. Accordingly, the ZF Group Board of Management comprised seven members as of the end of 2016.

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The supervision of the Board of Management by the Supervisory Board, whose 20 members are appointed with equal representation, is supported by an Executive Committee and an Audit Committee which are both composed of members of the Supervisory Board.

ZF is set up along the lines of a matrix organization which links the Groupwide competencies of the corporate functions with the global business responsibility of the divisions and their business units. The domains of the ZF Group are headed by the members of the Board of Management. In a dual responsibility the members of the Board of Management are supervising the seven divisions. The same applies to the responsibilities with regard to the Regions of North America, South America and AsiaPacific.

The supervisory board and its committees are nominated and voted based on the ZF Corporate Governance Code. In particular, the Executive Committee handles strategic topics key personnel matters. The Audit (Committee supervises the Annual Financial Statements as well as the topics of compliance, internal audit, and planning. Three of the twenty members of the Supervisory Board are women. Three members of the Supervisory Board are non-German nationals. The maximum term in office for the members of the Supervisory Board are five years in order to ensure their independence.

The scope of the risk management is to identify and assess risks as early as possible and to mitigate such risks by initiating appropriate measures. The regular analysis of identified risks increases risk awareness and enables continuous improvement. The Board of Manage-

ment is responsible for the risk management system and reports to the Audit Committee and the Supervisory Board about the major existing risks on a regular basis. The ZF risk management system is regularly audited and assessed in terms of compliance by Internal Auditing. In addition, the external auditors annually check ZF's early detection system for risks.

The risk management system is set out in a ZF Group Directive, which was approved by the Board of Management and which can be accessed by all employees. This Group Directive describes processes and responsibilities of the risk management system. Risk areas are defined as structural elements along the value added chain, including risks such as quality, sales, procurement, restructuring, location and other risks. Risks are captured, assessed and tracked on the basis of these risk areas. The directive is regularly reviewed and updated and is binding for all ZF Group companies.

Risks are captured, assessed and tracked quarterly by the reporting units. The identified risks are combined on division and Group level and tracked in coordination with the responsible corporate function department. The ZF risk management system captures risks in terms of their potential financial impact in connection with their probability of occurrence where these risks exceed a limit defined by the Board of Management. Essential risks that exceed a defined threshold are brought to the attention of the responsible party or person via an adhoc reporting process. This enables ZF to initiate effective risk control measures. Opportunities are included in the ZF risk management system if they have a direct material link to a risk.

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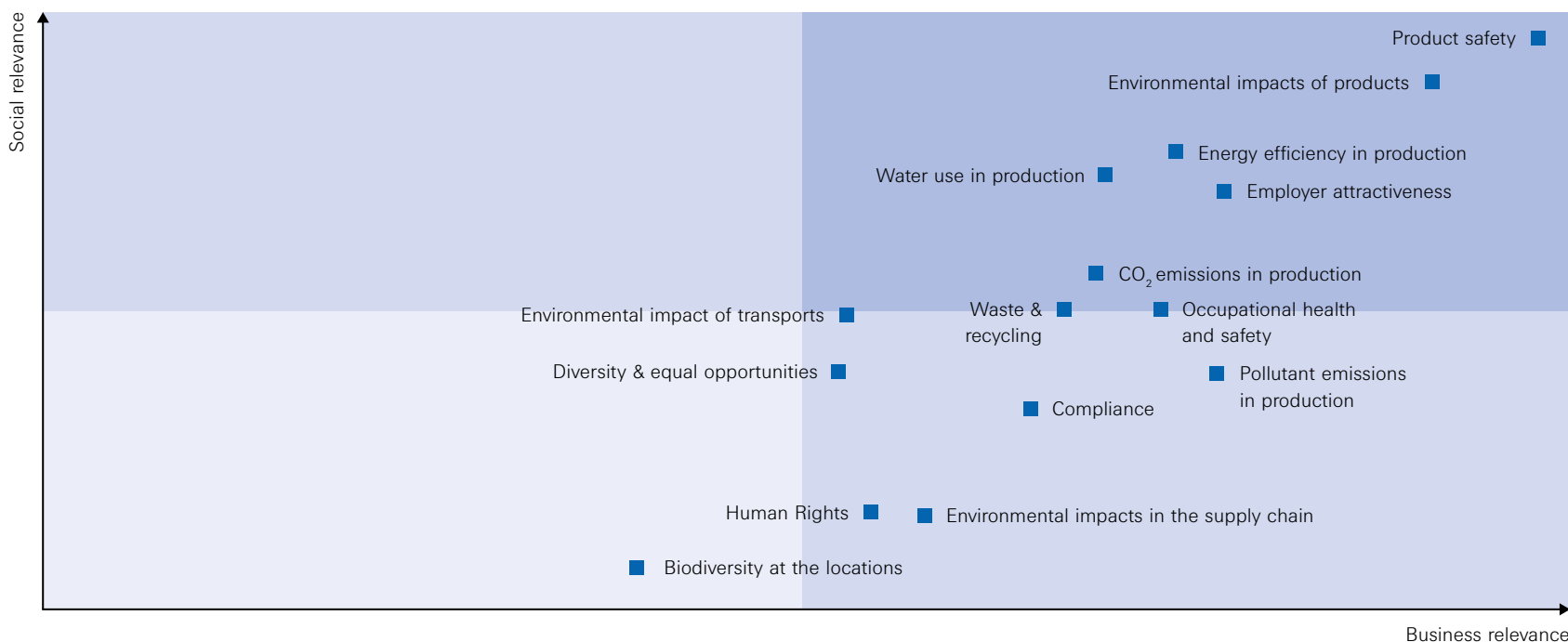
## Materiality

This year's materiality analysis remains unchanged compared to our 2014 Sustainability Report. Once the integration of ZF TRW has been completed, the ZF Group will review boundaries, topics and materiality with its stakeholders. Nevertheless, ZF TRW's performance has been included in the report with the KPIs available and measures undertaken.

To determine the report's content, ZF followed the G4 guidelines of the Global Reporting Initiative (GRI). The company performed a

materiality analysis which identified the sustainability topics important for the company, and assigned these to the relevant GRI aspects. The essential topics were determined using an impact assessment, further backed up by a media analysis and assessed in terms of medium and long-term relevance for ZF. Topics classified as relevant from both a social perspective as well as regarding their importance for ZF's business success are reported on as fully as possible with regard to the GRI requirements. GRI aspects assigned to other topics are only included in this report if they have a significant business relevance for ZF.

### Prioritization of fields of action according to social and business relevance



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In the reporting year, the Engineered Fasteners & Components Business Unit was sold. Cherry GmbH (including its subsidiaries) was also sold to the German private investment company GENUI in October 2016. Moreover, at the end of 2016, an agreement was entered into with Voit Automotive GmbH for the sale of 51 percent of the shareholding in ZF Fonderie Lorraine S.A.S. In 2016, we founded Zukunft Ventures GmbH which has already concluded initial and very promising joint ventures with Ibeo and doubleSlash. This will result in only slight changes with regard to the environmental key figures, Scope and Aspect Boundaries.

In addition to ZF Friedrichshafen AG, 22 domestic and 250 foreign subsidiaries controlled by ZF Friedrichshafen AG are included in the consolidated financial statements. The Group structure with seven divisions is in line with the market and customers. The seven divisions are:

- Car Powertrain Technology Division
- Car Chassis Technology Division
- Commercial Vehicle Technology Division
- Industrial Technology Division
- E-Mobility Division
- Active & Passive Safety Technology Division
- ZF Services and TRW Aftermarket have been managed as the ZF Aftermarket Division since January 2017

More detailed information about entities belonging to the Group can be found in the 2016 Annual Report on pages 74 and 124.

Since January 1, 2016, ZF has centralized the Purchasing Organization with the clear goal of bundling its volumes and integrating parts family strategies in order to optimize the cost of parts in supply chain management and transport. Our cross-functional Sourcing Decision Board makes unanimous decisions which enables us to ensure that not only price is paramount but also to consider total costs and environmental aspects when selecting suppliers.

We are continuing activities in our Global Procurement Offices in Mexico, India and China. The objective here is to realize the “local for local” concept with our existing strategic suppliers or to prepare and develop the local supplier base to meet ZF-specific requirements.

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Material topics	GRI aspects of reporting [■ G4-19]	Materiality within the organization [■ G4-20]	Materiality outside the organization [■ G4-21]
	<ul style="list-style-type: none"> <li>- Economic performance</li> <li>- Procurement Practices</li> <li>- Indirect economic impacts</li> <li>- Overall</li> </ul>	ZF Consolidated Group	
Product safety	<ul style="list-style-type: none"> <li>- Customer health and safety</li> <li>- Product and service labeling</li> </ul>	ZF Consolidated Group	Customers
Environmental impacts of products	<ul style="list-style-type: none"> <li>- Products and services</li> <li>- Energy</li> </ul>	ZF Consolidated Group	Customers
Energy efficiency in production	<ul style="list-style-type: none"> <li>- Energy</li> </ul>	ZF Consolidated Group	
CO <sub>2</sub> emissions in production	<ul style="list-style-type: none"> <li>- Emissions</li> </ul>	ZF Consolidated Group	
Water use in production	<ul style="list-style-type: none"> <li>- Emissions</li> <li>- Water</li> <li>- Effluents and waste</li> </ul>	ZF Consolidated Group	
Environmental impacts of transport	<ul style="list-style-type: none"> <li>- Transport</li> <li>- Emissions</li> </ul>	ZF Consolidated Group	Logistics service providers and suppliers
Waste and recycling	<ul style="list-style-type: none"> <li>- Materials</li> <li>- Effluents and waste</li> </ul>	ZF Consolidated Group	
Pollutant emissions in production	<ul style="list-style-type: none"> <li>- Emissions</li> </ul>	ZF Consolidated Group	
Employer attractiveness	<ul style="list-style-type: none"> <li>- Market presence</li> <li>- Employment</li> <li>- Training and education</li> <li>- Labor-management relations</li> </ul>	ZF Consolidated Group	
Occupational health and safety	<ul style="list-style-type: none"> <li>- Occupational health and safety</li> </ul>	ZF Consolidated Group	
Diversity and equal opportunities	<ul style="list-style-type: none"> <li>- Diversity and equal opportunities</li> <li>- Equal remuneration for women and men</li> <li>- Equal treatment</li> </ul>	ZF Consolidated Group	
Compliance	<ul style="list-style-type: none"> <li>- Anti-corruption</li> <li>- Anti-competitive behavior</li> <li>- Compliance (society)</li> <li>- Compliance (environment)</li> </ul>	ZF Consolidated Group	
Human Rights	<ul style="list-style-type: none"> <li>- Supplier assessments for impacts on society</li> <li>- Investment</li> </ul>	ZF Consolidated Group	Suppliers
Environmental impacts in the supply chain	<ul style="list-style-type: none"> <li>- Supplier environmental assessment</li> </ul>	ZF Consolidated Group	Suppliers

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## Engaging Stakeholders

There are many significant stakeholders at ZF, including employees, customers, suppliers, the owners of the company, authorities, trade unions, associations, the media and politicians as well as the business partners and the residents at the locations. An increasingly important group includes the next generation of employees, which is why schools, vocational schools, universities of applied sciences, universities and scientific institutes can be found at the top of the list of stakeholder groups to be involved. As a B2B company, ZF has rarely been in direct contact with national, non-governmental organizations (NGOs) that represent ecological and social issues. However, as is the case with local environmental initiatives that are often in direct communication with the location managements, these NGOs equally belong to the stakeholder groups that we consider to be important.

To ensure that we involve a broad and representative range of stakeholder groups in the compilation of our materiality analysis, we performed an international media analysis during the reporting period. The objective of this analysis was to filter out the most important stakeholder interests and the main topics and concerns from global social media, trade publications and press reports on sustainability in the automotive industry. The findings of this analysis were directly applied to the materiality analysis.

### Identifying and selecting stakeholders

Companies that act in a sustainable manner should be aware of the interests of their stakeholders. As a first step, a discussion was initiated with relevant stakeholders in order to identify the significance of various sustainability issues from both an external and internal perspective. An analysis of the results from an initial stakeholder survey

### Types of stakeholder communication (groups and the media)

Employees	"we>move" employee magazine, Intranet, Internet, internal communication campaigns such as "Year of Energy", ZF Family Day, ZF hilft
Potential employees	Cooperations with universities, Annual Report, "Drive" company magazine, ZF website, involvement in trade fairs, social media, advertisements
Customers	Annual Report, "Drive" company magazine, ZF website, brochures, advertisements, customer days, involvement in trade fairs
Suppliers and partners	Annual Report, "Drive" company magazine, ZF website, involvement in trade shows, advertisements, supplier days, brochures, key purchasing strategy
Politics, associations, interest groups	Annual Report, ZF website, personal discussions
Educational institutions	Cooperations with universities, Annual Report, ZF website, involvement in trade fairs, advertisements
Press and the media	Annual Report, ZF website, "Drive" company magazine, press releases, press conferences
Communities	ZF Family Day, press, ZF website, advertisements, sponsoring, regional trade shows such as the International Lake Constance Trade Fair (IBO)
Former employees	"Drive" company magazine, ZF Family Day, International Lake Constance Trade Fair, ZF website, ZF pensioner association
End customers	Annual Report, involvement in trade fairs such as International Motor Show, North American International Auto Show, "Drive" company magazine, ZF website, brochures, advertisements, social media

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indicated which topics must be taken into account and what needs to be done in order to retain the lasting trust of customers, employees, suppliers and society as a whole. As part of the materiality analysis on reporting in compliance with the GRI G4 guidelines, the company also set out to systematically integrate stakeholder interests into defining priorities for the field of sustainability in 2014. Also talks were conducted with customer and association representatives, among others.

#### Approach to stakeholder engagement and frequency

ZF is in regular contact with its stakeholders through the following channels: the German Global Compact Network, personal contact with residents at company locations, the media, customers and suppliers through direct discussions as well as through surveys concerning topics such as sustainability, employees via the works council as well as through internal events and Group media.

#### Key topics and concerns raised through stakeholder engagement and response

We have identified the most important issues from the stakeholders' perspective using the materiality analysis. Apart from product safety, they included the environmental impact of our products, processes and employer attractiveness.

The other expectations and requirements that are presented to ZF are always widely similar: They include acting in accordance with the law and regulations, developing excellent and efficient products for the customers and demonstrating responsibility for employees, the environment and, increasingly, also in the supply chain. The requirements of the next generation of employees that are reflected in ques-

tions about values, future orientation, development opportunities and working conditions are also particularly important to us. We also wish to address them in this report.

## Living Integrity

ZF is one of the world's leading technology companies and compliance is an essential element of successful management and good corporate governance. It represents an obligation and an incentive to conduct reliable and respectful dealings with customers, business partners, employees, and the environment. Compliance also forms the platform for lasting cooperation in an atmosphere of trust.

#### ZF Compliance

Compliance with existing laws is a major component for business and sustainable success. We rise to the challenge posed by globalization. This requires law-abiding, honest and responsible behavior on behalf of our employees at all levels and in all areas as the core value in our corporate culture. The Compliance Management System gives guidance and supports the employees worldwide to fulfill this expectation. This entails preventing misconduct and ensuring that risks to the integrity and lawfulness of our actions are

- identified in advance and in a timely manner,
- prevented through suitable measures,
- correctly responded to if such risks materialize, and subsequently
- required to identify the causes in order to prevent recurrence.

ZF communicates the relevant rules proactively to its employees, for example the Code of Conduct (CoC) or the Compliance Regulations.

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## Code of Conduct

The Code of Conduct establishes binding principles for the ZF Group in its dealings with business partners and the environment. It also defines binding principles for correct, law-abiding, and ethical behavior. Subjects covered include adherence to laws, fair competition, anti-corruption, business and social responsibility, occupational safety, data protection, and transparency. The Code of Conduct as a core element of the Compliance Management System (CMS) is available in all languages in which ZF conducts business and is communicated through different channels depending on the specific target group. Managers at every level – from the top and down – are decisive for the compliance culture in the company. Therefore they have to confirm to have received and will follow the principles of the CoC. Their obligation is to act as role models, which is clearly stated.

## Compliance Regulations

The Compliance Regulations describe rules governing anti-corruption and antitrust law. They also define the correct approach for correctly handling favors, gifts, and hospitalities (FGHs). The following topics are covered by the regulations:

- Responsibilities, tasks, and authorities of the Compliance Organization
- Rules for lawful and responsible behavior
- Ban on corruption
- Business partner integrity
- Rules on handling favors, gifts and hospitality
- Correct behavior in competition

- Contacting the Corporate Compliance Office and reporting incidents

## ZF Compliance Management System

The ZF Compliance Management System (CMS) has created the framework for meeting these requirements. The objective of the CMS is to ensure compliance with internal and external regulations. Compliance focuses on preventing and investigating violations in the areas of

- Corruption,
- Antitrust law,
- Extensive fraud and
- Reputational damage.

The CMS meets the following requirements: independence and effectiveness of the Compliance Organization, integration of compliance into business processes, transparent decision processes, and corresponding HR processes (sanctions). The focus of the CMS is on prevention, detection and reaction. The Compliance Organization is set up in line with the organizational structure of the ZF Group.

## ZF Compliance Organization

Prevent	Detect	Respond
<ul style="list-style-type: none"> <li>▪ Risk analysis</li> <li>▪ Regulations</li> <li>▪ Communication</li> <li>▪ Training</li> <li>▪ ComplianceHelpdesk</li> <li>▪ Business partner due diligence</li> </ul>	<ul style="list-style-type: none"> <li>▪ Notification</li> <li>▪ Investigation</li> <li>▪ Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Deriving actions</li> <li>▪ Sanctioning misconduct</li> <li>▪ Actions relating to monitoring</li> </ul>

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In the reporting year two legal actions were pending following two events: In South America, the antitrust authorities searched a ZF plant on suspicion of the infringement of competition rules in September 2014. In Germany, the antitrust authorities concluded a dawn raid in June 2016 among various companies including ZF.

### Compliance tools

The ComplianceHelpdesk serves as a preventive function since questions can be systematically clarified and documented in advance. If compliance related questions or uncertainties arise, any ZF employee can contact the ComplianceHelpdesk. The preventive elements as legal consulting services, training and communication measures, and business partner audits are complemented by a case management system. It is connected to the ZF Trustline, an electronic notification system which employees and third parties can use to anonymously report suspected serious misconduct. Such cases might include violations of competition and antitrust law, health protection, occupational safety, corporate security and environmental protection, or cases of corruption and conflicts of interests. As in the previous year, no confirmed incidents of corruption occurred.

ZF developed an internal risk analysis process for compliance risks. The main focus of this risk analysis is on antitrust and corruption. The new risk analysis process is performed at Business Unit level. This focus results from the divergent business models and is intended to achieve more precise results. The objective of this analysis is to identify and assess, on the basis of the risk profile of ZF, compliance relevant risks at an early stage and to counteract them. Business partners can pose a compliance risk if their actions or failures to act can

be attributed to ZF. Business partners who are involved in corruption or are guilty of other illegal business activities also represent a compliance risk for ZF. As a result, ZF could be held liable if no suitable precautionary measures were taken, for example to prevent bribery. All business functions of our company are therefore obliged to take appropriate measures – preferably before business relations with a partner are taken up – to ensure that the business partners are adequately assessed and instructed. As part of ZF’s policy regarding bribery, corruption, and violations of antitrust laws, a business partner due diligence process is set up and an appropriate guideline was published in 2015. This guideline describes the business partner due diligence process and is an addendum to ZF’s Business Partner Principles.

