

# driving sustainability

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## About this report

Our UN Global Compact (UNGC) Progress Report has been keeping our stakeholders informed of Knorr-Bremse's sustainability-focused activities since 2011. The report describes the effect the Company has on the environment and society. It also sets out Knorr-Bremse's sustainability objectives, the key indicators used to measure progress and how we manage our sustainability-related activities. This report covers the 2018 business year (1 January to 31 December); the previous year's data is provided for comparison where available. The report is published annually; the next Sustainability Report is due to be published in April 2020.

[The present UNGC Progress Report includes the mandatory separate Non-Financial Report of the Knorr-Bremse Group, as controlled by Knorr-Bremse AG, pursuant to Sections 315b and 315c of the German Commercial Code (Handelsgesetzbuch – HGB), in conjunction with Sections 289b to 289e HGB. Reportable content was identified in 2018 on the basis of a materiality analysis in compliance with the requirements of the German EU CSR Directive Implementation Act (CSR-Richtlinie-Umsetzungsgesetz – CSR-RUG) (see page 12). The report covers the fully consolidated subsidiaries listed in the Group's accounts; any content that only applies to a specific part of a company within the Group has been identified as such. The material non-financial content of this report within the meaning of Section 289c HGB has been audited by KPMG Wirtschaftsprüfungsgesellschaft AG (limited assurance). This content is marked with the symbols [...] (in body text) and ✓ (for charts and diagrams). Links to other materials and references within the audited content did not form part of the audit, except in the sections entitled 'About Knorr-Bremse' (page 7) and 'Compliance and risk management' (page 15).]

## Publication notes

All references to specific roles in this report should be read as referring equally to all genders. The final deadline for submission of content was 21 March 2019. This Sustainability Report is available in German and English.



## Dear Reader,

Megatrends like urbanization, digitization and eco-efficiency are changing society and mobility at a rapid pace. In these exciting times, Knorr-Bremse's 113 years of history and expertise are paying off, enabling us to be proactive in tackling current and future economic, social and environmental challenges around the world.

In this context, supporting the principles of the United Nations' Global Compact and their Sustainable Development Goals (SDGs) is of fundamental strategic importance. Knorr-Bremse intends to make an effective contribution to the UN's 2030 Agenda for Sustainable Development. Our employees have chosen the following key focus areas from the UN's list of 17 goals: climate protection, sustainable production, good working conditions, gender equality and sustainable innovation. A large number of campaigns on these issues took place on global KB Day 2018.

Knorr-Bremse is continuously increasing its commitment to sustainable development. We accomplish this with our updated materiality analysis. It allocates our spheres of activity to key issues which also form the main topics of this report. In doing so, we are also complying with the legal requirements for non-financial reporting, which have applied to Knorr-Bremse since its successful IPO in October 2018. For the 2018 fiscal year, we have for the first time produced a separate non-financial report to comply with the German CSR Directive Implementation Act.

Our current package of sustainability measures covers all areas of the company. For instance, using renewable energy sources at our production sites reduces CO<sub>2</sub> emissions. We use life cycle analyses to evaluate the environmental impacts of our products. And our employee survey aims to create a better working environment. Many of our sustainability projects are presented in detail in this UN Global Compact Progress Report.

Our work in this area is also recognized by external stakeholders: The ISS-oekom corporate rating agency assessed Knorr-Bremse's sustainability performance in 2018 for the first time and awarded it Prime status, putting us in the top 20% in our peer group. In addition, we managed to improve our EcoVadis rating for sustainability performance from Silver to Gold, which puts us in the top 5% of companies. These excellent results encourage us to continue integrating sustainability into all areas of our company.

When we produced this UN Global Compact Progress Report, we had a clear goal in mind, which was to make our sustainability performance transparent for you and highlight key measures, goals and performance indicators. This emphasizes our commitment to the United Nations Global Compact's ten principles for responsible company management.

We hope you enjoy reading our report.

KLAUS DELLER CHAIRMAN OF THE EXECUTIVE BOARD OF KNORR-BREMSE AG

# About Knorr-Bremse

Knorr-Bremse is the global market leader for braking systems and a leading supplier of other safety-critical rail and commercial vehicle sub-systems. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world.

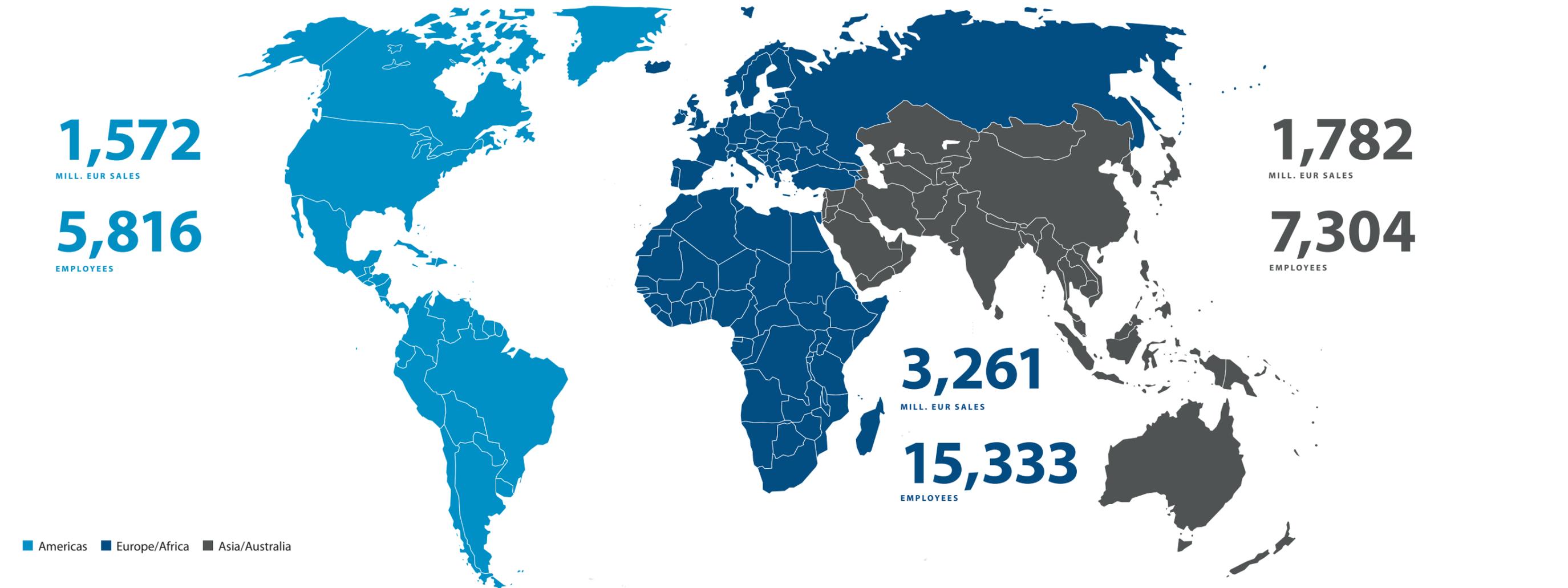
Major global megatrends including urbanization, eco-efficiency, digitization and automated driving offer the promise of long-term, sustainable growth for both the rail and commercial vehicle markets. To its customers, Knorr-Bremse is a byword for quality and reliability. The Company is focused on meeting all local regulations and standards in both of these sectors, acting as a global partner for vehicle manufacturers and operators alike.

As the leading partner for braking, entry and HVAC systems, as well as a range of other sub-systems, the Rail Vehicle Systems division provides equipment for passenger and freight trains, light rail vehicles, metro trains and other vehicles. Knorr-Bremse is constantly driving connectivity both within and between the various sub-systems. This is also true of our Commercial Vehicle Systems division, which supplies braking systems and vehicle dynamics solutions, including driver assistance and automated driving systems, for trucks, buses, trailers and agricultural vehicles.

Local content is a key part of Knorr-Bremse's strategy. Our diversified global presence with a high degree of local value creation ensures Knorr-Bremse remains an agile company with an ideal cost structure and automatic protection against currency fluctuations and trade barriers.

With a history dating back over 110 years, Knorr-Bremse is one of Germany's most successful industrial companies. In 2018, Knorr-Bremse's global sales totaled EUR 6.6 billion.

Some 28,400 employees at over 100 sites in more than 30 countries use their competence and motivation to satisfy customers worldwide with products and services. In October 2018, Knorr-Bremse successfully listed on the Frankfurt Stock Exchange (Prime Standard). You can find more information about Knorr-Bremse in the Management Report included in our 2018 Annual Report, in the chapters entitled 'Overview of the Group' and 'Business Model/Structure of the Group'.



■ Americas ■ Europe/Africa ■ Asia/Australia



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## Strategy and Management

Knorr-Bremse is committed to sustainable corporate governance. This commitment applies to our products and the way they are manufactured, as well as to our relationships with our employees, the environment and society as a whole. At the same time as examining and continuing to develop our approach to key CR issues, we place a particular emphasis on our contribution towards upholding human rights and the United Nations Sustainable Development Goals. We work closely with our employees and external stakeholders on these topics.

At Knorr-Bremse, sustainable and responsible corporate governance is part and parcel of our identity. Our vision creates a shared understanding of our objectives, while our values provide the basis for our behavior and describe who we are. Internal guidelines and strategies set out how these values should be put into practice in our day-to-day working lives.

more reliable, safer and more efficient. We are driven by our desire to create added value for our customers at the same time as making a positive contribution to society.

**Our corporate values:** Knorr-Bremse's five core values are Entrepreneurship, Technological Excellence, Reliability, Passion and Responsibility. Together, they form the foundation for responsible behavior on the part of all our employees.

**Our vision:** We are the global driving force behind innovative and sustainable systems that make mobility and transport

### ✓ VALUES AND CORPORATE RESPONSIBILITY GUIDELINES



## PRINCIPLES AND PROCESSES FOR STRATEGY AND MANAGEMENT

[Our internal guidelines provide a basis for the behavior of all employees in all parts of the Company. They set out exactly how our values should be implemented in our everyday working lives.

- Our CR guidelines set the principles and strategic objectives for responsible corporate governance within Knorr-Bremse.
- Our Code of Conduct defines our understanding of responsible behavior for all our employees worldwide.
- Our Supplier Code of Conduct demonstrates our commitment to fair and sustainable business practices within our supply chain.
- Our Purchasing Quality Standards set out what we expect of our suppliers, including in terms of sustainability.
- Our Occupational Health, Safety and Environmental Protection policy represents a commitment to the highest possible standards.
- Our Leadership Guidelines serve as a guide for successful employee management and demonstrate what HR responsibility at Knorr-Bremse should look like in practice.
- The Principles for Social Commitment provide the framework for our community initiatives at site level.

Our sustainable form of entrepreneurship is also oriented towards international guidelines and conventions. Key external documents for Knorr-Bremse include the United Nations (UN) Guiding Principles on Business and Human Rights, the International Association of Public Transport (UITP) Charter for Sustainable Development, the Code of Conduct of the German Rail Industry (VDB) and the UN Global Compact, which the Company signed in 2010. In 2018 we further underlined our commitment to safer transport by signing the European Railway Safety Culture Declaration.]

## CORPORATE RESPONSIBILITY STRATEGY

[For Knorr-Bremse, commercial success goes hand in hand with consistently responsible behavior in relation to our staff, our partners, the environment and society. Our CR program, our espousal of the UN Sustainable Development Goals, and our respect for human rights worldwide serve to embed this commitment to responsible behavior at strategic level within the Company.

### Corporate Responsibility activities and organization

We aim to make Knorr-Bremse's structures and processes significantly more sustainable by 2020. Our CR strategy provides a stable framework for achieving this objective. It is sub-divided into the six areas of activity around which this report is structured. They are: Strategy and Management, Products and Partners, Employees and Leadership, Environment and Climate, Commitment and Society, and Communication and Cooperation. The strategic issues we address within these six areas are drawn from the results of our materiality analysis (see page 12) and the United Nations Sustainable Development Goals (SDGs) (see page 14). Our due diligence procedures for the key issue of human rights are based on the United Nations Universal Declaration of Human Rights (see page 16). All of these issues are specifically addressed within Knorr-Bremse's CR program. The program is approved by Knorr-Bremse's Corporate Responsibility Council (CR Council) and its progress is regularly reviewed. Unless otherwise stated, all relevant issues are reported to the Executive Board via the CR Council.

The Corporate Responsibility department is responsible for sustainability, and reports directly to the Executive Board. The CR Council, which meets twice a year, discusses objectives related to the strategic issues identified and decides on implementation measures. The CR Council consists of one member of the Executive Board, Management Board representatives from each of the Company's two divisions, the Chair of the charitable association Knorr-Bremse Global Care, and the head of the Corporate Responsibility department. Reports on CR projects within the Company's various specialized departments are made directly to the CR Council. This organizational structure ensures that sustainability is firmly established at the highest levels of decision-making within the Group.]

## MATERIALITY ANALYSIS AND STAKEHOLDER INVOLVEMENT

A materiality analysis helps to identify the priority issues the Company should focus on in order to fulfil its responsibility to meet environmental and societal challenges. The results highlight the most important requirements within the individual Knorr-Bremse areas of activity, both for the long-term commercial success of Knorr-Bremse and for the Company's stakeholders. Knorr-Bremse engages in an active dialogue with these stakeholders through its communications activities and membership of professional associations.

### Updated materiality analysis in accordance with the German CSR Directive Implementation Act

[Under the CSR Directive Implementation Act (CSR-RUG), all information relevant to the Company's performance, results and financial position must be formally reported, along with any repercussions of the Company's business activities that might affect non-financial issues. In July 2018, CR management and managers of specialized departments held a workshop to analyze these potential negative repercussions of Knorr-Bremse's activities. The workshop also considered the severity of any potential effects and how likely they were to materialize in reality. In conjunction with Risk Management, a joint definition of risk was drawn up, taking into account the business environment. Any potential negative consequences of business activities for aspects of the individual issues identified are reported, as well as any measures taken by the Company to avoid these negative consequences (overall risk assessment). No reportable net risks were identified beyond the scope of this analysis.

As part of preparations for the workshop, and within the framework of our six areas of activity, the issues identified in the existing Knorr-Bremse materiality analysis (conducted in 2014) were assessed against external sustainability standards and frameworks and compared with the issues identified as significant by our peer group. The initial list of issues identified was checked for completeness and consolidated into a final list of 13 non-financial issues relevant to Knorr-Bremse. The heads of specialized departments then worked together with CR Management to assess these non-financial issues. The assessment was based on business performance and results and the overall position of Knorr-Bremse, taking into account revenues, costs and reputational effects as well as the effects of our business activities on the environment and society. The precise wording used to capture these issues was also adjusted during the course of the workshop, and 'Data Protection' was adopted as a fourteenth issue.