### Compliance communication

News and information sharing on compliance issues raise awareness among employees and communicate values and expectations on employee conduct. A range of communication measures ensure that compliance is firmly anchored within ZF’s culture. Employees are continuously informed about current compliance topics through newsletters, a compliance page and other channels. As a main communication channel, our intranet provides access to necessary compliance contacts and important documents such as guidelines, Business Partner Due Dilligence, the Code of Conduct, and our Business Partner Principles. They are available in several languages.

In addition to the Code of Conduct, new and returning employees in China received a welcome package in 2016 presenting relevant compliance information. Positive feedback has encouraged the worldwide roll-out of the welcome package scheduled for 2017.

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As multipliers of compliance managers are responsible for regularly providing employees with information about compliance. In 2016, Compliance therefore deployed a new video about “General Compliance at ZF” as refresher for employees and a video about “Business Partner Due Diligence”.

**Training opportunities**

ZF has integrated target-group-oriented compliance training courses into its training concept. The objective of the training program is to firmly anchor compliance in employees’ consciousness and prevent wrong-doing. The courses convey knowledge and promote the ability to act in critical situations. Target groups can be addressed using different solutions, depending on the necessities of a topic.

Classroom training gives participants the opportunity to directly exchange ideas and experiences on compliance-relevant topics and issues. In 2016, face-to-face training sessions were offered in a number of countries such as China, Brazil, Argentina, Germany, France, Italy and South Korea.

Online training serves to convey broad, general knowledge to all employees. Online training for the Code of Conduct is available on the intranet and should be completed by all new employees. ZF offers online training courses on the following topics to prevent the risk of infringement: international anti-bribery principles, financial integrity, and antitrust law. In the reporting year approximately 13,000 employees completed these training courses.

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# PEOPLE

As part of the changing market environment, ZF is responding to megatrends, strong growth in the Asia-Pacific region and North America, technological and demographic change, and worldwide population growth. At the same time, highly qualified personnel are key to the company's long-term success. Therefore, attracting and systematically further developing talented personnel is one of ZF's major challenges. That is why ZF is positioning itself as a globally attractive employer.

ZF is the right place to be for highly qualified employees who enjoy taking on new responsibilities. Our employees are typically geared toward achieving results, growing their career and developing personal skill sets. As a result of the acquisition of U.S.-based TRW Automotive, we now offer many diverse international opportunities for nurturing professional development, cultivating teamwork and developing intelligent mobility solutions for tomorrow.

## Growing together

As part of integrating the two companies and growing together, we are currently focused on developing and implementing several global functions, starting with the top leadership. Our teams are not only focused on developing integrated organizations, but also on creating new, integrated processes that make day-to-day activities and communication with team members more open and flexible.

Sharing experiences and working together is fundamental in supporting the integration process. That's why the "Intercompany Mobility Initiative" was launched in 2016. As a first step, this program gave a number of managers and non-managerial employees at various levels the opportunity to move from ZF to ZF TRW or vice versa and is thus contributing to the development of a common leadership and company culture.

## Preparing for future challenges

We have been consistently realizing our long-term goals set forth in our ZF 2025 Strategy. After the acquisition of TRW Automotive, in particular, however, we are improving the way we work together. The ZF Management System (ZF MS) provides both the theoretical guidance and practical instructions to make this happen.

Following the best-of-both approach, we have also aligned our principles and management systems. The new ZF Management System aims at shaping our way of working in terms of speed, simplicity and target focus. To become the leading technology and systems supplier to the automotive industry, we are not just harmonizing, but refocusing our management systems. This will enable us to more easily take advantage of current and future opportunities in our targeted markets.

Being a core element of the ZF MS, the four equally important principles "Innovation Approach," "Customer Focus," "Commitment to People" and "Result Orientation" form the ZF Charter and define what is important to us and how we do business. The ZF Charter unites the strengths of ZF and ZF TRW, combining their existing values. It thus supersedes ZF's "GiveMe5" and TRW's "Core Principles."

The combined principles provide direction and guidance regarding necessary behavior and the required mindset for every ZF employee. The principles define what we regard as important, what we do and what makes us special:

- Innovation Approach: We develop pioneering products and technologies that help us achieve our strategic goals – and are financially rewarding. Our employees and business units alike all strive

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- to develop innovative and creative solutions. We think like entrepreneurs. This also means we take risks and learn from our successes and failures.
- **Customer Focus:** We win over our customers with our quality and our passion, offering them clear added value. This applies to internal and external customers alike. At the same time, we always aim to be profitable – and act accordingly, in every part of our organization.
  - **Commitment to People:** We support and encourage our employees in the fulfilment of their duties and responsibilities. In return, we expect commitment and performance. We provide constructive feedback and foster a culture of trust.
  - **Result Orientation:** We set ourselves challenging goals and measure what we achieve. We deliver as promised, and value agility. By finding the right balance between quality and speed, we ensure that we succeed in what we set out to do.

Existing management systems like the ZF Quality Management System or various HR systems are not being replaced or superseded. But in time they will be progressively aligned with the requirements of the overarching ZF Management System.

## ZF Group around the globe

On December 31, 2016, ZF employees worldwide numbered 136,820. This represents a change of -1.05 percent compared to the previous year. The slight decline in the number of employees compared to the previous year can be primarily traced back to the sale of the Engineered Fasteners & Components Business Unit concluded in July 2016. This business unit had roughly 2,800 employees worldwide. In addition, Cherry GmbH (including its subsidiaries) with a workforce of approximately 400 was sold in October 2016 to the German private investment company GENUI. ZF created approximately 1,800 new jobs last year, which equals growth of 1.3 percent.

Almost two-thirds of the Group’s employees work in Europe, most of them in Germany, and 97.8 percent of employees have permanent contracts with the ZF Group. The percentage of women employed by the ZF Group (not including ZF TRW) is 15.74. The North America region has the largest percentage of women in the workforce at 26.02 percent. Gender is not currently traced according to region or type of contracts for ZF TRW.

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## Employee structure worldwide

### Employee structure worldwide

Number of people<sup>1</sup>

	2016 (incl. ZF TRW)	2015 (incl. ZF TRW)	2014 (excl. ZF TRW)
<b>ZF Group (total)</b>	<b>136,820</b>	<b>138,269</b>	<b>71,402</b>
Europe	81,667	82,789	50,774
of which Germany	49,094	50,131	41,188
North America	31,900	31,550	8,342
South America	5,118	5,428	4,106
Asia-Pacific	16,974	17,327	7,786
Africa	1,161	1,176	394
<b>Employee category<sup>2</sup></b>			
Direct	72,109	73,371	34,790
Indirect	64,711	64,898	36,612
<b>Work contracts</b>			
Permanent	133,802	135,600	68,587
Temporary	3,018	2,669	2,815
Full time	134,339	135,962	69,388
Part time <sup>3</sup>	2,481	2,307	2,014
<b>Apprentices and temporary workers</b>			
Apprentices	2,800	2,300	2,073
Temporary workers (external)	14,137	14,224	3,638

<sup>1</sup> Excl. ZF Lenksysteme, number of employees by contracts in accordance with IFRS regulations until the end of the year

<sup>2</sup> Direct and indirect participation in value creation processes

<sup>3</sup> Because of the low numbers of part time contracts at ZF TRW data were not collected

## Tackling demographic change

Germany's population structure is changing. People are getting older and there are fewer births with each generation. At the same time, society is becoming more diverse – not least due to the marked increase in immigration. While the average age in Germany was approximately 38 years in 1995, it has meanwhile increased to over 45. This makes Germany the country with the second-oldest population after Japan.

### Different regional challenges

From a global perspective, demographic change comes in many different forms. While western industrialized countries are primarily confronted with the challenges of an aging population, people in developing and newly industrialized countries are much younger. In India, for instance, the average age is 26.6 years. Since ZF is a global player with approximately 230 locations in 40 countries, the age structure of the company's workforce is very heterogeneous and strongly depends on the history of the particular ZF location. The percentage of older employees is much higher in Germany, whereas international locations employ younger people.

### ZF Employees by region and gender in 2016

(excl. ZF TRW) in percent

	Women	Men
Europe	13.81	86.19
of which Germany	13.01	86.99
North America	26.02	73.98
South America	8.51	91.49
Asia-Pacific	18.89	81.11
Africa	15.07	84.93
<b>Total</b>	<b>15.74</b>	<b>84.26</b>

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This requires individual actions to be taken to match local requirements. In Germany, ZF is pursuing a comprehensive approach to deal with the challenges of an aging workforce. For example, workplaces are being designed to accommodate the requirements of an aging workforce and emphasis is placed on finding the right work-life balance between career and family. ZF is also focusing on health management, flexible working time models and lifelong learning.

### Employer attractiveness

ZF is looking for qualified experts in all markets. Once hired, they enjoy attractive working conditions and qualification opportunities at all our company locations worldwide. Global market opportunities mean that ZF strives to be a valued, fair and reliable employer. The varied cultural backgrounds of our employees, their competencies and their diligence and motivation are shaping our corporate culture and they are the key to our success.

### ZF Employees by gender

(excl. ZF TRW)

	2016	2015	2014
Men	61,768	62,678	60,549
Women	11,537	11,483	10,853

### Employee turnover for 2016

as percent of headcount

Europe	4.6
North America	22.2
South America	2.2
Asia-Pacific	10.3
Africa	2.7

Due to changing mobility habits, employees and graduates in the software and IT fields are becoming increasingly relevant for the automotive industry. In order to develop and produce intelligent mechanical products, ZF still requires employees from traditional occupations. However, the HR Department is also increasing its global activities in attracting graduates with IT and electrical engineering degrees or those who have completed vocational training in these fields. A further employer branding action in 2016 aimed at increasing the brand recognition of ZF as an employer in the China and U.S. growth markets. ZF has continued to improve its placement in the employer rankings in Germany over the last few years. Among prospective engineers, ZF placed 16th in the “Trendence Graduate Barometer 2016” survey while, in engineering, it rose from 26th in 2015 to 24th place in the “Universum Student Survey”.

### Flexible working conditions

In the face of volatile markets, flexible working time models such as working time accounts, temporary employment contracts and agency work are important tools to compensate for and mitigate fluctuations in demand and sales. In 2016, ZF had a total of 14,137 temporary workers, most of whom (89.29 percent, or 12,623) worked abroad.

But new working time concepts are not simply intended to help ZF balance its workforce. The potential for promoting the well-being of employees and helping them to find the right work-life balance between career and family have become increasingly important. We value individual development opportunities and compatibility between work and family. We are working systematically on creating family-friendly working structures that support time-management models and offer generous flexibility to assist parents.

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Support for parents is something we cherish at ZF which is why we built a ZF children's daycare center with about 60 places for employee children. Since 2006, ZF has been positively ranked among certified family-friendly companies in Germany, represented by the Friedrichshafen location. Specific examples of employee support include full daycare at children's daycare centers, special vacation programs and support in caring for family members. ZF also offers a variety of part-time working models, sabbaticals and mobile working possibilities to support the balance between career and family and caring for family members. As a partner of Success Factor Family, ZF is involved in a joint initiative by the Federal Ministry for the Family and the German Chamber of Commerce. The network is a platform for mutual exchange and dialog between companies, administration and the public to raise awareness of the need for a family-friendly working environment. Our worldwide locations have various forms of flexible working conditions to support the needs of employees. These include flexible start and end times, the ability to work from home, time off to address family and health needs, to name a few.

At the end of December 2016, a total of 410 employees took parental leave in Germany (not including ZF TRW), of this number, 91 were male and 319 female. A total of 214 female employees returned from parental leave and 1,189 male employees took parental leave for a short period of time.

Internal agreements were concluded within the company on remote working and were rolled out at all German locations in 2016. These allow employees to spend a certain amount of working time each week outside their company-based workplace. It aims to improve the work-life balance while also increasing the appeal of ZF as an employer.

### Office 3.0

The new corporate headquarters called the ZF Forum perfectly reflects the increasing digitalization of the working world. It offers a variety of work environments that support team and individual work, meetings, telephone calls, work requiring total concentration and collaborative work. Mobile IT technology makes it easy to switch quickly between these different working needs. Technological capabilities have enabled the company to take a flexible non-territorial approach where workspace is shared. A relaxed atmosphere replaces individual desks to create a sense of personal freedom. ZF worked together with the Fraunhofer Institute for Industrial Engineering IAO in Stuttgart and in close consultation with the works council to develop and shape this office concept based on the latest workplace and ergonomic findings. Approximately 650 employees in the central departments are the first to work in the new Office Concept 3.0 environment. Currently, the possible rollout of this concept at other ZF locations is being reviewed and a decision will be made in due course.

### Project: "Next Generation Intranet (NGI)"

Developing an agile, modern, digital working platform is an important step toward achieving the objectives of our ZF 2025 Strategy. Employees can use digital tools to find information, work together on solutions and brainstorm in teams faster and easier than ever before. Implementing a state of the art intranet supports maintaining and enhancing the company's competitiveness and sustainability. It offers all employees a powerful platform for working together across the globe in real time – regardless of location, organizational unit or hierarchical level. The new intranet will include online workspaces, project management tools, communication forums, feedback options and many other useful features.

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## Lifelong learning

Individual and organizational development, qualification and lifelong learning are decisive success factors when it comes to securing a company's long-term future. Our employees require the right skills in order to guarantee that we retain the power of innovation. That is why ZF places importance on digital learning, flexible working and cooperation in networks. ZF employees can choose from a wide range of advanced qualification opportunities.

### Apprenticeship

ZF places a great deal of importance on education and training, resulting in improved qualifications. In 2016, about 550 young people started an apprenticeship or dual study program at ZF, amounting to 2,800 apprentices (Dec 2016) at more than 16 locations in Germany. Around 15 percent of them are students completing a dual study program at a university. This young target group can choose from 31 different apprenticeships and DH courses of study.

Once again, ZF Friedrichshafen AG ranked among Germany's major providers of training and apprenticeship opportunities. ZF is keen to offer all its apprentices a job after they qualify and most graduate apprentices continue working for ZF after they have completed their apprenticeship training.

Increasing digitalization and connectedness in production are making their way into companies under the moniker "Industry 4.0" and it is changing the requirements for apprenticeship. ZF set up a cross-divisional project team to analyze new requirements and qualifications affecting apprenticeships and to identify solutions for dual education programs. As a result of this project, ZF is going to integrate new con-

tent specifically focused on electronics and IT into the internal apprenticeship program. The Group will also add new job profiles to the current portfolio.

#### Ready 4 future

Committed to change, the Group has set up the "Ready for Future Technology" project – R4FT. Its purpose is to build up and expand development competences for future technologies in the segments of electromobility, autonomous driving, safety and intelligent mechanics. Thousands of engineers are needed in the near future and a prerequisite to master the ongoing megatrends. With ZF's long-term experience in vocational training, continuing education and strong network in higher education, we intend to nurture a big number of the needed developers and research engineers from within the company.

The internationalization of apprenticeships is also becoming more important for the ZF Group as a whole and there are several initiatives to expand the apprenticeship model outside of Germany.

At its Gray Court (South Carolina, USA) location, ZF has teamed up with the Piedmont Technical College and launched an apprenticeship program similar to the German model of combined degree programs within service-training. Apprentices are assigned mentors at the facility and receive intensive on-the-job training, supplemented by a specially designed curriculum at Piedmont Technical College. In the future, the training program will be extended to other ZF locations.

ZF remains one of the three founding companies involved in introducing the Michigan Advanced Technician Training (MAT<sup>2</sup>) program. The program was developed based on German training stan-

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dards and monitored by the German-American Chamber of Commerce and the German Chamber of Industry and Commerce (IHK). ZF is currently involved in the apprenticeship programs for the professions of mechatronics technician, IT specialist, and technical product designer at various locations, e.g. in Northville and Lapeer, Michigan. We are also involved in Vernon Hills, Illinois, with a similarly modelled programm called ICATT. The dual apprenticeship training program offers apprenticeship as Industrial Maintenance Technician. MAT<sup>2</sup>® has the potential to become established as a national standard.

In Europe, ZF is involved in several twin-track education programs based on the national standards applicable for each country, for example in France, the United Kingdom and Austria. In 2016, the ZF dual education center was officially opened in Trnava, Slovakia.

#### Further education

ZF is committed to developing people, management and the organization by focusing on various layers and target groups and it invests accordingly. Talent management, learning and development, educational enhancement and enrichment, and competency management are supported and strategically developed. Applying this holistic approach to management enables us to systematically monitor and anticipate workforce issues in all corporate areas. This, in turn, allows us to consolidate the capabilities of our employees and respond to the challenges of demographic change.

The Global ZF Campus promotes advanced specialized training opportunities for managers and employees in all corporate functions. The objective is to achieve systematic and global advanced training of employees with technical training programs derived from the ZF

2025 Strategy. Various internal ZF academies offer employees in Materials Management, Quality, Finance, IT, Sales, Production, and other associated functions an extensive range of advanced training opportunities. In the future, we will expand these learning opportunities by setting up additional academies.

The key objective of the ZF Academies is to support the implementation of corporate function strategies through global, systematic, standardized and comprehensive enablement of ZF employees and leaders with dedicated functional and cross-functional learning programs. The target audience includes all employees and leaders that are either directly linked to a corporate function or execute a corporate function role as part of their job in a division. Target groups are cross-divisional, cross-location as well as international. The academy course portfolio is tailored to the functional and cross-functional learning needs, thus establishing a globally consistent standard of knowledge and expertise.

#### Improving qualification programs

All training programs are systematically evaluated. Participants and trainers submit an evaluation after every event as part of a continuous improvement process. The individual evaluations form the basis for regular reviews and appropriate revisions. We select external service suppliers such as training course providers and trainers according to defined criteria and a tough selection process carried out jointly by the specialist department and Purchasing.

The corporate HR Development and the HR Development departments in the individual divisions, regions, and technical departments work closely together. They standardized operational processes in HR development and reinforce them permanently. By establishing

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cross-divisional working groups, we have closely coordinated all areas involved with the objective of effective employee and executive manager training and qualification at all locations.

We have again increased our international training capacities. For example, we intensified our cooperation with colleges and universities in China, the USA and several European countries. Further successes were also achieved in internationalizing our trainee program.

### Nurturing excellence

ZF emphasizes the importance of personal and professional development for all employees. Individual performance and development opportunities are discussed and documented on an annual basis according to the HR process cycle for non-managerial employees.

There is a different process in place for managers which enables Group-wide HR and succession planning and simultaneously ensures the evaluation of all managers using consistent performance and potential criteria. Due to the integration of TRW as the current Division A, a new potential and succession planning process is currently being redefined and implemented for all managers of the combined company for 2017 and onward.

We traditionally recruit management staff from within the company's own ranks. This also applies to the new Division A, formerly TRW, as well as to international locations. As a result of the integration of ZF TRW and the locations around the world, the management structure of the combined company has become even more international than before.

While ZF TRW was being integrated, ZF introduced a harmonized, more performance-oriented Short-Term Incentive (STI) program for managers in January 2017. The new system is intended to foster a culture of innovation and performance, resulting in a stronger target focus. This will help us to be even more successful as a combined company in the future. The Short-Term Incentive consists of key financial performance indicators and an individual component based on individual targets and personal performance. Assessing the company and individual components ensures a comprehensive evaluation of the results achieved throughout the year. The process is transparent and defines the framework for our actions and priorities, and for the behavior and attitudes we expect from the combined company's managers. The Individual Target Agreement and Performance Process (iTaP) has been moved to a cloud-based IT solution.