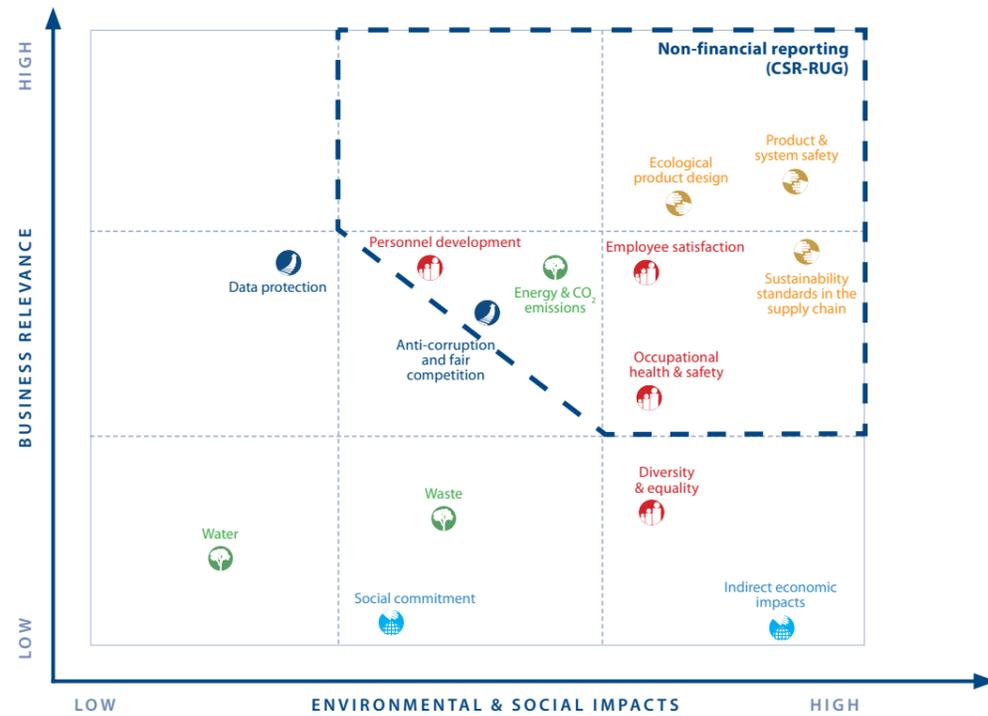
### KNORR-BREMSE AWARDED 'PRIME' STATUS BY ISS-OEKOM AND GOLD STATUS BY ECOVADIS

The sustainability ratings agency ISS-oekom has assessed Knorr-Bremse's sustainability performance for the first time and awarded the Company coveted 'Prime' status. This puts us in the top 20% of comparable companies, and demonstrates our above-average commitment to the environment, social issues and corporate governance. This rating is based on over 100 sector-specific social and environmental criteria, and provides a highly aggregated assessment of overall sustainability and corporate governance.

2018 also saw us improve our EcoVadis rating from Silver to Gold. This outstanding result puts us in the top 5% of all companies assessed by EcoVadis.



✓ MATERIALITY MATRIX 2018 – MATERIAL ISSUES WITHIN KNORR-BREMSE AREAS OF ACTIVITY



CR AREAS OF ACTIVITY



Material issues

The matrix clearly shows that ‘Product and system safety’, ‘Ecological product design’, ‘Sustainability standards in the supply chain’, ‘Occupational health and safety’ and ‘Employee satisfaction’ were all identified as material issues in light of their potential to produce a significant effect and/or because of their relevance to the business. ‘Energy and CO<sub>2</sub> emissions’ is also a key environmental issue, while in the area covered by ‘Economy and Society’, the issues ‘Anti-corruption and fair competition’ and ‘Personnel development’ were also assessed as material. This means that a total of eight issues were assessed as material for the purposes of the CSR. This report focuses primarily on these eight issues, which are covered in the descriptions of our areas of activity and in the chapters Strategy and Management, Products and Partners, Employees and Leadership and Environment and Climate. The index on page 51 provides an overview of how these significant areas for Knorr-Bremse are broken down into categories for the purposes of the CSR-RUG.

A number of additional positive and negative effects of Knorr-Bremse’s business activities were also identified, including ‘Indirect economic effects’ or ‘Diversity and equality of opportunity.’ However, these issues are less relevant to the business, and are therefore not of central importance for the purposes of CSR-RUG reporting. This also applies to the issues of ‘Waste’, ‘Social commitment’, ‘Water’ and ‘Data protection.’ Although the last of these issues was added to the list during the workshop, primarily as a response to the General Data Protection Regulation (GDPR), its current impact on the business was assessed as minor. Nevertheless, the six secondary topics listed above remain an important part of the CR Strategy and the Knorr-Bremse areas of activity. With the exception of ‘Data protection’ they have all therefore been considered in this report, and are covered as far as possible within the framework of the eight issues identified as material for the purposes of the CSR-RUG. ‘Social commitment’ is addressed in a separate chapter.]

Stakeholder involvement

Knorr-Bremse maintains and encourages dialogue with its internal and external stakeholders. Our most important stakeholder groups are our employees, new recruits, customers and suppliers, shareholders, commercial partners, official authorities, trade unions, professional associations, the media, policymakers, non-governmental organizations (NGOs), residents in the vicinity of our sites and representatives of local action groups. Knorr-Bremse maintains a regular and systematic dialogue with stakeholders via its membership of a large number of regional, national and international associations. For example, Knorr-Bremse was represented at Scania Supplier Day in November 2017, and also took part in Deutsche Bahn’s Sustainability Day and the MAN Stakeholder Dialogue in the spring of 2018. In addition, since listing on the stock exchange in October 2018, we have held regular discussions with investors regarding our commitment to sustainability.

KNORR-BREMSE AND THE SUSTAINABLE DEVELOPMENT GOALS

Knorr-Bremse is very much aware of the contribution business can make to meeting the economic, social and environmental challenges of our time, which is why it supports the 17 global Sustainable Development Goals (SDGs) approved by the United Nations. We are already contributing to the SDGs through many of our products, services and other activities. To strengthen this contribution further, we began in 2017 to examine our current contributions to the development goals in more detail. In order to ensure our efforts remained focused and to set a clear direction for the Company, we decided to concentrate our activities on a limited number of specific SDGs, both now and in the future. With this in mind, the following SDGs were selected on the basis of an Intranet survey of employees and discussions at the annual Global Leadership Meeting, which was attended by around 160 senior managers:

SELECTED KNORR-BREMSE MEMBERSHIPS:

- American Public Transportation Association (APTA), USA
- Association of American Railroads (AAR), USA
- Ausschuss Nachhaltigkeit in der Lieferkette im Verband der Automobilindustrie e. V. (VDA), GER
- Automotive Industry Action Group (AIAG), USA
- Automotive Parts Remanufacturers Association (APRA) European Board, USA
- Energieeffizienznetzwerk Oberbayern, GER
- Fachgruppe Umwelt im Verband der Bahnindustrie in Deutschland e. V. (VDB), GER
- Motor & Equipment Manufacturers Association (MEMA), USA
- New York and New Jersey Minority Supplier Development Council, USA
- Stifterverband der Deutschen Wissenschaft e. V., GER
- Sustainable Transport Committee of the Union des Industries Ferroviaires Européennes (UNIFE), BEL

	SDG 5: Gender Equality
	SDG 8: Decent Work and Economic Growth
	SDG 9: Industry, Innovation and Infrastructure
	SDG 12: Responsible Consumption and Production
	SDG 13: Climate Action

Through the activities of Knorr-Bremse Global Care, Knorr-Bremse is also making major contributions to SDG 4 (Quality Education) and SDG 6 (Clean Water and Sanitation).

Our employees are crucial to our commitment to the SDGs, in terms of the new ideas they bring for strengthening Knorr-Bremse's contribution and their personal commitment to global sustainability objectives. It was with this in mind that we dedicated a global Knorr-Bremse Day to the SDGs for the first time this year (see text box). We now plan to build on this event at a global level by embarking on specific projects that will make an additional contribution to the SDGs. Our plans include, for example, a new climate protection strategy and an even greater focus on due diligence in relation to human rights. In addition, specific local objectives and the action required to achieve them have been identified at a number of our sites.



#### KNORR-BREMSE DAY DEDICATED TO SDGS

From 'Technological Excellence' to 'Responsibility', the annual Knorr-Bremse Day makes our values tangible for employees across all our sites. At the 2018 event entitled 'Setting the course together. Knorr-Bremse for the Sustainable Development Goals', the SDGs took center stage for the first time. Our staff all over the world engaged with the global sustainability objectives in a range of talks, photographic exhibitions, interactive workshops and SDG-focused games. From a virtual reality film that changed perspectives on global megatrends like climate change, to sporting challenges presented by the SDG goal wall, the event brought the abstract aims of the SDGs to life. A number of demonstrations also showed how Knorr-Bremse products are already contributing to the SDGs, as well as providing insights into the latest developments, such as the workplace of the future. In time-honored fashion, the event was also used as an opportunity to recognize employees for their outstanding performance by presenting them with Knorr-Bremse Value Awards.

## COMPLIANCE AND RISK MANAGEMENT

[We place great emphasis on integrity and responsible behavior in our dealings with our commercial partners and employees. Knorr-Bremse is determined to ensure compliance with all laws, international regulations and voluntary commitments. This approach serves to protect the Company and its employees, in particular against liability claims and damage to our image and assets. Effective risk management also helps us to identify risks at an early stage and to manage them effectively.]

### Anti-corruption and fair competition

The Knorr-Bremse Code of Conduct sets out the fundamental principles governing our behavior. It is based on our corporate values and the principles of the UN Global Compact, and defines the basis for ensuring our day-to-day business activities are conducted in an appropriate manner. The Code provides a shared definition of responsible business behavior – one that applies across borders. Among other provisions, it includes a complete ban on corruption, including bribery and blackmail, as well as protection for a number of human rights such as freedom of expression, protection against discrimination, and a ban on the use of child and forced labor. These principles and rules are binding for all Group employees. In 2018 we added specific regulations on handling gifts and invitations, anti-corruption measures, conflicts of interest and fair competition.

In 2016, we established a central compliance structure. Within this structure, the Chief Compliance Officer (CCO) reports regularly to the Compliance Committee, which is chaired by the Chief Financial Officer (CFO). The members of the Compliance Committee consult on relevant compliance issues and set priorities for compliance management. Our compliance activity is centered on preventing corruption, ensuring fair competition and avoiding conflicts of interest. These core areas were identified as the result of a comprehensive compliance risk analysis taking into account all relevant business areas and markets. Compliance Officers with responsibility for individual regions support the CCO and strengthen the presence of the compliance organization in Knorr-Bremse's three regions of Asia/Australia, Europe/Africa and Americas. The regional Compliance Officers are tasked in particular with providing advice and training to employees in their regions, handling compliance issues and identifying local risks.

Our whistleblowing system, introduced in 2017, is a key part of our compliance management structure. It allows both employees and third parties to anonymously report criminal activity or serious breaches of the law wherever they occur. The whistleblowing portal is operated by an external service provider using an independent and secure server. It is accessible to all employees and third parties all over the world, and allows incidents to be reported in 31 different countries and in 20 languages. Our guideline for the whistleblowing system sets out the legal framework for the submission of reports and ensures that confidentiality and data protection rules are respected.

The Company's internal audit function also supports the Executive Board in its monitoring duties by providing independent and objective audit services. These audits are designed to help improve corporate processes and to detect any potential breaches of internal rules and guidelines or of legislation. Employees' knowledge of the Code of Conduct is checked as part of routine audits, as is the way the Code is actively communicated to employees by their managers.

### Compliance training

Clear communications and continuous employee training are key requirements for preventing compliance breaches. With this in mind, in December 2017 we introduced a global e-learning package for our Code of Conduct. Available in ten different languages, the package had been completed by over 15,100 employees (around 53% of total employees) across all regions in the Knorr-Bremse Group by the end of the year under review. This figure equates to more than 92% of all employees connected to a Company learning platform. Employees without access to a learning platform received additional face-to-face training to ensure they were familiar with the Code of Conduct, while selected employees in regular contact with external partners, for example those working in our Purchasing and Sales departments, were also provided with additional in-person training on corruption prevention and fair competition during 2018. A new e-learning package on these two areas will be rolled out to these groups of employees in 2019.

### Risk management organization and processes

Knorr-Bremse's position as a global company and the worldwide leader in braking systems brings both opportunities and risks. The goal of risk management is to minimize the risks and exploit the opportunities in order to increase the long-term value of the Company. Early identification of potential risks gives us more scope to manage them effectively.

The structure and procedural organization of risk management is in line with our overall organizational structure, and is based on a Group guideline that includes a clear definition of responsibilities and reporting structures. Potential risks are identified on a quarterly basis as part of worldwide risk inventories. All Group companies are involved in this process, with individual sites reporting any potential risks to the relevant regional manager, who in turn passes this information on to the divisional level. Our regular risk reporting procedures include the production of a comprehensive risk report, which is submitted to the Executive Board of the Knorr-Bremse Group on a quarterly basis and discussed in detail at a meeting of the Executive Board.

Our aim is to consider all opportunities and risks related to our business activities very carefully. Knorr-Bremse therefore encourages all its employees to take a pro-active approach to reporting risks, and requires them to handle such risks in a responsible manner. To ensure that significant risks are identified as soon as possible, there is also an internal ad-hoc reporting process in addition to the routine reporting procedures.

You can find a detailed description of our risk management system, including the most relevant risks, in the Management Report in the chapter entitled 'Report on Risks, Opportunities and Expected Developments' of our Annual Report.]

## DUE DILIGENCE PROCESSES FOR HUMAN RIGHTS

[As a signatory to the United Nations Global Compact, Knorr-Bremse is committed to upholding human rights. Moreover, we also pledge to comply with applicable national legal frameworks, and to abide by the International Labour Organization (ILO) human rights conventions and the United Nations (UN) General Declaration on Human Rights. In order to ensure due diligence on human rights, we base our processes on the UN Guiding Principles for Business and Human Rights and the German government's National Action Plan for the Economy and Human Rights (NAP). In addition, since 2016 Knorr-Bremse has been publishing a separate declaration on the Group's website setting out our guidelines on preventing modern slavery and people trafficking and the measures we are taking to implement them. This statement fulfils the requirements of the UK Modern Slavery Act.]

Our key principles and rules regarding respect for human rights are set out in Knorr-Bremse's Code of Conduct, which is binding on all employees. The Code is complemented by additional human-rights-related guidelines, such as those in our Code of Conduct for Suppliers, HSE Policy or local

human resources guidelines. These guidelines ensure that our duty to conduct due diligence on human rights is covered by our existing processes, particularly in HR, Purchasing and HSE Management. Our whistleblowing system for breaches of the Code of Conduct also allows us to monitor respect for human rights more closely (see page 16). Our independent central Internal Audit function also examines compliance on selected aspects of human rights at our sites worldwide as part of routine audits.