In order to strengthen the focus on a sustainable company development, ZF has extended the Long-Term Incentive Program (LTI) to include members of Management Group 2. The LTI was previously only applicable to the Top Management Group.

### Developing leaders

The corporate objective of becoming an attractive employer worldwide is promoted by the strategic pillars Leadership 2025, Competitive Work Environment and One Global Corporate Culture. Since leadership excellence is one of the strategic targets of the ZF Group, we revised all of our management development. A combined program was developed to replace the former ZF "Promotion Programs" and ZF TRW's high potential programs "Executive LEAD and LEAD". The new "ZF Global Leaders" signature program has been developed in 2016 and is offered in 2017.

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Over 13,000

children and youngsters have gained hands-on experience  
in the world of technology in the technical classrooms

It comprises level specific modules with a blend of in-person sessions, virtual learning, self-reflection tools, and peer group coaching as well as work on real cases. Main objective is to speed up ability to act when transitioning from one managerial level to the next. It demonstrates commitment to people and investment in developing leaders and managers, providing an orientation towards future challenges, as well as encouraging new ways of working together.

Managers experience business demands in strategic relevant regions. The ZF Global Leaders landscape creates multiple touch points with ZF top-management and external experts and allows maximum networking and learning opportunities.

Further targets are to support potential candidates with development opportunities to strengthen the company's leadership pipeline and to provide a global, consistent leadership development throughout the different management levels. It offers executive managers the opportunity to systematically prepare for the specific responsibilities of their new role and thus ensures management success within the company. By basing learning contents closely on the policies of the ZF 2025 strategy and future challenges, the leadership development landscape contributes to establishing and implementing the strategic objectives.

### Fostering partnerships

ZF makes significant investments in technical professions. We aim to promote interest and enthusiasm for MINT subjects early on among children and young people, with particular emphasis on girls. ZF is achieving this objective for instance by actively participating in the Girls' Day and running Knowledge Workshops ("Wissenswerkstätten"). The Wissenswerkstätten continue to be very popular. So far, more than 13,000 children and youngsters have gained hands-on experience in the world of technology in the technical classrooms.

In higher education, ZF finances a large number of endowed professorships in the Lake Constance region and across the world. Cooperation with renowned universities, for example at the Zeppelin University and the Baden-Württemberg Cooperative State University in Friedrichshafen, the University of Ravensburg-Weingarten, the HTWG Constance – University of Applied Sciences or the RWTH Aachen University is part of the young talent promotion program. China has become more and more important for future mobility trends. Since 2012, ZF endows a professorship for Car Chassis Technology and Dynamics at the Chinese German College for Postgraduate Studies (CDHK) of the renowned Tongji University in Shanghai. The chairholder, his colleagues, students and the ZF development departments regularly exchange information on mobility trends and technical questions concerning driveline and chassis technology. The emphasis is on networking and working together.

Furthermore, internships for students are available at ZF with the prospect of job offers at completion. Two bachelor graduates from Tongji University have also been accepted into ZF's scholarship program. ZF also supports the university's Formula Student teams.

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In 2016, ZF also strengthened the partnership with the international UNITECH Network as Corporate Partner. UNITECH International is an European network of top engineering schools and multinational companies. At the moment only eight schools from eight different countries are allowed to propose their 20 best students, of which only 10 will be accepted. Up to 80 students form the talent pool of UNITECH each year. The students then attend three coached modules of skill and capability development, a semester abroad at one of the Academic Partners and an international internship at one of the Corporate Partners.

#### ZF-Innolab

As part of expanding its long term commitment to cooperate with universities, ZF established an innovation laboratory at the Friedrichshafen campus of the Duale Hochschule (DHBW) Ravensburg. At the "ZF-Innolab" facility, DHBW students, under an apprenticeship contract with ZF, will conduct research on themes such as autonomous driving and digital business models.

The students at the "ZF-Innolab" work closely together with the "ZF Denkfabrik" think tank. This department is dedicated to identifying long term trends and new growth areas at an early stage. The Innolab deals with broad mobility issues internationally and across all modes of transportation. It also explores new business segments that may be turned into viable business models over the long term. Work at the Innolab follows the "open innovation" approach of the think tank, which connects different knowledge areas and players with technologies. The Innolab is therefore a logical addition to the research work of the department.

#### ZF as learning organization

Currently, the knowledge management approach is only in place at ZF (not including ZF TRW) sites in Germany. The objective is the conscious, responsible and systematic handling of knowledge as a resource. Collaboration rooms, Wikis, and virtual communication media support the virtual cooperation of employees. Best-practice databases store valuable practical experience and make it available for reuse. Expert forums ensure the targeted exchange of knowledge and experience.

The suggestion and idea management schemes provide employees with a platform for submitting improvement suggestions and ideas. The ideas@ZF project has created the conditions for an idea management process across all locations. This allows ideas to circulate between the German locations. Thanks to the continuous improvement process, specific improvement potential has been identified and implemented.

Knowledge and ideas management in the Corporate HR function creates awareness for effectively handling knowledge and ideas; it provides advice and supports the professionalization of existing activities as well as building new activities in knowledge and idea management.

In order to keep knowledge in the organization, ZF has created knowledge batons where employees who are leaving the company make their practical knowledge available to the organization. Existing expertise is documented and stored on storage media so that knowledge can be shared and exchanged using search engines in which employees can enter specific queries.

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In 2016, the ZF Group created a new program to allow former employees to contribute their valuable experience and extensive knowledge. The program “Senior Professionals” enables participation in specific projects and matches specialist areas with senior experts. These temporary assignments can be managed with little administrative effort and provide ZF with a flexible and dedicated workforce. The program initially aims to have 100 registered experts in 2017 with about 40 work assignments.

#### Involving employees

The Employee Commitment Index of ZF TRW has been an ongoing process for years. Each site utilizes survey results and face-to-face discussion to develop action plans to maintain and improve the workplace. As for ZF, a first Global Employee Survey (GES), took place in March 2015. The objective was to sustainably contribute to company goals through increased transparency and involving employees on all levels. We asked about issues relevant to the workplace such as working conditions and cooperation between employees. The survey was evaluated and followed by a worldwide process with specific measures. More than 15,000 suggestions for improvement were received,

657 projects

were submitted by more than 3,000 employees at over 100 ZF locations to make ZF fit for the future

one third were put into practice in the same year. The planned Global Employee Survey for 2017 had to be postponed due to the integration of ZF TRW. A full-scale survey will take place after 2018.

#### ZF Excellence Award

In 2015, we aligned several initiatives and awards (e.g. Environmental Award, TQM Contest), to improve our internal collaboration by increasing transparency, leveraging synergies and becoming better at sharing ideas and solutions.

The comprehensive ZF Excellence Award honors innovative solutions that create value for our internal and external customers. It also encourages the spread of best practice and experience across all locations and organizational entities. By promoting a “learning organization” in which relevant knowledge is easily shared and accessed, the award constitutes an essential prerequisite for the agility and efficiency we need to maintain our innovative strength and achieve cost leadership.

The entrepreneurial spirit and creative energy of our employees at all levels of the organization is overwhelming. In 2016, a total of 657 projects were submitted by more than 3,000 employees at over 100 ZF locations. The various projects entered for the contest have saved ZF a total in excess of EUR 300 million. While cost savings are extremely welcome, the many projects also improve production processes, create value for customers, or improve occupational health and safety measures. The results also bear testimony to a creative, cooperative learning ZF Group.

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## Fair employment practices

Responsible, supportive and fair – that’s the kind of employer ZF aims to be. This aspiration is in line with ZF’s tradition and history, it is part of our identity. We want to create a corporate culture that strengthens collaboration and trust. And we are convinced that this approach also leads to better financial results. We provide support and make offers, but at the same time ask for our employee’s dedication and commitment. We want to create a work environment that rewards high performance. Fairness, as we see it, provides benefits for employees and employer alike.

### Managing the employer-employee relationship

Together with its employees around the world, the ZF Group is confronting the challenges of globalization. This calls for collaboration at all levels based on mutual respect and it represents substantial component of our corporate culture.

The common interest of employees, employee representatives and company management is to sustain our international competitiveness in all areas with a view toward achieving sustainable commercial success for the entire company and its employees for safeguarding the future. The company values open communications among its employees and respects the rights of its employees – as is consistent with applicable law – to join or assist a labor union or works council, or refrain from doing so. No employee or employee representative shall be disadvantaged as a consequence of exercising his or her rights in this regard. ZF respects the right to collective bargaining and negotiations (ILO Convention No. 98) for regulating working conditions.

Employee and employer representatives regularly interact in an atmosphere of trust. Employee representatives are therefore comprehensively informed in a timely manner about changes in the company. All legal obligations are respected. A trusting cooperation under the Works Constitution Act is a fundamental factor in our corporate culture. This applies to all employee representative committees such as the individual works councils and committees, including the General Works Council, the Group Works Council or the European Works Council and the individual contact persons on the employer’s side. Fundamental questions about the company’s development are discussed in communications and at meetings. The discontinuation and relocation of companies or sub-units, investments or other changes to the organization are also main topics. The TRW Automotive Forum represents a joint body of the TRW Executive Board and employee representatives, which serves to collect information, consultation and the exchange of ideas.

### Adequate salaries

As a fair employer, ZF is committed to competitive remuneration of its employees. The ZF and ZF TRW locations in countries with high employee headcounts participate in coordinated market benchmark exercises in partnership with leading benchmark service providers on an annual basis. Locations in countries with lower employee headcounts participate in local surveys according to their specific needs.

Germany is the country with the highest ZF headcount (incl. ZF TRW) worldwide. ZF participates in pay-scale remuneration benchmark surveys organized by the relevant employers’ association. Temporary and subcontract workers are paid in accordance with standard wages. ZF has negotiated minimum wages for such workers in five different categories with service providers. ZF is entitled to check

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that subcontractor employees receive the applicable minimum wage or agreed standard wage. External service providers must sign the ZF declaration of compliance to collective agreements.

Remuneration at ZF is based on compensation structures. In ZF TRW compensation structures are based on a global job classification system. In ZF entities, the compensation structure for managers is based on a global grading system. Compensation structures below management levels are based either on collective pay-scale agreements or on local grading systems.

Job classification, grading systems and collective pay-scale agreements are intended to minimize the risk of discriminating against women on compensation levels. ZF will finish harmonizing the grading process and the system for managers worldwide by the end of 2017. ZF is an equal opportunity employer and has appointed a global diversity manager in 2016 to monitor equal treatment among employees.

#### Benefits and retirement planning

Provisions for pensions are set up for obligations from vested benefits and current pensions for entitled current and former employees of the consolidated ZF Group and their surviving dependents. Various retirement pension schemes exist depending on the legal, economic and tax situation in the respective country, which – as a regular rule – are based on the length of service and emoluments of the employees. In general a distinction can be made in connection with company pension schemes between defined contribution plans (DC) and defined benefit plans (DB).

The Consolidated Balance Sheet for 2016 showed a total of EUR 3,257 million in net provisions for pensions reflecting DB plans only. This is approximately EUR 305 million less than in the previous year.

Although the gross provision for pensions increased in 2016 to EUR 7,296 million (2015: EUR 6,294 million), the net provision for pensions has been reduced in total by earmarking financial assets to pensions. The vast majority of provisions (approx. 71.5 percent) affect benefits for employees with an employment contract in Germany. Further significant pension plans are located in the UK (21.5 percent), the USA and Canada. Plan benefits depend upon salary, length of service and the cost of living index.

Compared to previous years the main change in 2016 took place in Germany where in order to secure pension obligations, the securities have been transferred to the newly founded ZF Asset Trust e.V. Further information and figures to this action can be found in the 2016 Annual Report (pages 97-104).

Health and insurance benefits play a central role in ZF's offering to employees. Of course, benefits vary according to local standards, regulations and market practice. Health benefits in Germany follow national regulations.

Following the acquisition of TRW, ZF is in the process of analyzing the different healthcare and insurance benefit programs in the major countries and locations. The harmonization of health benefits is completed in the USA.

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## Promoting diversity

We believe that diversity and the appreciation of diversity have a positive impact on society and how people work together. That is why we signed up with the Diversity Charter and now belong to a group of approximately 2450 signatories dedicated to a welcoming, prejudice-free corporate culture. This voluntary commitment represents our pledge to actively promote diversity within our organization.

In 2016, a mentoring program to increase the visibility of female managers within the organization was implemented. Feedback on the program was very positive – from both the mentees and mentors. A follow-up program open to women and men is currently being prepared.

### Managing diversity

The HR strategy is part of the ZF 2025 Strategy and highlights the issue of diversity. ZF understands diversity as the key to success, a driver of innovations and a factor in enhancing corporate value. ZF focuses on particular dimensions that will help meet strategic challenges in the coming years. They will also contribute to enhancing the ZF's future competitiveness. These dimensions include a balanced gender ratio, issues such as cultural background and internationality of the workforce, a wide range of experience and expertise and solutions to demographic changes. All of these factors are systematically

analyzed and processed on a regular basis, and the results are reported to the Board of Management. The introduction of ZF Career Elements for managers has enabled us to define a binding framework for job and career decisions. The modules determine criteria for promoting and supporting multidivisional, multidisciplinary experience and help to internationalize management. The ZF Career Elements are not yet in place at ZF TRW, but will be by 2018, as part of the integration process.

To increase the number of women in technical professions, ZF has become a partner company of the highly renowned Femtec Association, which was founded by the EAF Berlin and the Technical University of Berlin in 2001. Femtec is an international career platform for women in natural sciences and engineering. The organization recruits talented young female students for STEM (Science, Technology, Engineering, Math) professions, qualifies excellent candidates for a management career and offers distinguished career perspectives to focused female students in cooperation with the partner companies.

### Non-discrimination

ZF is present in many countries of the world and embraces a wide diversity of cultures and people. We foster the exchange of thoughts, ideas and methods as well as understanding between cultures and people. Our ZF Charter and ZF Leadership Principles contain a defin-

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itive statement on the issue of diversity: Employees at ZF are not discriminated against on the basis of skin color, gender, age, nationality, religious denomination, social background, disability, or sexual orientation. This applies to the recruitment of new employees, the existing employment relationship and professional advancement at ZF. The only traits that are important are performance, personality, skills, and qualifications. There were no confirmed incidents of discrimination in the reporting year.

#### Equal opportunity

In light of German legislation governing equal representation of women and men in managerial positions in the private and public sectors, ZF has discussed and set targets for the relevant managerial levels to be achieved throughout the entire Group by June 30, 2017. At the first managerial level below the Board of Management, the percentage of women is planned to increase to 8.4 percent; at the second managerial level, the target of 8.1 percent has already been achieved and actually exceeded by 0.3 percent, reaching 8.4 percent. The percentage of women on the Board of Management will probably remain at 0 percent in June 2017 as no personnel related changes are envisaged for this period. At the moment, 15 percent of the members of the Supervisory Board are women. This percentage may change when seats on the Supervisory Board become vacant.

Thirty percent of the shareholders on the Supervisory Board are women, one member is from outside Germany. Currently, the Board of Management consists of seven men, one member of the Board is from abroad (non-German).

ZF has been a member of the Diversity Charter (Charta der Vielfalt) since 2014. This involves a voluntary commitment to actively support diversity in the organization. In 2016, the percentage of women in leadership positions in the Group amounted to 11.2 percent. This was due to the integration of ZF TRW, which raised the percentage of women in leadership positions. The aim is to increase this amount by introducing various measures, such as improvements in work and family balance. A career component was introduced in the form of a social module to cover parental leave, leave to care for relatives and other types of community and family commitments. The compatibility of work and family at ZF is still an important objective for promoting equal opportunities and employee satisfaction. Since 2006, the ZF location in Friedrichshafen has been a certified family-friendly company in Germany. As part of the “career and family” (“berufundfamilie”) audit certificate, family-related targets and measures have been firmly established. The objective is to expand existing programs in the company or to establish new ones. ZF initiated an audit for the fourth time in 2015.

700 places  
for vacation care at our major locations in Germany

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Furthermore, additional family-friendly minimum standards were defined and consistently implemented by an expert body for work and family. We have been actively implementing the aspect of career and family care for many years. A major milestone in this area was ZF's decision to build a company children's daycare center at the Friedrichshafen location with 60 all-day places. This facility opened its doors at the end of 2015. We have also expanded childcare places and options for short-term care throughout the Group. Another important building block continues to be providing daycare for employee children during school vacations at all our major locations in Germany. This provides some 700 places for school vacation daycare.

As of 2006, Friedrichshafen has been compliant with the statutory requirements for employees with disabilities and ZF has recorded the handicapped rate for Germany. In 2016, the percentage of employees with disabilities amounted to 5.8 percent (2016). The level exceeded the five percent minimum that legislation stipulates for the company. As a result, it was not necessary to make any compensation payments.

## Ensuring health and safety

Occupational safety and promotion of our employees' health are the foundation of our day-to-day work. They are therefore top priorities within our corporate objectives.

The preventive approach plays a key role here. Risks at workstations are periodically assessed at ZF, necessary measures are implemented and their effectiveness is assessed after the action has been taken. ZF

deploys state-of-the-art technology and knowledge. When planning and procuring machines and equipment, key criteria are considered for occupational health and safety protection.

ZF has defined Group-wide targets for occupational health and safety management and progress is frequently monitored. Alongside complying with applicable legal requirements and national occupational health and safety standards, ZF has developed appropriate Group-wide minimum standards for health and safety. ZF also expects suppliers and service providers to comply with the applicable occupational health and safety regulations. ZF and ZF TRW targets will be harmonized by the end of 2017.

### Organizational structure

The German Law of Occupational Health and Safety stipulates that occupational health and safety committees should be organized at German locations. Members of the works councils are also represented on these committees. Prior to the occupational health and safety committee meetings, specialists in occupational health and safety, medical officers, representatives of the works council and responsible executive managers carry out inspections and audits to gain an insight into the current status and need for change.

International occupational safety management at ZF is controlled by the occupational health and safety committee, which is made up of coordinators from the various divisions and regions. The committee has developed guidelines on all major safety topics.

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The Global Health, Safety & Environmental (HS&E) Team of Division A defines standards, specific requirements and guidelines as part of the HS&E Management System. Implementation of the Management System covers strategic program elements such as ergonomics, metal-working fluids, safety leadership and behavior-based safety.

### Managing safety

Our Integrated Management System (IMS) for occupational safety, environment and energy conforms to the international standard BS OHSAS 18001. The introduction of OHSAS is voluntary at ZF, however those locations that fall significantly short of their accident reduction targets are asked to join the certification scheme. One of the occupational health and safety objectives is to see a continuous increase in the number of sites integrated into the Group certification scheme. The international occupational safety management system OHSAS was expanded in 2016 to 39 (2015: 26) ZF locations (not including ZF TRW) – including all relevant production locations in the North America region. About 20 additional sites will be added to the OHSAS matrix in 2017 and 2018 based on their safety performance and customer requirements.

ZF TRW has implemented a Health, Safety & Environmental Management System at its sites and this includes the requirements of OHSAS 18001; the HS&E Management System is subject to periodical audits performed by the Global HS&E Team. In total 15 sites are holding a single OHSAS 18001 certification and it is expected that more sites will be certified in 2017 and 2018 to fulfill customer requirements.

To support the compilation of risk assessment reports and accident management, ZF implemented an IT solution that was rolled out in 2015. In the process, a team of machine safety experts defined key processes and interfaces and drew up goodpractice examples on how to source, commission, and retrofit machinery. Now a Group-wide approval checklist for new machinery and plants creates uniform approval standards and is widely used by the safety experts. As part of the ZF TRW integration, Accident Management as well as Machine Safety and Ergonomics have been analysed by deep dive teams formed of ZF and ZF TRW specialists to determine the best solutions for the combined company. Realization will start after Board of Management (BoM) approval in the second half of 2017.

All employees and their representatives are involved in the continuous improvement of health and safety in the workplace and they are subject to regular qualification measures. Staff are motivated to participate in activities such as workshops and suggestion schemes. A Behavior Based Safety program and Safety Kaizen have been implemented at ZF TRW. Employee involvement activities are designed to increase awareness and create a sense of ownership and responsibility for their own safety and the safety of their colleagues.

### Accident reduction program launched

In December 2014 the BoM approved an ambitious global accident reduction program for ZF locations (not including ZF TRW) with a clearly defined target. By 2025, all locations must reduce their accident rate, which is defined as accidents resulting in one or more lost

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days per million working hours, to less than five. This means a reduction of 60 percent compared to today's figures. Since most accidents are caused by at-risk behavior, the objective can only be achieved by changing the safety culture.

Although strenuous efforts were made, the target to reduce the accident rate by 10 percent every year was not achieved in 2016. About 20 percent of the locations fell significantly short of their reduction targets. A decision was taken in 2016 to implement a Safety Excellence program directed toward supporting the sites in achieving their reduction targets.

### Safety Excellence

In September 2016, the BoM decided to launch the Safety Excellence program consisting of the three key elements: Safety Leadership, Employee Involvement and Continuous Improvement. This program aims to sustainably foster the same culture of shared values regarding health and safety for every employee and at every location. To build a culture where safety is valued, ZF will encourage and empower employees to make a positive impact on their work environment. Through the Safety Excellence program, employees are working together to build a strong and sustainable culture of safety and security.

Since ZF TRW had already developed and implemented the Safety Excellence program, a team made up of representatives from both companies was created called the Safety Leadership Core Team. The team is currently focusing on implementing the Safety Leadership element.

### The Safety Leadership Program

Senior management realized the importance of recognizing and supporting safety leadership at every level in the organization. As part of the integration process and the "best of both" approach, the BoM decided to build the ZF Safety Leadership program based on the proven ZF TRW program which started about 10 years ago and has helped to significantly reduce accidents.

ZF TRW's experience shows that Safety Leadership workshops have been an effective tool in helping to create a sustainable safety culture. The objectives of Safety Leadership are:

- creating a company-wide value for safety,
- ensuring that all managers understand their important role in managing safety and building a strong safety culture and
- fostering a culture where employees are empowered to play an active role in ensuring their own safety and that of their fellow employees, both of which contribute to building a strong and sustainable safety culture.

The BoM's Safety Vision aims for world class safety performance and was summarized in a video message shown to managers at all workshops. Dr. Sommer (CEO) stated that he considers safety as a prerequisite for success, Mr. Hankel (COO) added that safety has the same priority as productivity, quality and delivery reliability. The Safety Leadership (SL) Core Team has developed content for Safety Leadership workshops. Module 1 focuses on the transformation to a high safety culture, presenting nine Safety Leadership Elements and introducing five Safety Basics.

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The first workshop adopted the top-down approach and was conducted for divisional managers and BoM members in November 2016. They subsequently invited their management teams to participate in a similar workshop and also asked the next levels to follow a similar format. The workshops were delivered by the SL Core Team and internal safety leadership coaches. They took part in a qualification program consisting of internal training courses held by the SL Core Team and external training from a consulting firm. The program is accompanied by the introduction of five safety basics to set world-wide minimum standards and make the program visible for all employees. The safety basics consist of rules related to the use of safety shoes, highly visible clothing and mobile devices, unique safety flyers for visitors and envisioning accident free days at the locations.

#### Employee involvement

ZF TRW had also developed and implemented a Behavior-Based Safety (BBS) process as part of its drive to achieve Safety Excellence. BBS aims to increase employee involvement in safety by making employees more aware of how an individual's behavior at work largely determines safety outcomes. About 100 locations have implemented this process of safety coaching with employees coaching their colleagues to work safely. In 2016, one ZF location in Brazil started a pilot program to implement BBS. In 2017, the rollout of the BBS process at ZF will be defined and planned, with the target year 2018 to start the rollout.

#### Continuous Improvement

The backbone of the Continuous Improvement program is comprised of our management systems and audit programs. The systems are being evaluated to start the consolidation process between ZF and ZF

TRW. One important program element is the ergonomics program. Additional locations have implemented the new ergonomics online tool which is currently being tested by ZF TRW.

#### Rate of Accidents

ZF places great value on employee health and safety. Work-related lost time accidents are recorded and analyzed in order to monitor safety performance. In 2016, data included agency workers for ZF and ZF TRW. Like the previous year, there were no work-related fatalities in the ZF Group.

At ZF, (not including ZF TRW) 1,484 work-related accidents resulted in 22,879 lost work days, the Lost Time Accident Rate (LTAR) – accidents per one million working hours – was 11.5. This represents a reduction of 5 percent compared to the previous year. The severity rate – lost workdays/lost workday accident – was 15.4. This is an increase of 4 percent compared to 2015.

Most accidents occurred in Europe (1,295 work-related accidents), mainly in Germany (1,079 work-related accidents). The South America region improved its safety performance by 35 percent which shows that their safety-improvement actions and programs have been effective. The Asia-Pacific region reported the lowest accident rate.

As for ZF TRW, 369 work-related lost time accidents caused 10,874 lost work days, the Lost Time Accident Rate (LTAR) was 2.4. This represents a reduction of 4 percent compared to 2015. The severity rate – lost workdays/lost workday accident – was 24.6. This is a reduction of 1 percent compared to 2015.

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## How technology improves safety at ZF

To increase employee safety, we have also improved various technological issues regarding daily work activities. For instance, ZF Gusstechnologie has GmbH introduced a new system for tracking and analyzing forklift truck activity in 2016. The forklift truck automatically complies with the maximum speed allowed for transporting the weight of liquid melt, which is important for safety and cost issues. Employees now transport higher volumes more safely. In case of incidents, damage costs will be reduced by more than 50 percent. Further implementation of the new system is scheduled for 2017.

Both the North America and Asia-Pacific regions showed an improvement of 17 percent while Europe showed an increase of 5 percent and South America an increase of 14 percent in the LTAR. The overall safety performance remains at a very good level and met targets for both LTAR (3.0) and the severity rate (the target severity rate in 2016 was based on working hours).

A high percentage of lost workday accidents was caused by slips, trips and falls, and contact with moving machines (18 percent each). Injuries sustained by employees were mostly to the fingers and hands.

As part of the integration process a new data bank for combined data reporting is being evaluated to ensure consistent reporting.

## Managing our wellbeing

The strategy defined in 2014 to provide a platform for effectively coordinating synergies generated by the large number of decentralized activities in health management was implemented.

Also, the Occupational Medicine expert group on hazardous material and the Interdisciplinary Health Management expert group (IEG) were established. The IEG on “Leadership and Health” (consisting of representatives from all ZF divisions, not including ZF TRW) developed mandatory standards for training courses on leadership and health at the German locations across all divisions. These standards affect the training programs offered at the locations and the content of individual training courses. They also provide information on the training and qualifications of the trainers. An analysis of the situation revealed that models for salutogenesis, the bonus crisis, etc. are important here. The nationwide launch of these standards will start at the German locations in 2017.

## Rate of accidents (LTAR)

Accidents with working days lost per one million working hours

Regions	2016			2015	2014
	ZF	ZF TRW	Combined Company	ZF	ZF
EMEA	15.3	3.9	10.5	15.5	17.8
of which Germany	16.4	4.5	14.2	17	19.4
of which Europe <sup>1</sup>	11.7	3.7	5.9	10.5	11.4
North America <sup>2</sup>	4.6	1.8	2.6	6.5	4.8
South America	7.7	3.3	6.0	12	12.6
Asia-Pacific	2.3	0.5	1.1	3	3.5
<b>ZF Group</b>	<b>11.5</b>	<b>2.35</b>	<b>6.5</b>	<b>12.1</b>	<b>13.5</b>

<sup>1</sup> excluding Germany

<sup>2</sup> including Mexico

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For ZF (not including ZF TRW), minimum medical standards have been defined and distributed worldwide in 2016. To cover these minimum standards, the status of meeting these standards was evaluated. At the locations that did not meet these standards, actions were defined and initial audits were carried out to achieve our standards.

### Occupational diseases

Information on occupational diseases are currently only reported for Germany (not including ZF TRW locations). There were no indications of employee groups who have a high rate or risk of disease resulting from their work at ZF during the reporting year. The risks of occupational diseases and work-related health problems typical in the metalworking industry are well known. Preventive measures and contingencies for intervention are in place. For instance, a standard key indicator method is used to evaluate stresses on the musculoskeletal system in the workplace and corresponding prevention and intervention actions are taken, such as ergonomic workplace designs.

Noise-induced hearing loss was again the most frequently reported occupational disease among ZF employees. This is not surprising for a long-established metalworking company. In 2016, the company identified 21 cases (2015: 20 cases). As noise-induced hearing loss usually develops over years of exposure to noise, the latest figures for occupational disease identified do not necessarily reflect current working conditions. In recent years, we have implemented several measures to reduce noise emissions. Possible preventive measures include technical measures to limit noise. Strain on the inner ear is also reduced by wearing suitable personal protective equipment (PPE). This hearing protection equipment is available to all employees affected, and wearing it is mandatory in noisy areas.

Apart from hearing loss, only one work-related skin disease was diagnosed in 2016. The company's medical service becomes aware of work-related skin diseases when symptoms occur, and the spread of symptoms can often be avoided before they turn into an occupational disease. In 2016, forty-two employees were diagnosed with potential work-related skin disease, but only one case was confirmed. In nearly all of the rejected cases, benefits were provided.

We provide the required skin protection to prevent work-related skin diseases and stipulate their use in skin protection plans. Whenever employees suspect they have health problems, they can consult the company doctor or medical service during working hours. All employees have the option of undergoing additional health check-ups alongside mandatory health care at ZF.

In the metalworking industry, the risk of occupational infectious diseases is negligible. Only the medical personnel working in the medical service are exposed to this risk. and they are entitled to free vaccinations. People who take business trips to countries with increased health risks including possible infectious diseases receive obligatory preventive care in the form of extensive travel-related medical advice or check-ups, including the appropriate vaccinations.

### Health and safety agreements with trade unions

The system of co-determination in place at the German ZF locations also applies to health and safety at work. Close cooperation on these issues occurs between the Works Councils and the Group Works Council. Occupational health and safety issues are part of the Group Directives and guidelines applied at the various locations. In Germany, the approval process for these regulations includes the involvement of employee representatives regarding issues subject to co-deter-

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mination. On a location level, there are various guidelines on hand that cover occupational health and safety. A Group Directive on occupational health and safety was prepared in 2014, and a draft for the directive was planned for 2015. However, ratification may be delayed because of the integration of the new structures and processes due to the TRW acquisition.

## Supporting our local communities

Corporate social responsibility at ZF is an important and intrinsic component of the company's mission statement. In line with this commitment, we therefore contribute a great deal to our local communities by supporting education, sports and recreation, culture, environmental and community projects. Activities of this nature range from funding endowed chairs at universities, through the ZF Art Foundation supporting artists and musicians, festivals and nonprofit organizations, to an owl sanctuary project in northern Germany. ZF sponsors the elite volleyball players of the VfB Friedrichshafen team and also funds many local recreational sports.

### A new platform we>care to bundle all initiatives

Throughout the world, ZF employees strive to help vulnerable people in the global community. However, many of these positive actions go unnoticed. The new platform we>care is going to change that.

we>care bundles all the initiatives and creates a common identity, including overtime or financial donations, volunteering, even donations of baked cookies. A global network of initiatives will be put in place under we>care.

Currently initiatives from Australia, Brazil, China, Germany, Malaysia, South Africa, South Korea, the Netherlands, UK and USA joined the network and shared their social activities.

Worldwide recognition of we>care will enable all ZF employees to provide disaster relief support and emergency aid within ZF's annual project.

The first step was a worldwide online vote. This allowed all employees to be involved in choosing the annual project as a follow-up to the "100 Years – 100 Schools" campaign. A team from the trainee program and the members of the "ZF hilt" advisory council selected three projects from globally accredited NGOs. The majority voted for the "Water is Life" project which will be launched together with the global aid organization CARE. Fundraising for the project started at the end of 2016.

### 100 Years – 100 Schools

The fundraising campaign for the educational project "100 Years – 100 Schools" was announced during the anniversary year of ZF Friedrichshafen AG and it has now been completed. The money is being invested in building and enhancing 100 educational institutions in impoverished regions around the globe. Additionally, children from 100 African villages received bicycles to get to school every day.

Many people responded to the call for donations. ZF employees around the world, ZF retirees and the Group itself as well as the city of Friedrichshafen and its citizens contributed to this campaign. Companies from the region also gave generously to this initiative. The money raised by ZF Group amounted to more than EUR 2.4 million

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at the end of the campaign. With UBS Optimus Foundation adding more than EUR 1.8 million, the donated money amounted to EUR 4.2 million.

Together with YOU – Foundation for Children in Need, a total of 85 new schools are being built in Bangladesh, India and Sierra Leone. Our aid focuses on povertystricken areas. In addition, 70 different educational institutions in China, Mexico, Nepal and Peru and the Philippines were selected to receive support for improving the quality of education and teaching there. “ZF hilft” joined forces with the international “World Bicycle Relief” organization to commit to mobility. This is the third pillar of its far-reaching aid campaign. As part of this commitment, it donated more than 4,000 bicycles to Zambia and South Africa to make school children from 100 African villages more mobile.

#### ZF TRW’s Child Road Safety Campaign 2016

In 2008, road safety in China was still in its infancy with the number of vehicles and pedestrians predicted to swell during the Beijing Olympics. ZF TRW began a campaign aimed at young children to create awareness of the dangers presented by road traffic. This was chosen as a sustainability project in 2012.

The campaign focused on young children and required an identity they could relate to, thus the “Safety Bunny” mascot was born to spearhead the campaign. An official website was developed. “Safety Bunny” educational materials were created, including stickers, books and a USB containing a video and a ‘cuddly’ Safety Bunny toy.

ZF TRW staff members were encouraged to volunteer and define a program of safety presentations and educational sessions aimed at young children. This created understanding among the children through fun activities and was supported by educational presentations on the safety equipment available in cars and how it works. Feedback from staff, children and parents who attended the events showed that they were well received.

Each year, the campaign builds on previous successes and the team encourages more employees to host events through the intranet pages. Outreach is being extended to local primary schools near ZF TRW locations. Seven school events were held in 2015 with annual return visits booked. In 2016, the number of events rose to eleven, educating around 585 young children about the importance of Road Safety – an increase of 270 over the previous year.

This campaign was recognized in 2016 when the China Automobile & Parts Industry magazine awarded the team a Developing & Innovation Award: BEST CSR SAMPLE.

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# ENVIRONMENT

We are meeting our responsibility toward people and the environment by implementing a range of different environmental protection measures. This responsibility is anchored in ZF values. It protects us against entrepreneurial risks – in the areas of compliance, customer relations and reputation – while improving our operating efficiency and benefiting the environment. We continue to operate responsibly as a business and a manufacturer of ZF products by constantly striving to globally comply with legal requirements and internal standards.

## Environmental Strategy

Conserving natural resources is the fundamental principle of our environmental strategy which is based on the environmental policy adopted in 1996. This policy has been amended and added to since then and it is globally binding for all locations.

The environmental policy includes major areas of activity which are essential for us: climate protection, the environmental impact of our production, eco-friendly product design and environmental performance improvement. This policy is based on environmental objectives for the areas of activity and is controlled by our certified environmental and energy management system. The locations strive to achieve the objectives at a local level.

The strategy, our management approach and environmental reporting is currently being revised for the combined company. Experts for environmental and occupational safety at ZF are working to adapt

and develop new strategies in this area. The best approaches from ZF and TRW, and from the automotive industry in general, will be considered here. This integration process will involve the new common policy, defining areas of activity and targets, and a common baseline. A joint environmental and occupational health and safety program with overall policy and objectives will be established in this way.

## Organizational structures and compliance

The global ZF environmental organization covers all the areas of the company, from each individual division to different regions, right down to the locations. The corporate environmental protection officer is responsible at the Group level and senior environmental protection officers are appointed at the divisional level. The regional coordinators in individual regions provide support for ensuring compliance, the implementation of ZF standards and monitoring of the environmental management system. Our environmental organization works closely together with the Occupational Health & Safety Department in order to leverage synergies. The leading environmental protection officers from the divisions and regions meet up several times a year in the Environmental Manager Committee (EMC) to coordinate current developments and further develop the environmental strategy. In addition, working groups are established for important specialist areas to perform preparatory work for the EMC.

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## ZF environmental and energy policy

ZF's commitment to sustainable environmental protection is anchored in the ZF Charter and the basis for our work. The following principles are checked on a regular basis and are binding for all employees worldwide, with our executive managers being role models for their implementation.

### 1. We are committed to environmentally-friendly product design

Our products are designed to be as energy and resource efficient as possible. Our striving for technological innovations and excellent solutions also includes environmentally friendly product design.

We are convinced that our innovative strength in terms of environmental issues contributes to our competitiveness.

### 2. We reduce the environmental impact of our operating processes to a minimum

We design our processes to be as energy and resource efficient as possible and reduce environmental pollution caused by our activities to a minimum. We take appropriate actions to ensure that environmental hazards are prevented and limited in the event of an incident. For this purpose, we use environmentally friendly technologies for our investments that are, at least, state-of-the-art; in particular, we actively support the worldwide climate protection efforts.

### 3. We continuously improve our energy and environmental performance

We implement our environmental and energy objectives worldwide with the help of appropriate management systems, review the agreed performance levels on a regular basis, and, if any discrepancy is detected, we take the necessary improvement actions. For Corporate Development projects, we perform environmental risk assessments.

### 4. We strive to be a role model on a worldwide level

We want to be a role model in terms of dealing with the environment and its resources. In order to meet our claim to excellence, we not only comply with the respectively applicable legal requirements but also work on the worldwide implementation of ZF-internal standards.

### 5. We actively involve employees, suppliers, service providers, and customers and engage in dialog with the authorities and society

We involve our employees in the development and implementation of our environmental and energy policy. We train and motivate them regularly; our employees actively contribute to shaping our environmental protection and energy management. Our suppliers and service providers are expected to comply with the respectively applicable environmental and energy specifications; from our suppliers with processes especially relevant to the environment, we demand a certified environmental management system. When dealing with environmental and climate protection issues, we engage in a dialog with the authorities and all parties interested on site. Furthermore, we report regularly on the outcome of our efforts.

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## Environmental management system

All ZF production and main development locations with more than 50 employees are required to align their environmental management with the requirements of the ZF Group's environmental management system after being part of the Group for more than one year. They also have to be certified within the ZF Group certificate in accordance with ISO 14001. In 2016, there were 103 ZF locations (not including ZF TRW) worldwide certified in conformity with the corporate ISO 14001 scheme. All ZF TRW locations with a customer requirement are obliged to organize an environmental management system. 109 locations are certified with ZF TRW in accordance to the international ISO 14001 standard. A total of 92 percent of the production locations now operate under ISO 14001 certification.

The Group's environmental management system covers all regions: Eastern and Western Europe, Africa, North America, South America, and Asia-Pacific. It regulates important matters throughout the Group. For example, all environmental protection officers are granted the right to submit a direct report to the location management, or the sequence and cycle are defined for internal audits.