### Risk and gap analyses for due diligence on human rights

In 2018 we initiated risk and gap analyses with the aim of cementing and building upon our existing processes for due diligence on human rights. The analysis was carried out on the basis of the UN Guiding Principles for Business and Human Rights and Germany's NAP, and covers a number of risks that might arise as a result of Knorr-Bremse's activities. The starting point for this exercise was a risk analysis at national and site level, in addition to potential human rights risks within the value creation chain. We then went on to examine relevant internal guidelines and processes to assess how well they reflected our due diligence requirements on human rights. Interviews conducted with relevant specialized departments and at selected sites provided an insight into the robustness of our current processes. As a result of this gap analysis we have identified a number of areas for improvement and drawn up specific recommendations for action, which are now being implemented step-by-step. The results

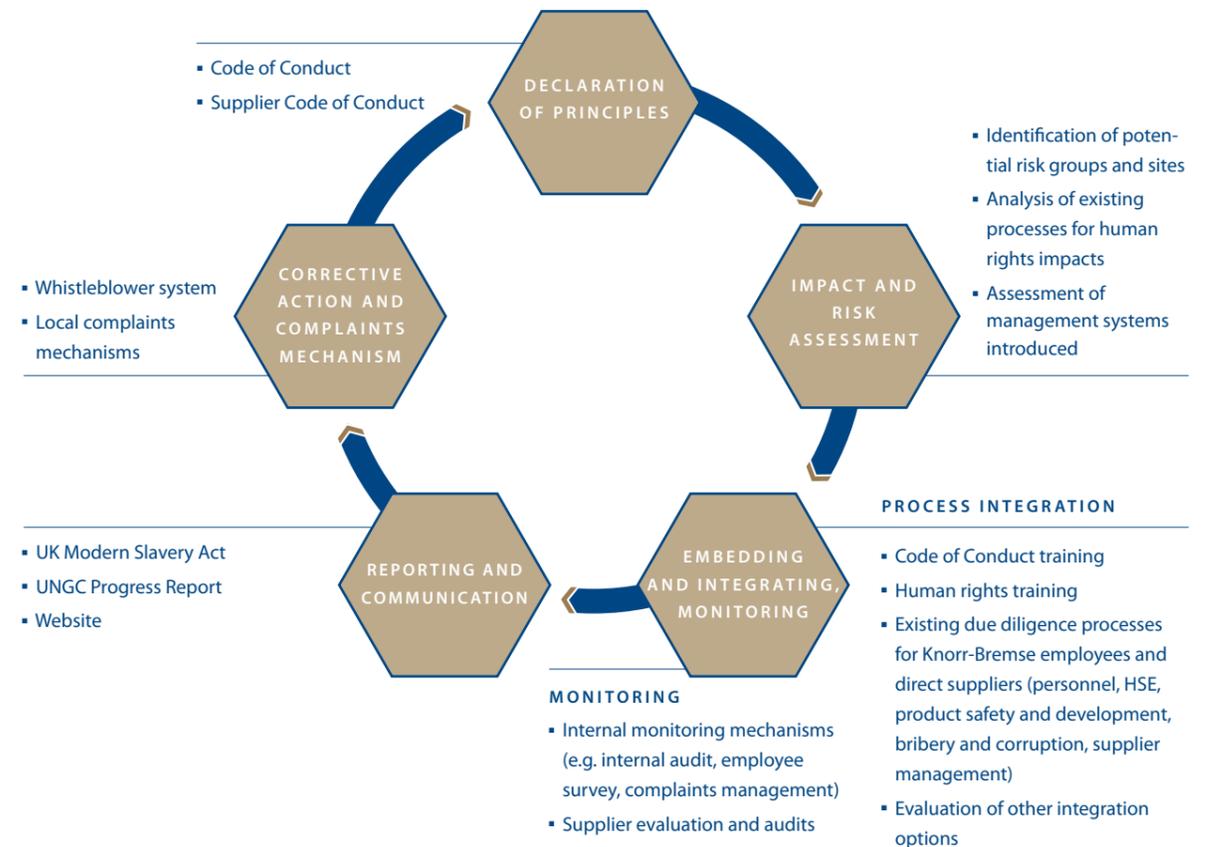
of the analysis show that due diligence regarding employment law for potential risk groups is currently a major focus for Knorr-Bremse. Temporary staff, service providers at our sites and supply chain employees were identified as key risk groups.

In the course of the year under review we built on the processes described here by instigating the following measures to be implemented over the next few years:

- Policy commitment: An expanded commitment to human rights to be included in our Code of Conduct.
- Risk identification: Increased internal data collection to identify potential risks.
- Integration: An assessment of potential effects and an intensified procedural focus on risk groups, including avoidance of human rights risks when recruiting temporary staff.
- Monitoring and reporting: Building capacity in relevant specialized departments and expanding Internal Audit monitoring processes to include additional human-rights-related aspects.
- Grievance mechanisms and remedy: Examining potential expansion of our complaints mechanisms with a view to improved reporting of infringement of legislation and internal guidelines.]



### ✓ DUE DILIGENCE ON HUMAN RIGHTS AT KNORR-BREMSE





- 20 Product and system safety
- 23 Ecological product design
- 26 Sustainability standards in the supply chain



## Products and Partners

Knorr-Bremse makes a significant contribution towards improving safety, efficiency and connectivity on rail and road. To help us play our part in shaping sustainable mobility, we focus on innovative technologies and incorporate sustainability into our product creation process – from the initial vision, via product development and manufacturing, right through to maintenance and remanufacturing. We aim to live up to our social and environmental responsibilities together with our suppliers. Building partnerships with our suppliers and assisting their development are both central to achieving this aim.

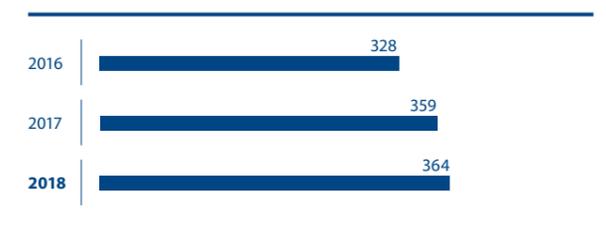
[Along with traffic safety, the megatrends of urbanization, eco-efficiency, digitization and automated driving are set to shape the transport sector for years to come. As the technological leader in braking and sub-systems for rail and commercial vehicles, Knorr-Bremse helps its customers to incorporate these trends into their businesses and to shape the future of mobility. The safety of our products and systems is our top priority. As well as being our core area of expertise, safety is also the key requirement for all our customers, and indeed for all transport users. Knorr-Bremse also wants its products to contribute to environmentally sustainable, energy-efficient operations. By taking active control of these issues we can guard against any negative effects our products might have on road and rail transportation systems and any resultant risks to Knorr-Bremse's revenues or reputation.]

Our ability to innovate consistently over the long term is essential to achieving these aims. With more than 11,000 patents either granted or pending, Knorr-Bremse is a driving force behind innovation in mobility and transportation technology. That is why we again increased our investment in research and development in 2018, to 364 million euros. As of the end of the year under review, the Company employed 4,554 staff in Research and Development.]

### PRODUCT AND SYSTEM SAFETY

[Knorr-Bremse's groundbreaking technologies are making transport systems safer. Our range includes electronic collision-avoidance and vehicle stabilization systems and networking solutions for mechatronic systems. These include braking systems – such as our ABS and EBS systems –

RESEARCH AND DEVELOPMENT EXPENDITURE  
IN EUR MILLIONS



driver assistance systems, pneumatic suspension systems and pneumatic valves. Given that these are safety-critical products, they also present particular risks, and have to be inspected especially carefully. To this end, Knorr-Bremse makes routine use of comprehensive quality planning, quality control and testing procedures. At the same time we use international standards to ensure ongoing improvement of our business processes. Both of our divisions – Rail Vehicle Systems and Commercial Vehicle Systems – are constantly working to further improve levels of both safety and quality.