The Board of Management evaluates twice a year whether the environmental objectives have been reached. The board also assesses whether the environmental management system qualifies to meet current requirements: A Group review is generated twice a year based on the valuation of the locations and the Group unit for environmental protection. This review is presented to the Board of Management and is used to derive the strategic environmental and sustainability objectives for the entire company.

In 2016, the ZF Group Directive for Environment, Health and Safety (EHS) Management was revised. The high-level document covers all ZF sites and defines the EHS organization in concrete terms. The purpose of the directive is to strengthen the organizational implementation of the Board of Management's responsibility regarding EHS globally as well as on all levels of the Group and to define the principles of ZF EHS management.

### Prevention

A core element of the environmental management system is the evaluation of environmental risks and therefrom derived preventive measures.

Preventive technical measures in place at the locations ensure that hazardous substances cannot spill into the ground and endanger the groundwater, even in the event of a potential release resulting from a breakdown. A Group-wide reporting obligation has been introduced to cover the eventuality of a release.

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## Remediation

ZF was involved in over 54 remediation projects, whose causes occurred ten years and more ago. The processing of those projects is carried out jointly with the relevant local authorities. The costs for these projects amounted to EUR 14 million in 2016.

Furthermore, neither committed we any legal environmental offences or were required to pay any environment related penalties or fines in 2016.

## Energy

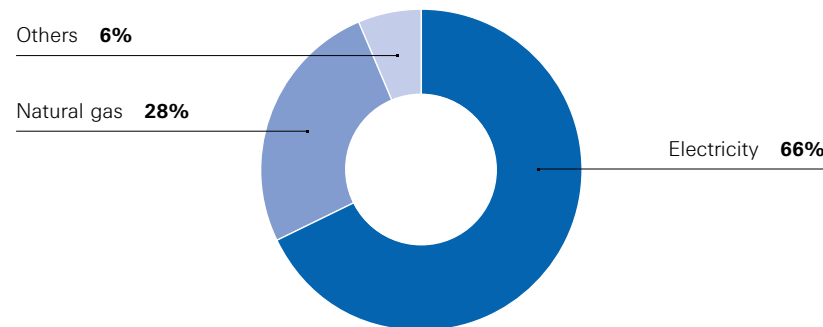
Energy management is a top priority for an industrial company like ZF. Approximately 66 percent of the energy consumed at ZF comes from purchased electricity. Energy procurement and consumption is therefore a major topic especially at the ZF production locations.

In 2016, we have established a global energy team to further improve our environmental performance. The cross-functional team (including purchasing, production, tax and real estate management departments)

meets twice a year to continuously improve the holistic energy management approach and to regularly review key figures and actions for target achievement.

Also in the reporting year, following the revised ZF EHS Management Group Directive, basic elements of energy management were extended to all ZF sites worldwide. In accordance to international standards it became mandatory for all ZF locations to extend their reporting and target tracking for energy objectives with corrective measures and actions.

Energy use ZF including ZF TRW in 2016



Since 2013, ZF's environmental management system in Germany has included requirements in accordance with ISO 50001. The European Energy Directive (EED) required all European ZF locations to carry out an energy audit (EN 16247) or implement an energy management system according to ISO 50001 and this requirement has been met. In 2016 – as the result of an automated selection procedure – ZF was assessed regarding its implementation of the German Energy Services Directive (EDL-G) by the responsible German Federal Office for Eco-

27%

increase in energy efficiency could be realized over the past three years

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conomic Affairs and Export Control (BAFA). In the course of this sample control, ZF had to provide proof for all German locations that the company had complied with all EDL-G obligations. The assessment found that ZF is meeting its legal obligations by having implemented a certified energy management system according to ISO 50001. In 2016, the Corporate ISO 50001 scheme covered 43 locations and 10 single site certifications. By the end of 2018, additional ZF locations in Europe will have been incorporated in the ISO 50001 Group Certificate.

As an integral part of the energy management system, the locations define specific targets locally and annually to increase energy efficiency and they take appropriate actions based on this. The environmental objectives of ZF (not including ZF TRW) envision an annual reduction in energy consumption in proportion to sales. This has to be quantified at the local level. ZF TRW, on the other hand, applies an annual goal for reducing energy costs by 5 percent over the previous year's average and in proportion to each part shipped. These objectives can be achieved by controlling the key performance indicator for energy consumption within the environmental management system in conformity with ISO 14001.

A detailed energy program helps the locations achieve this target. The core elements of the program are behavioral changes, energy supply management, energy data management and energy efficiency in buildings.

Additional actions to increase efficiency and reduce energy consumption are planned and implemented at the different locations. In conjunction with the energy management system in conformity with ISO 50001, these measures have enabled us to increase energy efficiency worldwide considerably.

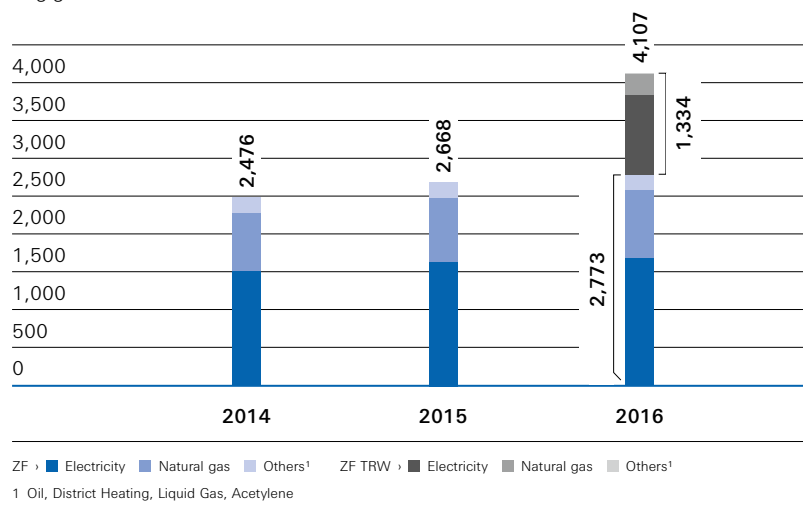
## Energy consumption

Last year, the absolute ZF Group energy consumption grew by about 48 percent because of integrating ZF TRW and an increase in production volume, including several locations which were divested at the end of 2016.

A huge variety of production processes occur within the ZF Group and they have very different energy consumption requirements. The die-casting processes carried out by ZF Gusstechnologie GmbH are highly energy intensive production processes. In 2016, 5 percent of the energy consumed by ZF, including TRW, was used at the die-casting sites of ZF Gusstechnologie GmbH.

### Absolute energy consumption 2014–2016

in gigawatt hours



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The percentage of electricity at ZF TRW is higher than within ZF. The ZF Group's energy profile therefore changed significantly to a share of 66 percent of electricity in power consumption. This is due to different production footprints (processes, countries) of ZF TRW.

As in previous years, ZF and ZF TRW again reduced energy intensity. ZF (not including ZF TRW) brought down energy consumption per million euros of sales by 3 percent. Compared to 2013, an overall reduction of 27 percent was achieved in 2016. This improvement in energy performance was reached by increasing production volume and implementing energy efficiency measures.

New production lines have been installed at locations in the North America and China regions. These processes were partly rolled out as a trial phase in 2016 and did not contribute fully to the increase in production.

### Promoting energy efficiency

Special programs and actions at site level achieved continuous improvement in energy efficiency. In 2016, ZF implemented more than 110 projects to reduce energy consumption. Most of them are optimizations in plant engineering and operation. At ZF TRW, Environmental Protection and Occupational Health and Safety initiated a project called "Cost Determination and Reduction" (CDR) at the individual locations which is intended to uncover potential savings in these areas. In 2016, the project brought in more than EUR 4 million worldwide in areas such as energy and resource efficiency and waste reduction.

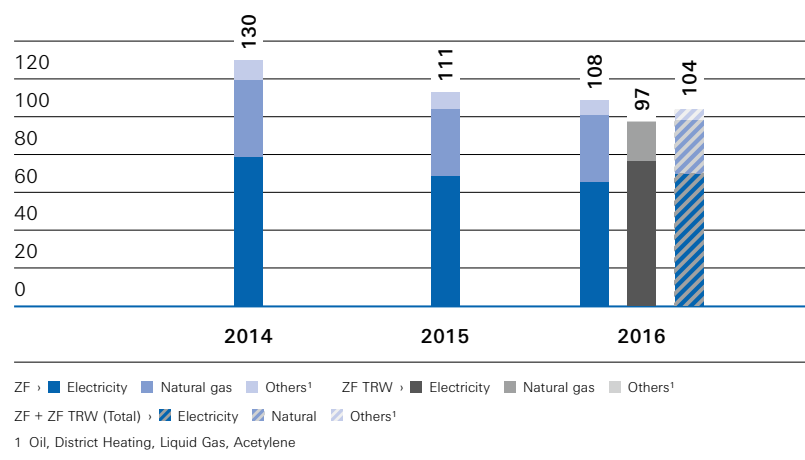
A variety of measures enabled us to save 59 GWh of energy worldwide in 2016. This is enough energy to supply more than 14,800 households with an average consumption of 4,000 kWh/a.

Die-casting production processes provide good examples of successful resource efficiency measures within ZF. In 2016, 5 percent of the energy consumed by ZF (including ZF TRW) was used at die-casting sites. It is therefore a top priority for those locations to have a process of continuous inspection and approval for resource and energy efficiency. In 2016, the Nuremberg location successfully converted its tempering concept in the die-casting process from a mixed oil-water pressurized system to a hot-cold-water tempering system. This action reduced energy consumption in this process by more than 80 percent, increased die service life and decreased the use of release agents by more than 50 percent.

One basic energy efficiency program involves replacing conventional lighting with modern LED lighting in production and assembly halls. This reduces energy consumption on a large scale while, at the same time, improving lighting conditions for employees. Several projects

### Specific energy consumption 2014 – 2016

in megawatt hours per EUR million of sales



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were rolled out in this area. Three German locations changed their lighting systems during the last year, thus saving more than 5,000 MWh electricity.

The ZF TRW location in Koblenz worked in conjunction with Comau to complete an intervention called GreenFit. This reduces use of the hydraulic pump and brings down high-pressure pump energy consumption in CNC machines. The goal of GreenFit is to evaluate existing machines for potential retrofits that reduce overall energy consumption. Typical savings are in the 10-15 percent range, depending on the cycle time.

Technical concepts for systematic machine shutdown have already been implemented at several ZF locations. For example, the ZF location at Sao Bernardo do Campo in Brazil has reduced its energy consumption by 700,000 kWh every year through the controller system for machine shutdown.

ZF TRW plants foster behaviors that reduce energy consumption in the Green Dot Initiative. This initiative empowers employees to identify and label equipment and lights that can be safely shut down when they are not needed. While this program contributed to energy savings, it has not yet been fully utilized within all work cells and lines. The program therefore remains an area of focus and will be evaluated within the integration process.

Emissions

The majority of emissions generated by our products occur during the utilization phase. That is why, as part of our emissions reduction efforts, we are focusing on developing products that contribute to cutting vehicle emissions (see page 76 et seq).

Our environmental and energy management system simultaneously manages the reduction of emissions from our production facilities. The system takes into account the risks and opportunities associated with climate change.

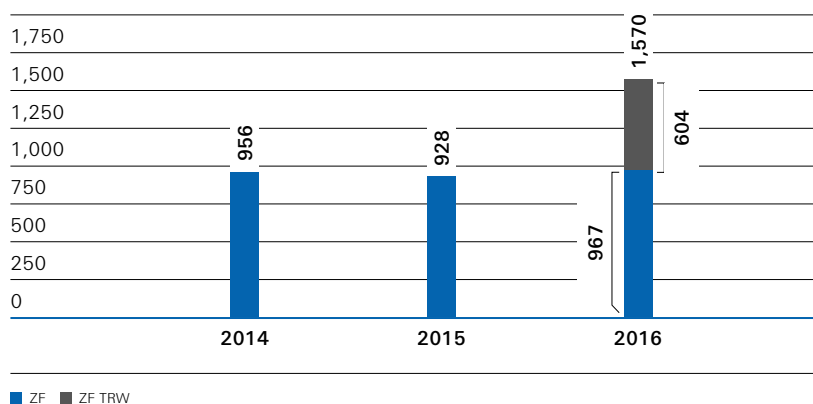
Prior to the merging of ZF and ZF TRW, the objective of the two companies was a 20 percent decrease in CO<sub>2</sub> emissions generated by the energy consumed during production per sales by 2020. This target had already been achieved by both companies in 2015. By 2016, the specific ZF emissions (not including ZF TRW) dropped by 36 percent compared to the baseline (average emission 2006-2010). The reorganization of the EHS organization for the combined company will include revising the CO<sub>2</sub> reduction target and reallocating it as part of the new EHS policy and strategy.

Since the reporting year 2013, ZF (not including ZF TRW) has been using VDA (German Automobile Industry Association) emission factors to calculate direct and indirect (Scope 1 and Scope 2) GHG emissions. Since 2016, the emissions calculation has been based on the latest published VDA emission factors from 2015, and it was established for the combined company. The reported amount of CO<sub>2</sub> emissions does not include CO<sub>2</sub> equivalents (from CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, NF<sub>3</sub>, or others). Since ZF joined CDP reporting in 2016 for the first time, reporting including ZF TRW is targeted for the near future. In

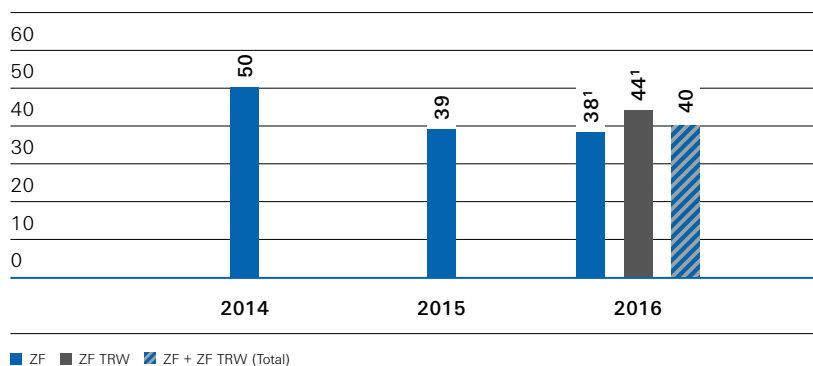
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**Absolute CO<sub>2</sub> emissions 2014–2016**  
in thousand tons



**Specific CO<sub>2</sub> emissions 2014–2016**  
in tons per EUR million of sales



1 The calculation of our emissions is based on the emission factors published by VDA (German Association for the automotive industry) in 2015

terms of SF<sub>6</sub>, in 2016 ZF locations (including ZF TRW) were no longer emitting this gas because of adaption of processes in die-casting or substitution of relevant substances.

### Reducing GHG emissions

The strategy of ZF and ZF TRW focuses on continuously reducing GHG emissions. The improvements achieved were made possible by numerous initiatives and projects to increase efficiency and raise awareness at a local level.

Over 110 projects were implemented at ZF locations around the world. They were mainly in the area of plant engineering, process optimization and building technology. Our CO<sub>2</sub> balance sheet was therefore improved by a total of more than 35,000 metric tons. For details on projects, see EN6.

Another important mainstay is the environmental management system used at locations throughout the world. This primarily evaluates energy efficiency in production.

### CO<sub>2</sub> emission volumes

The increase in energy consumption means that ZF's CO<sub>2</sub> emissions also rose slightly in 2016.

In the last few years, specific CO<sub>2</sub> emissions at ZF have been on a continuous downward curve in line with specific energy consumption. ZF TRW production processes consume more electricity and less gas compared to production at ZF. Electricity has a higher emissions factor than gas and this means that the specific CO<sub>2</sub> emissions from

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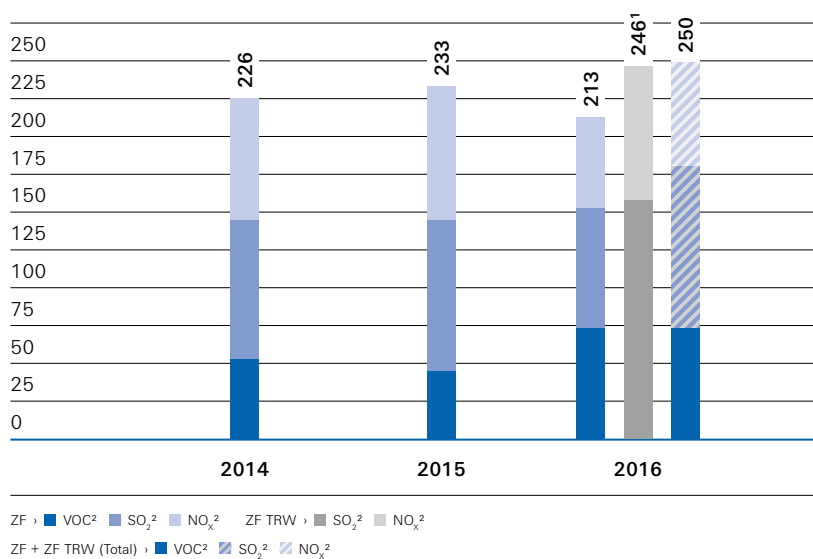
the combined company are higher. Another reason for ZF TRW's higher specific emissions is its larger operational footprint in China with consequently higher emissions factors.

### VOC, NO<sub>x</sub>, SO<sub>2</sub> and other emissions

A major percentage of ZF's VOC emissions originates from large paint and degreasing facilities. Wherever possible, we are continuing to switch over to water-based paints or aqueous degreasing procedures so as to reduce these emissions. If water-based paints cannot be used for reasons of product quality, exhaust air filters are being used. To further improve our environmental performance, we changed air fil-

#### Specific VOC, NO<sub>x</sub> and SO<sub>2</sub> emissions 2014–2016

in kilograms per EUR million of sales



1 Data for ZF TRW's VOC solvents are currently not available

2 The emissions calculation is based on the emission factors published by VDA (German Association for the automotive industry) in 2015.

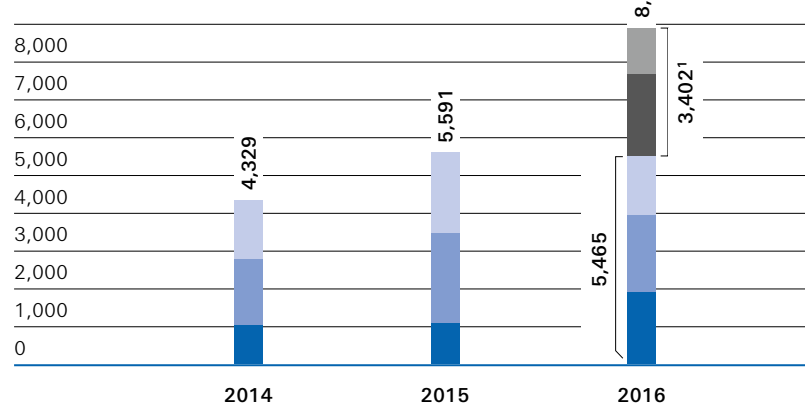
ters from active carbon adsorption to thermal oxidation. This way solvents can be oxidized effectively and solid particles can be extracted. Also by eliminating the active carbon filter system we significantly reduced freshwater consumption.

A number of projects at locations in the Asia Pacific and North America regions were carried out in this area. The level of SO<sub>2</sub> and NO<sub>x</sub> emissions from gas, coal and electricity improved significantly in some countries, including the USA and China. We managed to reduce emissions there by 77 percent.

The Friedrichshafen location succeeded in reducing VOC emissions by almost 50 percent (2,700 kg) after switching over to a new varnish system with a lower solvent content.

#### Absolute VOC, NO<sub>x</sub> and SO<sub>2</sub> emissions 2014–2016

in tons



1 Data for ZF TRW's VOC solvents are currently not available

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China will further tighten its energy savings, emissions reduction and environmental protection policies over the period of China's 13th five-year plan. Numerous jurisdictions (Shanghai, Beijing and other provinces) have issued specific VOC emission standards for the automotive industry primarily dealing with paint processes.

Further potential to reduce VOCs in paint processes are being evaluated in certain products from the off-highway segment, bearing in mind the specific high resistance requirements. Future reporting and management of these VOC emissions is being reevaluated in the integration process and will be adjusted for the combined company.

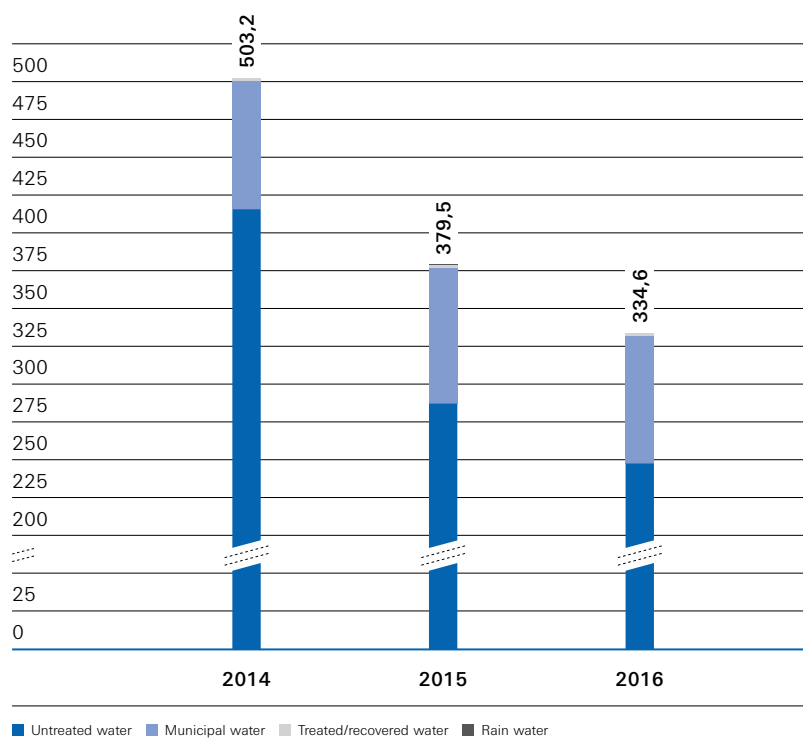
## Water

Water is used at ZF locations for production, e.g. for surface treatment processes, washing, rinsing, and cleaning, as a coolant, or for non-production purposes such as sanitary water, drinking water, in the canteen, or during construction projects.

At locations in water-stressed areas, water consumption in production is a major issue because the use of freshwater might be increasingly restricted in the future. However, the objective of ZF's water management goes beyond reducing consumption in risk areas: We want to continually reduce specific water consumption throughout the Group. We aim to achieve this goal by introducing specific water-saving projects and controlling progress within the individual locations of the environmental management system and at Group level.

The different approaches of ZF and ZF TRW are mainly driven by different production footprints and sources, however, these will be aligned in 2017.

**Specific water consumption 2014–2016**  
in cubic meters per EUR million of sales



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## Water consumption

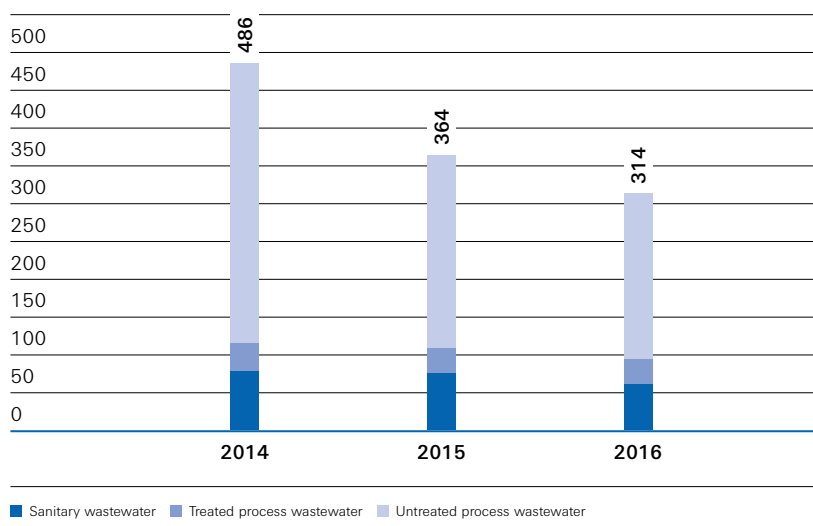
The water supply at ZF locations is adapted to local circumstances and comes in general from the public network (municipal water supply). At some locations water from rivers or underground water (untreated water) is used for cooling processes without any chemical change.

## Wastewater

Wastewater at ZF is usually discharged into the public sewer system and treated at local wastewater treatment plants connected to the system. However, our environmental management system is continually reducing the volume of wastewater it generates. Direct drainage into surface water only occurs at a few locations where there is no public infrastructure. In these cases, water is drained only if approved by the

### Specific waste water 2014–2016

in cubic meters per EUR million of sales



authorities and is treated in conformity with state-of-the-art technology. Threshold values are strictly monitored here. No bodies of water are significantly affected by wastewater drainage. In Germany, installations for handling pollutants hazardous to water are operated according to the regulations of the Water Act. Outside Germany, these substances are treated in accordance with country-specific requirements. For example, environmental legislation in India prohibits certain processes hazardous to water inside a protection zone measuring many kilometers around surface water relevant for supplies. The integrated environmental permit does not allow any surface treatment using solvents within these zones. ZF is committed to installing water-saving equipment that exceeds these statutory requirements.

The total and specific volume of wastewater at ZF locations (not including ZF TRW) continued to drop based on the use of fresh water.

## Water savings and recycling

ZF makes full use of all technical methods for saving water in production processes, for example cascade rinsing systems for washing processes or process water recycling. Modernizing the cooling water systems at one large location has reduced the use of cooling water by 20 percent in the last two years.

Introducing a new demineralization system at our Schweinfurt location in 2016 enabled us to significantly reduce potable water and energy consumption for our production processes. This new system replaced four closed water circuits and ion exchangers and resulted in annual savings of potable water (11,000 m<sup>3</sup>/a), energy (65,000 kWh/a) and process chemicals (43 m<sup>3</sup>/a hydrochloric acid, 28 m<sup>3</sup>/a sodium hydroxide).

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## Waste management

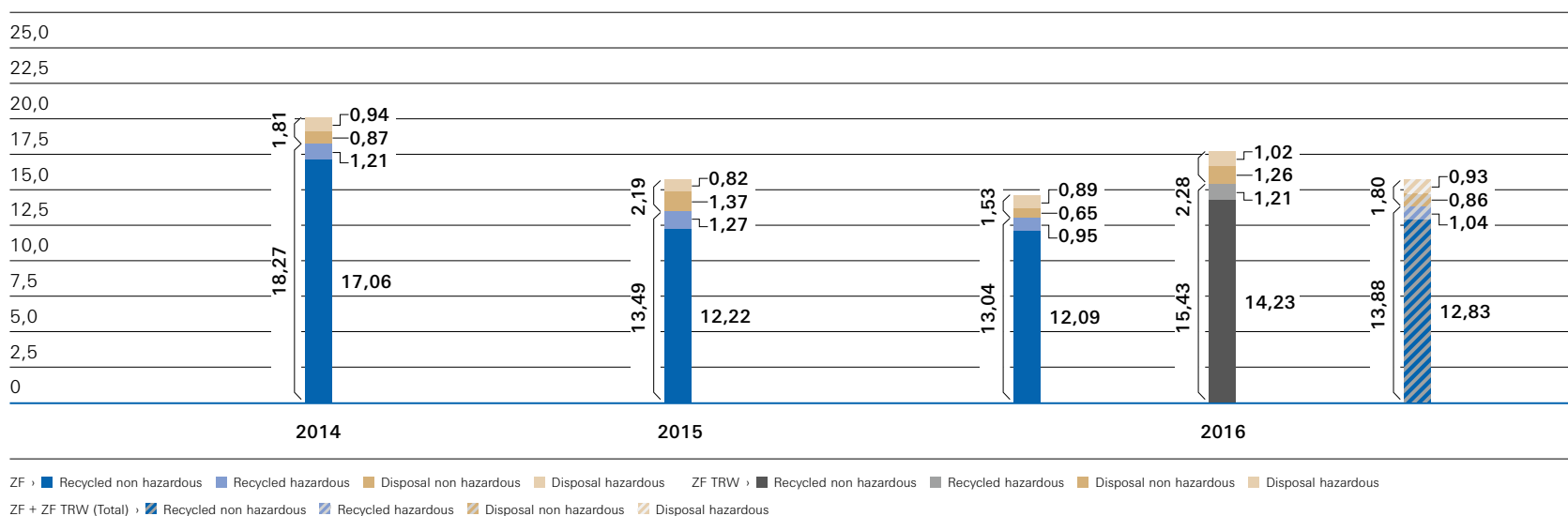
ZF is constantly working toward decreasing the volume of waste sent for disposal and hazardous waste by altering processes, optimizing procedures, and substituting hazardous substances in operations. For example, cooling lubricants for metal processing are needed at many ZF sites. However untreated emulsions cannot be discharged into the sewer system. To avoid environmental risks and costs from transportation and outsourced recycling, a ZF plant in China set up an on-site treatment of those emulsions. As a result, 90 percent of the hazardous waste can be avoided.

The relevant processes at ZF with a potential risk for the release of hazardous substances are essentially surface treatment, carbide treatment, magnesium machining, and hardening. In 2016, no significant spills were reported.

### Waste generation

The specific amount of waste generated at ZF locations was further reduced in 2016 compared to recent years. ZF TRW shows a higher specific amount of waste generation due to different production footprints. ZF does not export waste from one country to other countries. Our waste management is organized locally.

**Specific waste 2014–2016**  
in tons per EUR million of sales



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## Environmental protection costs

Expenditure on environmental issues is not calculated as costs, but as investments. We primarily invest in environmentally-friendly technical equipment and eco-friendly operation. Our investment also includes nature conservation, landscape preservation and a climate-friendly energy supply.

In 2016, ZF (not including ZF TRW) invested at its worldwide locations EUR 15.35 million in environmental protection (2015: EUR 23.3 million) and EUR 39.5 million on the operation and maintenance of environmental actions already taken (2015: EUR 39.9 million). Investments in environmental protection are made up of all the costs incurred in the area of technical equipment for protecting the environment (water, soil and noise protection and clean air). This category also includes investment costs for nature and landscape conservation, and investments in energy supply.

### Environmental protection cost<sup>1</sup>

	2016	2015	2014
Investments	15.35	23.26	19.00
Operating costs	39.52	39.92	40.00
Total	54.87	63.18	59.00

<sup>1</sup> Data for ZF TRW are not yet available

ZF TRW does not track these numbers centrally. The future common reporting will be evaluated and redefined during the integration process.

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# SUPPLY CHAIN

Since ZF manufactures products in 40 countries worldwide, a major part of value creation in production lies in the supply of components. The costs for materials purchased from suppliers account for some 60 percent of our sales. ZF suppliers are normally contractors who procure the raw materials or basic components for the products ordered, manufacture the products and, in some cases, also design the products. When selecting strategic suppliers, ZF carefully reviews their environmental management.

ZF Corporate Materials Management has directed its Advanced Procurement Strategy (APS 25) toward the ZF 2025 Strategy. The APS 25 is based on the ZF environmental policy, the ZF Principles of Social Responsibility and the ten principles of the United Nations Global Compact. The APS 25 implements these principles in the supply chain. ZF requires all suppliers to comply with these three sets of principles.

## Responsible Sourcing

We are aware that economic growth very much depends upon the general acceptance of our business activities in the immediate environment and in society at large. Another highly significant criterion is customer satisfaction, which is directly linked to the quality of our products. For this reason, materials management is vitally important, which is why a trusting and reliable collaboration with our suppliers is a priority for ZF. Only then can we guarantee the high quality of our products as well as ZF's delivery reliability.

Establishing an effective and efficient value creation chain throughout the Group is the declared objective of the APS 25. This strategy contains three sub-goals: increasing ROCE, total quality management

and standardization. Its systematic implementation is supported by a sourcing process which ensures sourcing decisions based on total cost of ownership criteria. As a result of the TRW Automotive acquisition, the ZF and ZF TRW sourcing decision boards have been aligned to guarantee mutual sourcing decisions. This means that materials management not only contributes to achieving business targets, but can also take into account environmental factors such as energy costs alongside pure purchasing costs.

## Business Partner Principles

The success of our internationally active company is partially based on professional cooperation with our business partners worldwide. Since the foundations of this cooperation are common values and standards, all new and existing suppliers have been under an obligation to endorse our Business Partner Principles (BPP) since the end of 2016, with ZF TRW suppliers onboarding in 2017. A standardized process for the request and confirmation of our BPP has been implemented already in 2014. This process includes a tool based solution to track the information about the current BPP status of each supplier. The information about the BPP acceptance is considered in the supplier awarding decision as well as in the new supplier approval process.

Business partners are natural or legal persons, from whom ZF procures supplies or services, or to whom ZF provides supplies and services, without them being employees of ZF or companies affiliated with ZF. For instance, business partners can be suppliers, customers, commercial agents, representatives, intermediaries, consultants, or other providers of goods and services.

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The BPP represent values that ZF recognizes, supports, and communicates to partners. They specify fundamental sustainability requirements of cooperation with our business partners. These guidelines are based on the principles of the United Nations Global Compact and the ZF Principles of Social Responsibility. The principles for our suppliers include requirements relating to human rights, labor standards, occupational safety and health protection, environmental protection, responsible raw materials procurement, business ethics, and compliance.

ZF reserves the right to scrutinize the business relationship and we consider it our duty to take appropriate action if we identify deviations or violations.

External service providers in Germany must sign a declaration of compliance to the collective agreements guaranteeing fair wages, normal working hours, and a rejection of unregistered labor and tax evasion. This declaration also applies to subcontractors engaged by ZF and includes the proviso that ZF can check compliance at any time.

## Improving Supply Chains

In line with the principles endorsed by APS 25 we have integrated environmental and social standards into supplier management and the supplier selection process – evaluating potential new suppliers using supplier self-assessments and audits. The consistent implementation of measures and monitoring of activities are firmly established in day-to-day operations. Consequently, APS 25 focuses on the requirements in newly industrialized countries. Our sustainability

principles help to consolidate a responsible and reliable supplier management. The long-term goal is a purchasing strategy which dispenses with materials from critical procurement sources.

ZF requires new potential suppliers to submit a self-assessment following the Supplier Self-Assessment Sustainability template based on the Business Partner Principles during the approval process.

During the course of the reporting year, 100 percent of new ZF suppliers underwent the self-assessment according to defined sustainability criteria by ZF (not including ZF TRW). No indications of infringements against our principles of environmental protection, human rights, labor practices, forced labor, child labor, or freedom of association were identified. We will continue to apply this procedure consistently in the future. During the year under review, 660 audits were conducted at the existing volume production suppliers.

For 2017 ZF has decided to implement an adapted version of the so called Self-Assessment Questionnaire on CSR/Sustainability developed by the European Automotive Working Group on Supply Chain Sustainability. The advantage of using a standardized Self-Assessment Questionnaire by all participants (OEM and Tier 1) is to avoid duplication and to improve efficiency for the suppliers.

In connection with the process harmonization between ZF and ZF TRW one common Supplier Approval Process is targeted for 2017.

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### Increasing transparency

In 2016, ZF (not including ZF TRW) started a project in which we decided to use a special tool to send supplier inquiries. Information about supplier contact data, existence of a product safety officer as well as general company data was the content of the initial survey. In the coming year, we plan to obtain information from suppliers about their certificates and the updates about the suppliers basic information.

Based on the provisions of the Dodd Frank Act, Sec. 1502, all relevant ZF production material suppliers were obligated in 2016 to meet the disclosure requirement for using of conflict materials (gold, coltan, cassiterite, wolframite and its derivatives such as tantalum, tin, or tungsten) from the Democratic Republic of the Congo (DRC) and adjacent countries in company products, and to verify their origins.

To provide a solution for the reporting and identification of conflict minerals along the entire supply chain, ZF (without ZF TRW) has been using a web-based solution since 2013. As part of the tool-assisted supplier inquiry program, a total feedback of 53 percent was recorded in the reporting year. The results of the inquiry indicate that the reviewed supply chains do not source products that finance conflicts in DRC regions. We intend to increase the feedback rate from suppliers again in 2017.

ZF TRW's Conflict Minerals Team has created and implemented a Conflict Minerals policy that requires suppliers to assess their own products and submit a Conflict Minerals Report using forms from industry standard Electronic Industry Citizenship Coalition Incorporated and Global e-Sustainability Initiative.

For 2017 a combined Conflict Minerals Reporting Process will be developed for ZF and ZF TRW.

### Capacity building

We set up the ZF Supplier Academy to create a strategic cooperation and qualification platform in order to promote and support cooperation with our production material suppliers. ZF (not including ZF TRW) suppliers have an opportunity to take part in seminars held in their regions. Participation provides suppliers with an in-depth insight into ZF requirements, standards, guidelines, and procedures so that they can subsequently apply them effectively in their companies. ZF TRW suppliers will be able to participate in seminars by the end of 2017 as part of the ongoing integration process.

### Lake Constance Supplier Dialogue 2016

The motto of the 2016 Lake Constance Supplier Dialogue held in Friedrichshafen in September was "Powerful & Sustainable Solutions". The new event format developed from previous ZF Supplier Dialogues and was co-organized by Rolls-Royce Power Systems and BME e.V. The common goal is to establish a shared platform for interdisciplinary communication between suppliers, customers and experts from industry, science and politics in order to gain insights into new perspectives, identify individual solutions, and establish networks.

The main topics of this event were drawn from the most important current social, political and economic developments. Faced with increasing political tension, ambitious climate protection agreements and their consequences, as well as highly volatile commodity markets and constantly rising cost pressure, holistic and sustainable management is the prerequisite for long-term success. That's why the Lake

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Constance Supplier Dialogue addressed issues like sustainable value creation, established markets in Eastern Europe and the risk potential of raw materials markets.

### Suppliers Award 2016

The strategic goals of ZF are difficult to achieve without the performance by our suppliers. Raising awareness and support for our strategic directions was promoted by the ZF Supplier Award for several years. In December 2016, seven companies were honored at the ZF Global Supplier Summit in Katowice, Poland. The awards ceremony recognized the performance of ZF suppliers in four categories: Global, Innovation, Production Materials and Non-Production Materials.