Vehicle safety is also a prerequisite for the development of automated driving. Vehicles cannot operate autonomously without a range of sensors mapping their surroundings. These systems, which can be radar, video or laser-based, are combined with active intervention in braking and steering systems to enable the vehicle to drive itself. Connectivity adds a third dimension, allowing wide-ranging interaction between individual road users as well as communication between vehicles and other elements of the transport infrastructure. Vehicle-to-vehicle communications, communication between vehicles and traffic infrastructure, and

telematic communications with the operator, GPS systems and other information sources, enable both the commercial and rail vehicle sectors to operate much more efficiently and safely. Knorr-Bremse's systems expertise is actively shaping developments in this area.

### Principles for product and system safety

The fundamental, overarching principles ensuring the quality and safety of our systems are laid down in our vision and in the Knorr-Bremse Code of Conduct. Together with Reliability and Technological Excellence, they are also reflected in our corporate values. Each of our two divisions also has its own safety and quality policies. Continuously improving the quality of products and systems is a major focus, as is the everyday responsibility of every employee to ensure production and working processes remain as safe as possible.]

When developing our products and systems we focus on the following key priorities:

**Safety.** Our products make a crucial contribution to ongoing safety improvements on rail and road all over the world.

**Quality and reliability.** For a manufacturer of safety-critical systems, these two aspects are a top priority. Our products and services are subject to the strictest possible safety requirements, and both the products themselves and the processes behind them meet extremely high quality standards in all areas.

**Customer benefits.** We see our customers as our partners. Proximity to them, wherever they are in the world, allows us to offer tailor-made solutions that we develop continuously alongside our partners.

**Technological expertise.** Knorr-Bremse is a byword for technological competence. Our experience, technical know-how, market knowledge and investment in research and development allow us to offer a wide range of innovative solutions for future mobility.

### Processes and responsibility for product and system safety

[Our comprehensive product and systems safety management structures help us to fulfil all product safety-related requirements throughout the product life cycle – from the development and testing phase to careful supplier selection and manufacturing, right through to the point at which the product is put to use by our customers. The responsibility

for ensuring the safety of products and systems and for taking any necessary action to improve it, lies with senior management, the divisional Quality Management departments, and the departments responsible for the individual products concerned. Regular monthly meetings ensure that the members of the Management Board and the Executive Board are involved in safety-related processes. In both the Rail Vehicle Systems and Commercial Vehicle Systems divisions, a Quality Council meets several times a year to set overarching global objectives and strategies for improving the quality of our products and systems. Individual sites also report on a monthly basis to the quality management organization within the relevant division.

Knorr-Bremse's internal regulations and monitoring activities aim to ensure the quality and safety of all our products and systems. Our specific, process-orientated management systems TruckExcellence (TEX) and RailExcellence (REX) already incorporate the relevant quality standards. Specific safety requirements and regulations are always taken into account whenever new products are designed or developed. This is done by identifying and applying a range of suitable tools, including FMEA (Failure Mode and Effects Analysis), simulations and a range of tests carried out at our in-house test facilities and laboratories as well as in actual vehicles. Responsibility for testing lies with the departments responsible for the products and systems concerned. In the event of a safety-critical incident, the so-called Safety Review Board for Rail Vehicle Systems assesses the risks and advises the Management Board and Executive Board on the appropriate response. The heads of quality control at individual sites are responsible for upholding quality standards in production processes, working alongside the relevant departments within the business. The quality management system is based on international standards. The system for the Rail Vehicles Systems division conforms to the ISO 9001 and ISO TS 22163 quality standards, while the system for Commercial Vehicle Systems complies with the IATF 16949 quality standard.

Compliance with company-wide regulations and procedures on product and system safety is ensured by audits and employee training. Regular reviews and audits are carried out at individual sites and in departments to check compliance and identify where quality and safety standards can be improved, helping us to reach our objective of implementing a 'zero defect' philosophy.

### Objectives for product and system safety

The term 'zero defect philosophy' reflects Knorr-Bremse's overall objective to maximize the safety and quality of our products and services and reduce errors and failures to zero.

This is achieved, for example, by increased efficiency, maximum flexibility and productivity from initial manufacture to actual vehicle operation, maximum delivery reliability, accident prevention and better use of infrastructure. In 2018, 81 Knorr-Bremse facilities worldwide were operating certified quality management systems (either ISO 9001, ISO TS 22163 or IATF 16949). This number is lower than in the previous year (2017: 84; 2016: 75) due to the sale of some sites.]

### INNOVATIONS FOR SAFER ROAD TRAFFIC

With its new braking systems, Knorr-Bremse is taking the next step towards an accident-free future. At the 2018 IAA Commercial Vehicles, two new types of disc brake and a new digital platform for brake control were at the center of attention. Brake control units and wheel brakes provide a platform for a wide range of flexibly configurable safety features, setting new standards in accident prevention. Adaptive cruise control, emergency braking, lane departure warning and blind spot assistance systems all rely on the basic features of the braking system. Their modular software architecture means they can also be easily expanded and safely customized.

A new safety system from Bendix, Knorr-Bremse's North American subsidiary, records dangerous events such as excessive cornering speed or collision warnings, contributing to better analysis of dangers on our roads. The SafetyDirect system analyses a total of 14 different safety-related parameters during journeys, making it a valuable tool for drivers and fleet managers alike. It can also be used to record any serious incidents on video, with the footage being reviewed and analyzed before the truck involved has even completed its journey.



### INCREASED RAILROAD CAPACITY

Growing traffic levels call for increased capacity on rail networks. By combining compact design with new materials and technologies, Knorr-Bremse is developing solutions to increase passenger and freight transportation capacity while maintaining the same levels of functionality and consumption. For example, our Light Weight Caliper with safe-park functionality is a brake caliper designed for particularly weight-sensitive applications. In comparison with conventional calipers, its weight has been reduced by 33%, with the safe-park cylinder alone delivering a 43% weight reduction in comparison with standard spring-based brake cylinders. This reduction in weight creates additional freight capacity. Sanding systems used to improve traction between the wheels and the rails are also helping to increase capacity on rail networks. The LRV Sanding System varies the volume of sand according to the speed of the vehicle, allowing operators to use up to 30% less sand and shortening braking distances by up to 50%.

### A PARTNERSHIP FOR HIGHLY AUTOMATED OPERATION OF COMMERCIAL VEHICLES

Knorr-Bremse and Continental have agreed a partnership aimed at developing a complete system for highly automated driving (HAD) of commercial vehicles. The collaboration covers all the features required for driver assistance and highly automated driving systems. The system consists of environment recognition, driving planning and decision-making, as well as control of the vehicle's actuator systems (such as steering and brakes) and human-machine interaction. The collaborative venture is currently focused on automated convoys (platooning). From early 2019, a jointly-developed demonstration vehicle with built-in platooning functionality will be showing what it can do as a 'highway pilot', leading a convoy of three coupled trucks from different manufacturers.

The progress being made with HAD is directly contributing to safer, more efficient driving. Platooning allows fuel savings of up to 15% and a corresponding reduction in emissions, while automating individual actions behind the wheel, such as lane changing, driving around roadworks or emergency braking, will lead to safer commercial vehicles in the future.

## ECOLOGICAL PRODUCT DESIGN

[Energy efficiency and other sustainability-related characteristics such as operating noise can now determine a product's competitiveness in the market – and are set to become even more important in years to come. This is one reason why meeting environmental and climate protection requirements is a research and development priority at Knorr-Bremse. Our aim is to make mobility on road and rail more energy-efficient while at the same time reducing emissions and conserving resources.]

### Principles and guidelines for ecological product design

Knorr-Bremse is subject to requirements from both regulators and customers stipulating that environmental sustainability must be taken into account during product development. Examples of such requirements include avoiding the use of hazardous substances, reducing emissions and weight and extending product service life. Knorr-Bremse groups these factors together under the heading 'eco-design.' At Knorr-Bremse we are systematically refining our processes to ensure that eco-design considerations are proactively integrated into product development. This is done with the aim of identifying and subsequently reducing any potential impact that our products and systems could have on the environment.

To examine potential environmental impacts, such as product-related CO<sub>2</sub> emissions, we carry out life cycle assessments in accordance with international standards including the ISO 14040/14044 life cycle assessment standard and the Product Category Rules of European rail industry association UNIFE. In addition, specific requirements regarding issues such as materials use or easy product disassembly are set out in our in-house design guidelines, for example the Commercial Vehicle Systems division's Remanufacturing Product Design Guideline. In order to optimize the design of our products, especially with regard to undesirable impacts such as noise emissions, we engage in dialogue and direct contact with stakeholders and experts such as local noise abatement campaigners or vehicle operators.]

#### WHISPER BRAKES GAIN IN POPULARITY

Knorr-Bremse's LL composite brake pads, or 'whisper brakes', are an innovative solution for reducing noise emissions. LL stands for Low Friction, Low Noise – unlike conventional pads, the LL pads do not roughen the surface of the wheel during braking. This reduces noise emissions from moving freight trains by some 10 dB(A), which is perceived as a halving of the noise level by the human ear. In Germany, DB Cargo is looking to convert its fleet of approximately 55,000 freight cars to LL composite brake pads by 2020. Our K pads achieve a similar effect in new-build vehicles. For some years now, it has been compulsory for new vehicles in the EU to be fitted with this type of pad.

#### FLEXIBLE ELECTRIC BUS CHARGING

Knorr-Bremse subsidiary Kiepe Electric is committed to advancing the electrification of bus fleets across the globe using its pioneering In Motion Charging concept. In Motion Charging allows trolleybuses to operate on parts of the route where there are no overhead lines. The buses' batteries are then recharged when they return to an overhead section. This ensures they can operate round the clock, 24 hours a day. As well as being climate-friendly, the quiet, zero-emission electric buses are popular with both passengers and local residents.

### Structures and processes for ecological product design

[Like product safety, ecological product design is a cross-cutting issue. At an organizational level, it is established within the business units that support product development in both divisions, allowing development engineers to incorporate aspects of ecological product design into their everyday work. In the Rail Vehicle Systems division, specialists in eco-design work together with developers to assess product ideas on the basis of sustainability criteria: for example whether the product contains any hazardous substances, the emissions produced by the production process and during use, suitability for recycling and ease of maintenance. We are currently implementing a similar system for new developments in the Commercial Vehicle Systems division.]

In 2017, a cross-divisional eco-design working group was established in order to create synergies between the two divisions. Every month, personnel from the two divisions meet representatives from the Corporate Responsibility and Remanufacturing departments. The aim of these discussions is to develop standards and processes to enable the integration of harmonized eco-design concepts into product development operations within both divisions. In 2018, they focused on the development and piloting of our first training module on environmental and social product regulations (e.g. REACH, conflict minerals, etc.). A common standard for life cycle assessments in both divisions is also under development.

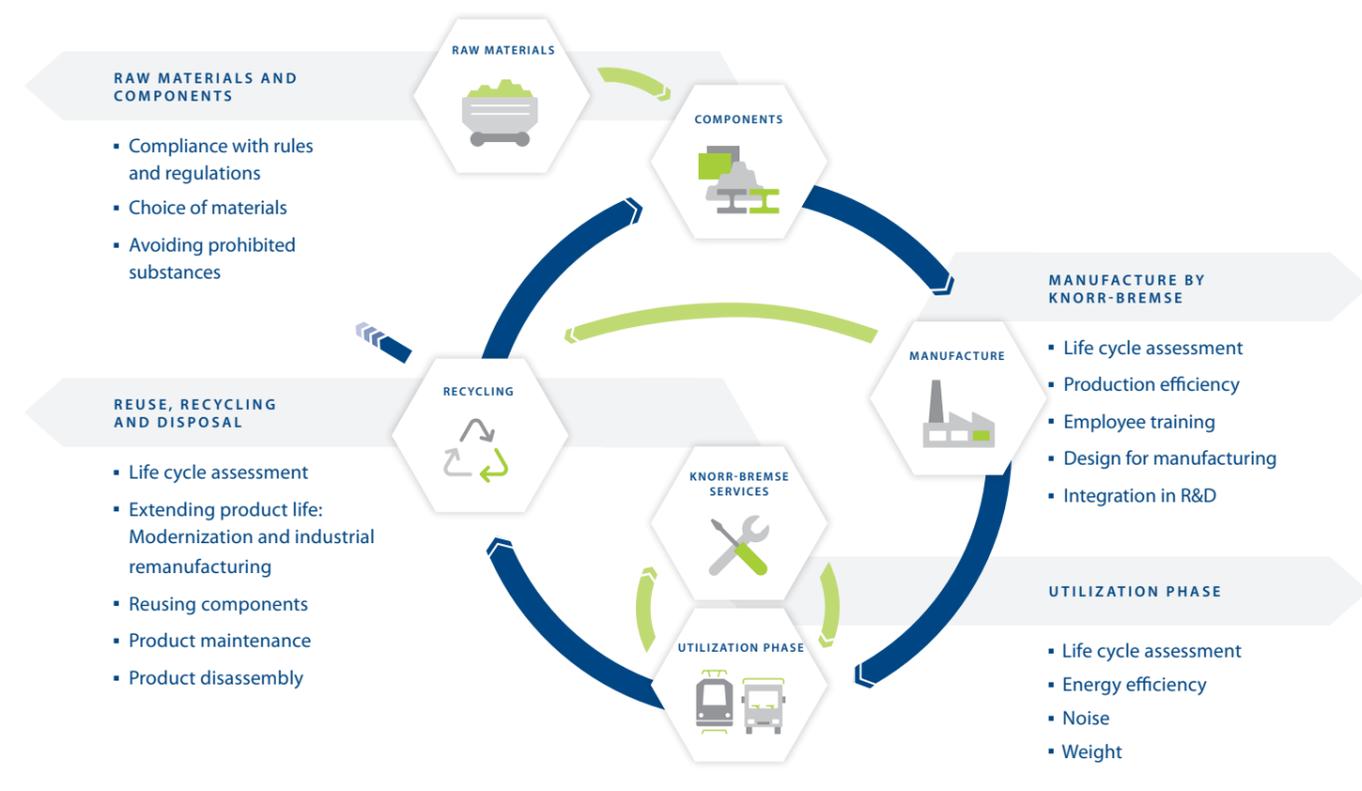
### Quantifying environmental impact through life cycle assessments

In the year under review, Knorr-Bremse made increased use of life cycle assessments (LCAs) to evaluate the environmental impact of its products and systems. Fourteen

products across our portfolio were selected for assessment. They represent significant innovations and are of particular importance to our customers. LCAs generate valuable data on the use of materials and resources during production, as well as the product's impact throughout its service life up to and including its disposal. We focused on greenhouse gas potential as the main indicator of our products' impact on climate change, and identified a number of weaknesses as a result of this assessment. Some of the LCAs have been independently validated by DEKRA experts in accordance with ISO 14040/14044. From now on, the 2018 standard for quantifying the carbon footprints of products will be used as the basis for carrying out all LCAs, creating a single standard for both divisions.