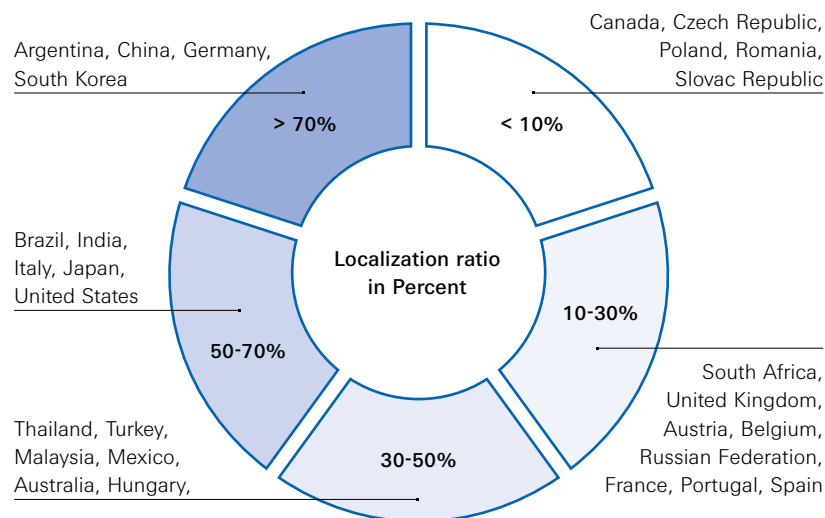
## Rethinking Transportation

ZF's strategy is to buy where the supplied materials or components are needed, this means "local for local" which helps to avoid the impacts of transportation. A strategic decision was made by the Group for ZF to be responsible for all transport carried out from suppliers to ZF plants. For us, this is the best way to ensure that transportation is organized efficiently and that environmental factors are systematically taken into account. In countries where this has not yet been implemented (for instance China), we have launched projects to roll out this strategy there as quickly as possible. As part of our freight management, we are making a concerted effort to pool transport and increase the FTL (full truck load) quota to avoid unnecessary transports. Applying suitable actions, we are also ensuring this is implemented in the management of our goods flows for components

towards ZF customers. By using modes of transport more efficiently, we are striving to reduce the number of transports and actively support global climate protection regulations.

### Localization ratio

83 percent (2014: 85 percent) of our global purchases for non-production materials (excl. investments) are to be made locally. The local procurement of production materials is calculated using a key indicator based on total spending including directed buy and internal supply. The average over all divisions for 2016 amounted to 54 percent



Our main business activities come from China, Germany and the USA, with some of the most localized procurement spending. At the same time, a lower localization ratio does not necessarily lead to increased environmental impact. Cross border transportation for example to or from Poland or Hungary may mean shorter distances compared to national transportation within the USA.

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(2014: 69 percent) for production materials. While the figures of 2014 do not include ZF TRW, the integration led to a lower localization ratio in 2016.

### Modal split

When selecting transport service providers, we always consider the company's "green logistics" credentials. Before awarding contracts to companies, we first check whether they offer CO<sub>2</sub> reporting. We also ascertain whether sustainability is firmly anchored in their corporate strategy, and if they use environmentally friendly technologies.

The ZF intercontinental supply chains are to be organized based around sea freight. The amount of airfreight was reduced from 12.9 percent in 2015 to 5.3 percent in 2016, resulting in significantly fewer emissions. This decrease in airfreight is based on stabilization in the supply chain, focus on management solutions and approval workflows for airfreight implemented in 2013. This process helps to identify critical supply chains at an early stage. The appropriate measures can then be taken to transport the goods by sea or rail freight as soon as possible. This minimizes the volume of airfreight tonnage. One example of this strategy is the transport of materials for urgent deliveries by rail from Europe to China instead of airfreight. This cuts down on emissions.

The overall transport costs for incoming deliveries, outgoing deliveries, and other transports amounted to EUR 605,2 million in 2016 (2015: EUR 639,4 million). These figures can be broken down as follows:

Transport Mode <sup>1</sup>	Share (in %)		Freight Costs (in TEUR)	
	2016	2015	2016	2015
Road Transport	65.61	57.01	397,099	364,549
Ocean Freight	18.12	16.24	109,645	103,876
Air Freight	5.27	12.90	31,896	82,456
Expedited Freight	3.02	4.33	18,264	27,699
Parcel	3.83	5.34	23,181	34,168
Inhouse-Transports, local transport	4.15	4.17	25,112	26,695
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>605,197</b>	<b>639,443</b>

<sup>1</sup> Figures of ZF TRW are grossed, based on the best available data basis

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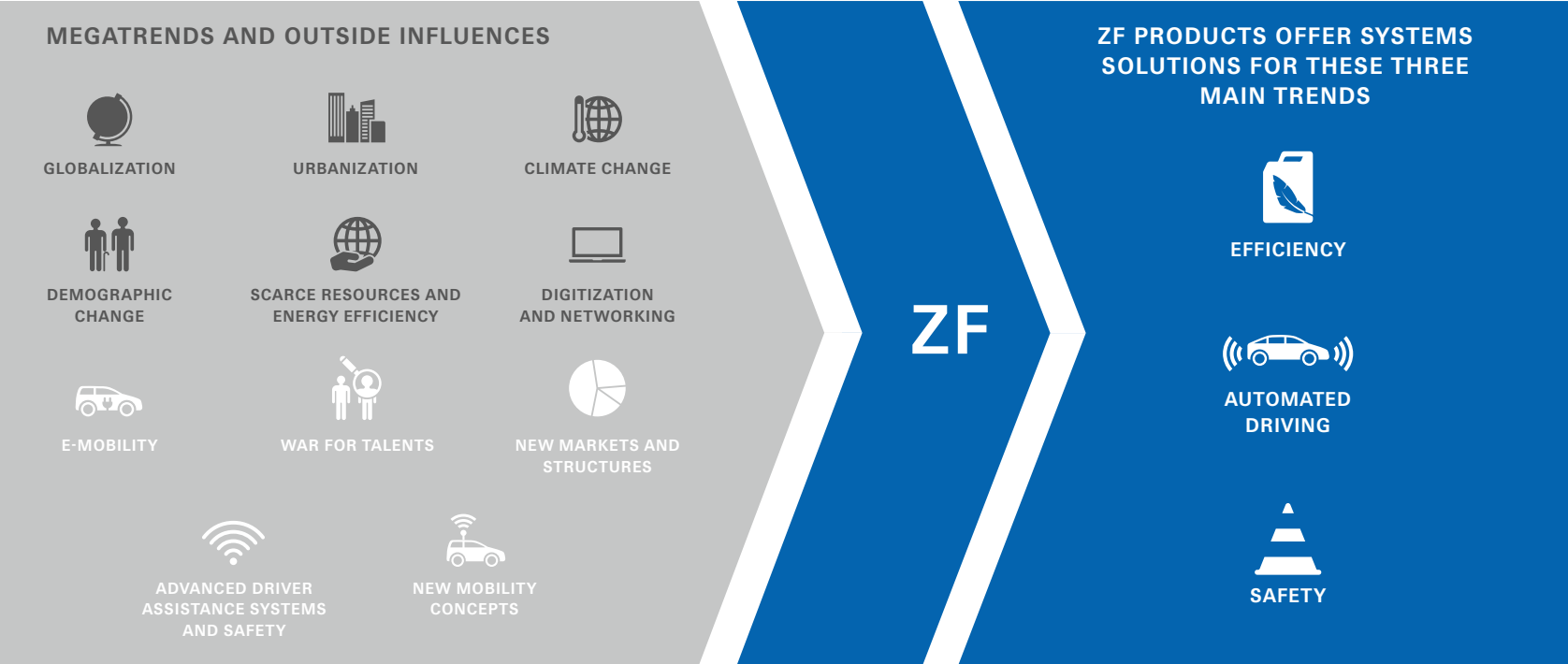
# PRODUCT RESPONSIBILITY

Urbanization, demographic change, sustainable resource utilization are some of the global megatrends that have been making their presence felt for many years. ZF has already charted the course for the future with its Strategy 2025. Following the “Vision 0” for 0 emissions and 0 accidents, ZF products intend to make a strong contribution to reducing emissions and accidents.

As a technology and cost leader, ZF aims to meet the demands of the mobility megatrends of tomorrow, such as efficiency, integrated safety and automated driving. With its “See, Think, Act” guiding principle, the Group has set a clear technology focus. The company’s product

and technology planning is based on market and product roadmaps which are continuously updated. One focal point for activities in 2016 was efficient, intelligent systems for conventional, hybrid and electric drives. Development also focused on sensors for environment recognition, electronic control units, occupant safety systems and automated driving functions.

Efficiency, safety and automated driving are at the core of all our efforts to respond to megatrend challenges. At ZF, sustainability is not another product development objective, rather it is an integral part of our company worldwide.



All of the above trends and ZF's broad product portfolio form the basis for success. Neither chips nor processors alone can steer a vehicle, accelerate it or slam on the brakes. These actions still require intelligently networked mechanical systems and these constitute our core competence. ZF is therefore in the unique position of enabling vehicles to see, think and act.

2016 essentially focused on analysing the two PLM (Product Lifecycle Management) programs of ZF and ZF TRW and on transforming these into a joint platform. At the start of 2017, work began on implementing a joint data platform. This, in turn, will be the basis for jointly coordinated and harmonized PLM processes. Corresponding projects are being prepared.

The new ZF product evolution process (GDPEP – Global Development & Product Evolution Process), which is based on the tried-and-trusted ZF and ZF TRW procedures, was drawn up in 2016. It puts a special focus on environmental friendly product design and will be rolled out throughout the Group in 2017.

## Leveraging innovation

14,550 employees work for ZF Research and Development worldwide. Of these, about 1,600 engineers and technicians work for the ZF Group's Corporate Research and Development Departments at the locations in Friedrichshafen (Germany), Pilsen (Czech Republic), Shanghai (China), Tokyo (Japan) and Northville, Michigan (USA). In 2016, ZF invested EUR 1,948 million in R&D, which is 5.5 percent

of sales (2015: 4.8 percent). This increase compared to the previous year mainly results from more intensified development in the Active & Passive Safety Technology and E-Mobility Divisions.

### Develop solutions for future mobility

Once again in 2016, many of the topics in advanced product engineering were related to CO<sub>2</sub> target fleet values and the required efficiency improvements. With this in mind, ZF is continuously further developing lightweight design solutions for conventional and electrified drives, for example. Projects promoted based on the recommendations of the German Federal Government's National Platform for Electric Mobility (NPE) are now in their final phase. Hardware specially built for these projects caters for newly developed concepts such as, for example, the largescale integration of E-Vehicle drives and range extender concepts. For ZF, the integration of power electronics into drive units is an important step toward more streamlined vehicle design and competitive overall concepts.

### Fundamental principles and technology development driven forward

To reinforce its automated driving expertise in the field of "See", ZF is working intensively on developing, among other things, 3D lidar sensors, imaging radar sensors and highly dynamic interior cameras. In addition, work is being done in particular on technologies that pave the way for new interior concepts in conjunction with automated driving. To this end, ZF is combining innovative sensors with redesigned occupant safety systems. To reinforce "Think", ZF is intensively promoting the development of intelligent electronic control units and vehicle systems.

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To develop safety and automated driving functions efficiently, a virtual development and test environment is being set up in close cooperation with the divisions and external experts involved. It enables sensor systems, functions and actuators to be specified and tested in combination with the vehicle and environment. ZF is therefore making major efforts with its own activities to suitably factor in the megatrend of automated driving.

The synergies of the merger between ZF and ZF TRW are manifold with regard to “Act”. Here, the longstanding experience is being integrated into various development disciplines and technologies from all divisions. Examples include driveline and chassis systems as well as the development of intelligent control systems, such as electric power steering, electric parking brake, electric brake booster and electric pretensioner.

## Handling Materials

At ZF, product related environmental protection starts with material selection. Right from the start, during the product development phase, we look at the total life cycle of a product, including factors such as product materials, utilization phase as well as disposal and recyclability, and design our products accordingly. By reducing material variety, ensuring materials are easily separated and using consistent materials, we continually increase the recyclability of our products. We systematically substitute materials containing hazardous substances. All these principles are anchored by guidelines in the development phase.

ZF’s approach for managing the materials portfolio in the ZF Group was defined particularly by the ZF strategy for expanding into international markets as well as advancing our cost leadership by reducing the number of our suppliers and pooling purchasing volume.

The newly established ZF Materials Warehouse provides information on almost all existing materials, and, in the future, will also classify them as approved and preferred materials. It will only be possible to use a non-approved material in the future after submitting a release application to the Materials Department, which will review the material and check its conformity with the fixed requirements. This procedure optimizes costs, simplifies material selection and guarantees that only materials are used which comply with technical standards and country-specific laws banning certain materials. Materials in the ZF Materials Warehouse will be regularly screened for hazardous substances. This means materials containing hazardous substances can be substituted at the earliest possible stage of materials selection process, reducing the environmental impact of ZF products even before they are manufactured.

### Lightweight technologies

With lightweight construction solutions, a higher energy efficiency can be achieved in product utilization. The ZF Composites Tech Center in Schweinfurt (Germany) founded back in 2013 deals with the advanced engineering of production technologies for fiber-reinforced plastics (FRP). It cooperates closely with Product Development on a host of projects to develop the platform for the volume production of innovative lightweight components made of thermosetting and thermoplastic FRP materials, for example, a passenger car rear axle composed entirely of fiber-reinforced plastics material. If increased

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energy efficiency from reduced vehicle weight, for example, reduces consumption by 0.5 liters per 100 kilometers, this cuts CO<sub>2</sub> emissions by just under three tons per passenger car over a service life of 250,000 traveled kilometers.

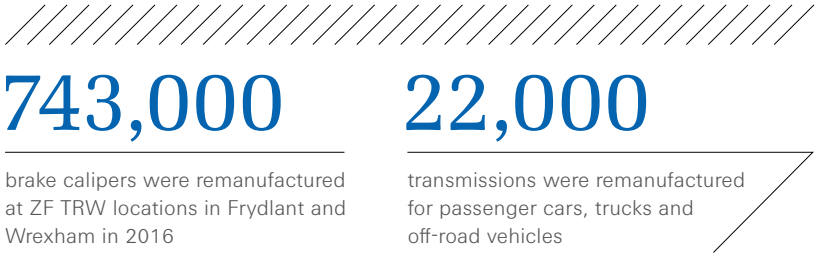
### Material and life-cycle analysis

Product responsibility for ZF also means a critical analysis of used materials, especially when the material is as energy intensive in its production, as carbon and glass fiber materials are, and challenging to recycle. Fiber-based lightweight materials, in particular, can help reduce the environmental impacts of ZF products during their use. On the other hand, the production of the material itself is energy intensive and presents recycling challenges. To ensure that lightweight solutions help minimize the environmental impact of our products, we successfully launched two projects. In the course of these, the entire life-cycle of two fiber-based products are analyzed and compared with their steel and aluminium counterparts.

### Primary and secondary resources

Steel and aluminum are the primary raw materials that ZF procures. A standard ZF product, the 8HP70 8-speed automatic transmission, comprises approximately 58 percent steel and 25 percent aluminum. The rest contains lubricating oil (7 percent), silicon (3 percent), rubber and plastics (2.2 percent) and copper (1.5 percent) as well as other metals, alloys and solvents in extremely small quantities.

ZF frequently uses recycled materials in its production processes. This includes steel from scrap steel and aluminum from scrap aluminium. Recycled oils are also used in production, hydraulic oil, for example. Furthermore, ZF channels a high percentage of waste back into the material cycle via external recycling procedures, especially



scrap metal and metal chips, waste oil, paper and cardboard, wood and demolition waste. As a result of their material composition, ZF products make a disproportionately high contribution to meeting the recycling quotas as stipulated in the EU End-Of-Life Vehicle Directive.

### Remanufacturing

As a leading original equipment manufacturer for automobile producers and suppliers for the aftermarket, ZF has been committed to remanufacturing procedures for decades and, as such, offers a wide range of industrially remanufactured spare parts. Various vehicle parts are reclaimed through a global reclaiming system at the service locations and remanufactured for industrial use. Locally remanufactured spare parts are available for clutches, steering gears, steering pumps and automatic transmissions, among others. Unlike traditional repair work, remanufacturing involves disassembling many products according to a fixed procedure and replacing worn parts. Remanufacturing transmissions and other parts saves production energy by upwards of 90 percent. In 2016, ZF was able to save over ten thousand tons of materials by remanufacturing over 22,000 gear-boxes for passenger cars, trucks and off-road vehicles. Additionally, locations in Frydlant and Wrexham managed to remanufacture over 740,000 brake calipers and 110,000 steering parts and pumps. By remanufacturing ZF manages to save over 20,000 tons of material each year.

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## Cradle to Cradle

Since 1963, our plant in Bielefeld has been committed conserving natural resources by remanufacturing clutches, converters and actuation systems and returning them to the market. Over the years, we have gained valuable insights about closing the loop. Like nature, the Cradle to Cradle concept knows no waste, no renunciation and no restrictions. Biological and technical nutrient cycles provide the right materials at the right time and in the right place.

Ultimately, the result is always better quality. The “from the cradle to the cradle” (C2C) production method directly contrasts the “from the cradle to grave” model, in which material flows often ignore resource conservation. Instead of the linear material flows of today's products and production methods, the Cradle to Cradle design concept looks at redesigning material cycles. This approach creates values that will be preserved for humanity and the environment.

While the remanufacturing process itself has not yet been assessed, the ZF plant in Bielefeld had their Clutch Cover MFZ 430 assessed and was awarded a Certificate in Gold by the Cradle to Cradle Products Innovation Institute. The certificate comprises the categories: material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness.

## Packaging

To comply with respective legislation, ZF is required to take back packaging. For example, ZF does this in Germany by participating in external collection systems which involves taking back and recycling packaging through a dual system or sector solutions (for automobile

repair workshops or for information technology, communications technology, consumer electronics). Through this approach, we have more than exceeded statutory recycling quotas.

In 2016, a total of 165 tons of packaging was taken back from private consumers. This amount decreased due to the sale of Cherry GmbH. Some 3,751 tons of packaging were reclaimed from other business customers.

## Efficient climate protection

The vast majority of energy consumption outside the organization comes from the use of our products. Lower fuel consumption and lower CO<sub>2</sub> emissions are key drivers of efficiency development at ZF. In 2016, our activities focused on efficient, intelligent systems for conventional, hybrid and electric drives. Moreover, these developments are being enhanced with intelligent electronics and increasing vehicle networking.

## Hybrid drives the future

Hybrid technology will not compete with all-electric drives, rather it will act as an important bridge between them and the combustion engine. Based on our extensive experience with conventional drives, we provide solutions for the entire range of hybrid vehicles – covering everything from individual components through to the entire system. Starting with the mild hybrid, which already supports a host of hybrid functions, the lineup extends to the full and plug-in hybrid systems, which feature highly powerful electric motors and suitable power storage devices. This puts them on par with the all-electric range and speed of pure electric vehicles.

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A hybrid-capable basic transmission is based on the volume-produced 8-speed automatic transmission 8HP. With the second generation of 8-speed automatic transmission, ZF was able to further reduce fuel consumption in conventional drives compared to the already highly efficient predecessor model. The 8-speed plug-in hybrid transmission provides all-electric driving up to a speed of 120 km/h – the combustion engine only engages once this speed is exceeded. ZF also recently developed an 8-speed dual clutch transmission (8DT) for sports vehicles. The new transmission for rear-wheel and all-wheel drives features incredibly rapid shift times, high levels of efficiency and flexibility. Power loss can be reduced by up to 28 percent and fuel consumption is also reduced even when not using electric power.

The ZF Group has been able to highlight its energy-saving technology not only in the passenger car sector, but also in the commercial vehicle market with its Innovation Truck. Thanks to intelligent driveline and steering technology and telematics, the driver can use a tablet to electrically operate the semi-truck with trailer easily and reliably from outside the driver's cab. It is equipped with the TraXon Hybrid Drive.

The TraXon Hybrid features an electric motor installed between the combustion engine and the transmission. This parallel hybrid design allows all hybrid functionalities to be realized in a 40-ton truck. One feature particularly attractive for many applications is that in generator mode, the hybrid module can also supply power to other units, during refrigerated transports, for example. Apart from being installed in truck applications, TraXon Hybrid is also suitable for motor coaches in which the hybrid drive demonstrates the same advantages. The networking between the transmission and the GPS

system enables a predictive driving strategy that ideally adapts the shift sequence to topography, thus realizing further fuel savings. The ConAct clutch actuation mounted on the input shaft switches gears with exceptional speed, precision and smoothness. And with its modern housing and specific internal design improvements, TraXon is in total 6 dB – about one third – quieter than its predecessor.

#### The future of electric cars

In 2015, approximately 1.3 million electric cars were registered worldwide – around 70 percent more than the year before. Although the number of electric cars in the overall market is still small, the increasing importance of e-mobility is impossible to overlook as the driving power of the 21st century. ZF is taking a strategic approach and pooling its power of innovation in its newly created E-Mobility Division.

When it comes to electric cars, the main issues for potential owners to overcome are the short driving distances and short charging cycles. Even when drivers do find a charging station, the multiple types of charging stations with different charge card and payment systems frequently prove to be too much. In response, ZF has joined forces with partners to develop the blockchain-based Car eWallet featuring several convenient payment and transaction functions.

The Car eWallet will allow users to pay for fees while on the go. The fees for charging electric car batteries are automatically paid without any manual payment transactions. The capability to carry out micropayment transactions on the go opens up possibilities such as inductive charging when the car is waiting at a red light or at a pedestrian crossing which makes 'charge on the go' more attractive for

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power suppliers. The digital eWallet can also accept payments just like a real wallet. There are also plans to authorize vehicle access for third parties. Rather than standing idly in a parking lot, the Car eWallet can make cars available for use by car-sharing portals and collect fees from temporary users.

### Emission-free and quiet bus transport

Efficient public transport is a key element when it comes to reducing traffic congestion in metropolitan areas and emissions. The company is focusing on all-electric drive solutions for urban vehicles and hybrid technologies for use in long-distance transport applications. The latest development is the electric central drive CeTrax, which can be used in delivery trucks and different bus applications in city centers. The new all-electric central drive moves the vehicle from a standstill to a final speed of up to 100 km/h, comfortably and without interrupting the drive torque. Increased passenger comfort comes from its low-noise operation, acceleration free of tractive force interruptions and quieter vibrations on the driveline. In contrast, the AVE 130 electric portal axle for city buses with its electric drive near the wheels has already been deployed in serial production.

ZF has expanded its portfolio to include drive controls and inverters, so that along with components, it can now offer vehicle manufacturers complete drive systems for electric buses.

### Clean energy

ZF does not only deliver solutions to reduce the local emissions on and off the road, ZF Wind Power transmissions also help to reduce CO<sub>2</sub> emissions of electricity supply itself: ZF is a globally established designer, manufacturer and supplier of reliable, custom-built gear-

boxes for multi-MW wind turbines with a power capacity ranging from 0.85 to 8 MW. Offering reliable transmissions in combination with a global service network, ZF Wind Power makes wind energy even more competitive. The acquisition of the industrial gears and wind turbine gearbox segments of Bosch Rexroth AG in 2015 further strengthens ZF's position in the wind power industry.

### Efficient fleet operation

The Openmatics telematics solution enables fleet operators to optimally utilize their trucks or buses to reduce emissions. An on-board operating system collects and transfers vehicle and vehicle-handling data. Thanks to a number of interfaces, Openmatics can exchange data with all relevant vehicle systems. This means that the telematics service can be used for fleet management and for passenger information, vehicle diagnosis and multimedia applications. Another advantage is the platform's open architecture. Openmatics is manufacturer-neutral and third party providers such as vehicle manufacturers, component providers or other application developers can also program and install their telematics services as Openmatics apps. Finally, tailor-made apps make it possible to identify fuel-inefficient vehicles and determine potential savings.

## Automated driving

The traffic sector causes approximately a quarter of all global greenhouse gas, with individual city transport contributing a large share. In response to this, intelligently connected vehicles with automated ZF components offer the greatest possible city center mobility combined with low emission values.

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### Advanced urban vehicle

ZF can demonstrate the potential of intelligent networking between mechanical components and sensors with its all-electric concept vehicle.

The basic idea of the smart parker is the perfect interaction between driveline and chassis, combined with an intelligent system network. The turning angle of the front wheels is extreme at 75 degrees – and verges on a right angle of 90 degrees. A specially designed front axle combined with a customized electric power steering system and other design changes to the wheel housing made this tight turning angle possible. Conventionally powered vehicles would be unable to handle such a tight turning angle – they could not perform it from a standing start and would literally “trip over” their turned-out front wheels. Not so with the Advanced Urban Vehicle. The two electric motors integrated in the rear axle mounted near the wheels power the vehicle with a total of 80 kilowatts of output, delivering a top speed of 93 mph.

The torque vectoring system distributes the torque individually to each wheel. If the left wheel stops moving while the right wheel moves forward, the car, including its rear end, moves to the left – and in doing so, supports the left-hand drive of the tightly turned front wheels. This interaction between hardware and software, chassis and steering, drive and system network makes it possible for the 12-foot Advanced Urban Vehicle to slip into a parking space just over 14 feet long in a single move. It also has an exceptionally tight turning circle of 21.33 feet, which means that a quick U-turn on a two-lane road is no problem at all.

### ZF Future Study – The last mile

In 2016, the Fraunhofer Institute of Material Flow and Logistics (IML), in cooperation with ZF, conducted a 360-degree study on “last mile” logistics, focusing on customer expectations, legal and spatial framework conditions as well as technical trends and their impacts.

Same-day delivery is already the standard and is trending toward same-hour delivery. The main customers using e-commerce today are young people in 1- or 2-person households, with this demographic growing continuously. Customers want increasingly fast delivery, and not just for fresh products. These demands can only be met with shorter and smarter logistics paths. While intelligent algorithms will be able to anticipate orders and transport requirements, distribution remains challenging.

Findings show that the commercial vehicle industry can lead the way in addressing automotive megatrends such as e-mobility and autonomous driving. That’s because transport operators need to synchronize customer requirements, framework conditions and available options in a unique way.

The authors of the ZF Future Study believe that new technologies will enable innovative forms of transport to emerge, or even make transport superfluous, thus triggering the greatest changes. For instance, 3D printing will enter the mainstream. Additive processes can manufacture many goods on the spot, avoiding time-critical transports. 3D printing shops are one conceivable development, similar to the photocopying shops that thrived back in the days when not every household owned an ink-jet printer.

The study also identifies a big role for autonomous driving, although drivers will still be necessary. Their job will change, because the transport vehicle will automatically follow them from house to house, as an example. In rural areas, autonomous delivery vehicles can reduce the high cost pressure on logistics companies struggling with an increasing shortage of drivers. And road-bound transport robots can also be used for the last mile in urban areas. Researchers estimate that up to 400 million package deliveries will be made throughout Germany by 2030. Safety concerns, however, will keep transport drones restricted to niche activities.

Electric motors will make overnight deliveries possible because they will be done quickly and quietly on the last mile. However, at least in the near future, internal combustion engines will remain in use outside the major urban centers. The reasons for this are driving distance and economic constraints.

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## Highly automated driving

When considering highly automated driving, the vehicle becomes a chauffeur. It stays in its lane, determines the distance to the vehicle in front and initiates braking and evasive maneuvers. Automated assistance systems from ZF are already establishing the platform for future driving today. A cloud-based driver assistance function stores route and vehicle handling data for networked driving. This data is used for a variety of functions, including optimizing the cornering speed for greater energy efficiency.

In 2016, the Innovation Tractor made its debut as the first innovation vehicle in the offhighway segment. Essential elements include the automated hitching of trailers or other machinery, pedestrian protection and traction optimization thanks to an electric trailer axle. The lessons learned are being further developed in innovation projects in the Industrial Technology Division. Moreover, developments in the commercial vehicle sector regarding driver assistance and automated driving are being systematically followed up and presented to the public in the Innovation Truck. The Evasive Maneuver Assist function demonstrated an automated assistance system. It could prevent serious rear-end collisions at the end of a traffic jam, for example, which is a key accident scenario in the commercial vehicle sector. The automated hitching of commercial vehicles in the depot was also demonstrated in a more advanced development phase last year, thus raising the level of automation.

## Integrated safety

When it comes to products in the mobility area, safety is paramount. Quality and safety are high priorities at ZF.

Our ZF4Q quality strategy is derived from the ZF 2025 corporate strategy. The ZF Quality Management System is based on three elements: Quality Planning for prevention, Quality Assurance to secure the current volume production, and Quality Management to shape processes and structures. The goal is to implement all processes, both industrial as well as business processes, at a high level of maturity and evaluate them for ongoing improvements, in line with the ZF Production System.

Our products are subject to quality and safety management procedures which are codified in our Global Development and Product Evolution Process (GDPEP). Group directives implement processes for adapting specifications to specific products. Appropriate testing is done at different points in the project progress, including testing components individually, in assemblies, and in overall systems on test benches under the relevant duty cycles. We have processes in place to monitor our products in the field and work with our customers when potential issues arise. We provide quality training for employees at ZF Q Academy, and employees are empowered to raise potential product performance issues.

Our uncompromising approach to product quality continues in manufacturing. In the development process, we identify requirements specific to the production process. Service concepts are also designed

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during the development process and then implemented by trained Customer Service personnel. These efforts promote stable processes in production at ZF manufacturing locations worldwide.

### SEE – THINK – ACT

ZF's see, think, act approach furthers safety in our products.

**See** – Forward-looking cameras and 360-degree radar sensors monitor complex traffic situations, including the potential to detect passing cars and pedestrians crossing the road.

**Think** – The central control unit processes information collected by installed sensors and activates the appropriate safety functions, such as the automatic emergency braking system or airbag deployment.

**Act** – Actuators turn electric commands from the control units into mechanical movements such as braking maneuvers. Recuperation makes it possible to convert part of the kinetic energy back into electric energy which can be used to charge the battery of a hybrid or electric vehicle.

One of ZF's latest offerings is X2safe, an application with an intelligent algorithm that warns its user of a potential collision. Using GPS data and data from sensors in the devices, X2Safe is designed to calculate if two road users might collide and warns both road users on time. The more people and vehicles are connected by such an interactive safety network, the more effective the accident avoidance. Contrary to distance warning systems based on radar technology or systems with cameras, X2Safe does not simply react if a hazard is visible.

Instead, the algorithm seeks to register and analyze the movements of road users even if they are hidden behind parked vehicles or around a corner. X2Safe then calculates the point of the possible collision and provides a timely warning, alerting end users to impending hazards. The algorithm learns as it works, enabling it to potentially react even faster to repeating patterns. The warnings are issued optically, verbally or by means of vibration.

## Customer Satisfaction

An extremely close and long-standing cooperation between manufacturers and suppliers is common in the automotive sector. This applies particularly to suppliers providing significant and technologically complex vehicle components. In doing so, they must follow the comprehensive specifications of the manufacturers that are often drafted together. Delivery reliability and the ability to innovate are important criteria for the customers. Since a large number of vehicle innovations originate from suppliers, R&D activities are crucial for long-term customer satisfaction and business success. Every new order should be perceived as an indicator of customer satisfaction.

As part of the introduction of key account management for the Group in 2015, we implemented a global Voice of the Customer (VoC) survey with a pilot customer from Europe. The VoC is an independent assessment of customer satisfaction carried out by an independent, external, global service provider. This is intended to ensure a systematic approach to information definition, collection, and analysis, and facilitate data comparability over time. The results have highlighted

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important areas for improvement that will allow us to develop precise improvement actions. Based on the results of the survey, we have decided to continue the VoC surveys with other important customers going forward.

**Customer information**

ZF operates chiefly in the B2B area and supplies components for installation in end-customer products. As our products are not visible to the end consumer, product labelling is of little importance. We supply our customers with data and information about our products and the materials used to ensure proper handling and safe use.

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G4-2	Key impacts, risks, and opportunities concerning sustainability	19 – 21			–
<b>Organizational Profile</b>					
G4-3	Name of the organization	5			–
G4-4	Primary brands, products, and services	6			–
G4-5	Location of the organization's headquarters	5			–
G4-6	Countries with significant operations	6/7			–
G4-7	Nature of ownership and legal form	5			–
G4-8	Markets served	6/7			–
G4-9	Scale of the organization	5			–
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G4-11	Percentage of employees covered by collective bargaining agreements	42	3		–
G4-12	Description of the supply chain	67, 70/71			–
G4-13	Significant changes during the reporting period	5			–
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<b>Identified Material Aspects and Boundaries</b>					
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G4-18	Process for defining the report content	23/24			–
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G4-EC1 Direct economic value created and distributed	7/8			–
G4-EC2 Financial implications and other risks and opportunities due to climate change	19–21	7		–
G4-EC3 Coverage of benefit plan obligations	43			–
G4-EC4 Financial assistance received from government	9			–
<b>Aspect: Market presence – Management approach</b>	6–8	6		–
G4-EC5 Ratios of standard entry level wage compared to local minimum wage	42/43	6		–
G4-EC6 Proportion of senior management hired from the local community	38/39	6		–
<b>Aspect: Indirect economic impacts – Management approach</b>	7/8			–
G4-EC7 Infrastructure investments and services provided	8/9			–
G4-EC8 Indirect economic impacts	8/9			–
<b>Aspect: Procurement Practices – Management approach</b>	67/68			–
G4-EC9 Proportion of spending on local suppliers	8, 70/71			–

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G4-EN1 Materials used by weight or volume	75	7, 8		–
G4-EN2 Percentage of materials used that are recycled input materials	75	8		–
<b>Aspect: Energy – Management approach</b>	54–58	7, 8, 9		–
G4-EN3 Energy consumption within the organization	58/59	7, 8		–
G4-EN4 Energy consumption outside the organization	58/59	8		–
G4-EN5 Energy intensity	59/60	8		–
G4-EN6 Reduction in energy consumption	59/60	8, 9		–
G4-EN7 Reduction of the energy requirements of products and services	76–80	8, 9		–
<b>Aspect: Water – Management approach</b>	54–56, 63	7, 8		–
G4-EN8 Total water withdrawal by sources	63/64	7, 8	We report on water consumption by ZF in relation to sales.	–
G4-EN9 Water sources significantly affected	63/64	8		–
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<b>Aspect: Emissions – Management approach</b>	54–56, 60	7, 8, 9		–
G4-EN15 Direct greenhouse gas (GHG) emissions (Scope 1)	60/61	7, 8		–
G4-EN16 Energy indirect greenhouse gas (GHG) emissions (Scope 2)	60/61	7, 8		–
G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3)	61–63, 70/71	7, 8		–
G4-EN18 Greenhouse gas (GHG) emissions intensity	61	8		–
G4-EN19 Reduction of greenhouse gas (GHG) emissions	61/62	8, 9		–
G4-EN20 Emissions of ozone-depleting substances (ODS)	62/63	7, 8		–
G4-EN21 NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions	62/63	7, 8		–
<b>Aspect: Effluents and Waste – Management approach</b>	54–56, 64/65	8		–
G4-EN22 Total water discharge by quality and destination	64	8		–
G4-EN23 Total weight of waste by type and disposal method	65	8	We report on waste volume generated by ZF in relation to sales.	–
G4-EN24 Total number and volume of significant spills	65	8		–
G4-EN25 Handling of hazardous waste	56/57, 65	8		–
G4-EN26 Water bodies significantly affected by discharges of water and runoff	64	8		–

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G4-EN27 Mitigation of environmental impacts of products and services	76–80	7, 8, 9		–
G4-EN28 Reclaimed products and packaging	76	8		–
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G4-EN29 Fines and sanctions for non-compliance with environmental regulations	57	8		–
<b>Aspect: Transport – Management approach</b>	70/71	8		–
G4-EN30 Significant environmental impacts of transports	70/71	8		–
<b>Aspect: Overall – Management approach</b>	66	7, 8, 9		–
G4-EN31 Environmental protection expenditures and investments	66	7, 8, 9		–
<b>Aspect: Supplier Environmental Assessment – Management approach</b>	67–69	8		–
G4-EN32 Percentage of new suppliers that were screened using environmental criteria	67–69	8		–
G4-EN33 Significant environmental impacts in the supply chain	67–69	8		–
<b>Category: Social</b>				
<b>Labor practices and decent work</b>				
<b>Aspect: Employment – Management approach</b>	34	6		–
G4-LA1 New employee hires and employee turnover	32–34	6	Currently, we only report on employee turnover in the ZF Group in terms of regional differences.	–
G4-LA2 Benefits provided to full-time employees	43			–
G4-LA3 Return to work and retention rates after parental leave	35	6		–
<b>Aspect: Labor/Management Relations – Management approach</b>	42/43	3		–
G4-LA4 Minimum notice period(s) regarding operational changes	42	3		–
<b>Aspect: Occupational health and safety – Management approach</b>	46–49			–
G4-LA5 Percentage of total workforce represented in health and safety committees	46/47			–
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G4-LA9 Average hours of training	36–39	6		–
G4-LA10 Programs that support the continued employability of employees	36–41			–
G4-LA11 Percentage of employees receiving regular performance and career development reviews	38/39	6		–
<b>Aspect: Diversity and equal opportunities – Management approach</b>	44/45	6		–
G4-LA12 Composition of governance bodies and breakdown of employees by aspects of diversity	44/45	6	We do not report on the share of minorities in our workforce. This information must be treated confidentially and is not collected for reasons of rights to privacy.	–
<b>Aspect: Equal Remuneration for Women and Men – Management approach</b>	42/43	6		–
G4-LA13 Ratio of basic salary and remuneration of women to men	42/43	6	Quantified data on salaries is not published as it is subject to confidentiality.	–
<b>Aspect: Supplier Assessment for Labor Practices – Management approach</b>	67–69			–
G4-LA14 Percentage of new suppliers that were screened using labor practices criteria	67–69			–
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G4-HR2 Employee training on human rights issues	9/10, 30	1		–
<b>Aspect: Non-discrimination – Management approach</b>	44–46	6		–
G4-HR3 Incidents of discrimination and corrective actions taken	45	6		–
<b>Aspect: Supplier Human Rights Assessment – Management approach</b>	67–69	2		–
G4-HR10 Percentage of new suppliers that were screened using human rights criteria	67–69	2		–
G4-HR11 Significant human rights impacts in the supply chain	67–69	2		–
<b>Society</b>				
<b>Aspect: Local communities – Management approach</b>	52			–
G4-SO1 Percentage of operations with implemented local community engagement, impact assessments, and development programs	52/53	1		–
<b>Aspect: Anti-corruption – Management approach</b>	27–30	10		–

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G4-SO5 Confirmed incidents of corruption and actions taken	29	10		–
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G4-SO7 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	28/29			–
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G4-SO9 Percentage of new suppliers that were screened using criteria for impacts on society	67 – 69			–
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G4-PR5 Results of surveys measuring customer satisfaction	81/82			–

UNGC = United Nations Global Compact

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**ZF Friedrichshafen AG**

D-88038 Friedrichshafen

Phone +49 7541 77-0

Fax +49 7541 77-908000

[www.zf.com](http://www.zf.com)

**Contact**

Christine Betz

ZF Friedrichshafen AG

Corporate Compliance/Sustainability

Graf-von-Soden-Platz 1

88038 Friedrichshafen

Email: [sustainability@zf.com](mailto:sustainability@zf.com)

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