The Company also chose eco-design as one of its key themes for the 2018 IAA and InnoTrans trade fairs. As well as showcasing products and systems that help to prevent emissions in the transportation sector, we also actively communicated the results of the LCAs.]

#### ✓ ECO-DESIGN IN THE VALUE CHAIN



## PRODUCT INNOVATIONS THAT CUT CO<sub>2</sub> EMISSIONS

### Commercial vehicles

Knorr-Bremse has used life cycle assessments (LCAs) to compare the Company's latest generation of brakes – SYNACT®, which features axial and radial versions for heavy-duty commercial vehicles, and NEXTT® for trailers and semitrailers – against the corresponding current generation. Both of the new-generation brakes offer significant advantages in terms of safety, reliability, customer benefits and sustainability. In the cradle-to-gate assessment, the axial version of the new SYNACT® two-piston brake achieved an 11% cut in CO<sub>2</sub> emissions compared to its predecessor, while the radial version delivered a 21% reduction. The new single-piston NEXTT® brake cuts CO<sub>2</sub> emissions by 10% compared to its predecessor, while the optional Active Caliper Release (ACR) system provides an additional on-the-road fuel saving of up to 1%.

### Rail vehicles

With the help of LCAs (cradle to grave), we have more than halved the carbon footprint of the new KEF valve – our main control valve for rail freight vehicles – to just 48.1% of its predecessor's footprint. Meanwhile, the carbon footprint of the Light Weight Caliper – a new brake caliper designed for weight-critical applications – has been reduced by almost a quarter (24%) compared to its predecessor. The savings here are largely achieved as a result of reduced material consumption. This reduction is thanks to optimized construction processes and is reflected in reduced resource consumption at all stages of the life cycle.



## Saving resources through industrial remanufacturing

Extending a product's life can make a key contribution towards greater sustainability. We therefore ensure that the design of our new products is optimized for subsequent remanufacturing. Remanufacturing means that products can be reused for exactly the same function. Because fewer new materials and less energy are required, remanufactured products have a lower overall environmental impact.

Industrial remanufacturing remains an important part of our Rail Vehicle Systems division's business. For example, when Knorr-Bremse overhauls control, load-proportional and weighing valves for freight car brakes, we only replace parts that are actually worn out. Measured by weight, around 90% of the parts can be reused. In 2018, the Knorr-Bremse Service Center in Berlin remanufactured approximately 55,500 products of various kinds. In China, Knorr-Bremse remanufactured and delivered brake equipment for over 3,100 high-speed train cars, 1,700 locomotives and almost 2,200 metro trains in 2018, together with some 1,600 entry systems for high-speed trains and 1,800 HVAC units.

In the Commercial Vehicle Systems division, Knorr-Bremse offers a remanufactured product portfolio of almost 500 product codes under the EconX® brand. Although returning used products can sometimes involve transporting them over longer distances, the CO<sub>2</sub> emissions of a remanufactured product are up to three quarters lower than for a new product. This allowed Knorr-Bremse to save approximately 1,400 tonnes of CO<sub>2</sub>, 317 tonnes of materials and 5,460 MWh of energy through industrial remanufacturing in 2018.

### REVENUES FROM REMANUFACTURED PRODUCTS AS A PERCENTAGE OF TOTAL REVENUES



## BRAKE BLOCK RECYCLING FOR LONDON UNDERGROUND

Knorr-Bremse is committed to finding ways of ensuring that resources are not wasted at the end of a brake block's life cycle. An effective recycling system is already in use on the London Underground. Once the used brake blocks have been returned to Knorr-Bremse, the friction material is removed from the backing plate and then reused for new products. The material is collected by type and must of course meet the high quality standards for new products. Friction performance is checked through a series of test rig and operational tests. A further requirement is that the entire process should be cost-neutral. Having successfully achieved this in London, we are hopeful that the model can be replicated with other operators.

## SUSTAINABILITY STANDARDS IN THE SUPPLY CHAIN

Knorr-Bremse spends over EUR 3 billion a year on materials, supplies, and merchandise. Most of our raw materials spending is on metals, friction components, electronic parts and plastics. Our suppliers are an integral part of our value creation process and make a major contribution to the success of the Company.

As a globally operating company, Knorr-Bremse works with a wide range of suppliers, with most of their goods and services being purchased locally. This means that our choice of suppliers can have a significant impact on the environment and society in the countries where suppliers source their products. Failure to comply with environmental standards or human rights legislation on the part of our suppliers would pose reputational risks for Knorr-Bremse, and could lead to increased costs as a result of cancelled deliveries. This is why we look to work together with our suppliers to optimize the entire value chain and to live up to our social and environmental responsibilities.

## Principles and guidelines for sustainable supplier management

Our Group-wide Supplier Code of Conduct sets out what we expect from our suppliers in terms of working conditions, respect for human rights, environmental protection, safety, business ethics and compliance. The Code is currently available in 14 languages, with more language versions to come in 2019. 81% of direct suppliers by purchasing volume have taken note of our Supplier Code of Conduct or refer to a comparable code of conduct of their own. We will continue to disseminate the Code of Conduct to other suppliers over the course of the coming reporting year. In particular we will complete roll-out to indirect suppliers (i.e. suppliers of non-production-related material).

Knorr-Bremse's two divisions are each responsible for their own direct purchasing. However, a cross-divisional function is tasked with ensuring compliance with sustainability standards in the supply chain and making sure sustainability continues to improve. Suppliers of direct materials must also accept the relevant department's Quality Management Guideline. We made a number of changes to our guidelines for the Commercial Vehicle Systems division in 2018, incorporating both our Supplier Code of Conduct and minimum sustainability requirements such as an obligation to use ISO 14001-certified environmental management systems wherever possible. New direct suppliers are under a contractual obligation to comply with these sustainability standards. The Quality Management Guideline for the Rail Vehicle Systems division is currently being updated and should be rolled-out in 2019. Here, too, the updated Guideline will also include a contractual obligation to abide by our Supplier Code of Conduct.

Purchasing of indirect materials is controlled at cross-divisional level. The Procurement Guideline for Indirect Materials states that sustainability must be taken into account when selecting suppliers. This Guideline is complemented by specific guidelines to encourage purchases of renewable energy as well as energy-efficient products, equipment and services.

## Supplier sustainability assessment

Knorr-Bremse monitors direct suppliers' sustainability performance and has it assessed and approved by external service providers. Currently around 750 of our direct suppliers have been assessed. Despite our complex range of products, global operations and diversified supply chain, these assessed suppliers account between them for 53% of our global purchasing volume; we aim to increase this figure to 60% in 2019. We will also begin assessing indirect suppliers using the same process over the coming year.

Our objective is for our suppliers' sustainability ratings to play a greater role in our procedure for awarding contracts. To this end, the Commercial Vehicle Systems division has integrated suppliers' sustainability ratings into the processes used by the Sourcing Board – the internal body that examines and decides on supply contracts. In practice this means that only suppliers that have recognized the Supplier Code of Conduct and have completed (or are in the process of completing) a sustainability assessment can be nominated for supply contracts. In addition, suppliers should ideally be able to submit evidence that they use a certified environmental management system. Around 55% of the total purchase volume for the Commercial Vehicle Systems division comes from suppliers with a certified environmental management system. Suppliers to Knorr-Bremse's Rail Vehicle Systems division are similarly assessed against sustainability criteria. All European suppliers must undergo a sustainability assessment before they can be granted preferred supplier status. Preferred suppliers are more likely to be awarded supply contracts.

Knorr-Bremse's supplier questionnaire also asks suppliers whether any of their minerals are obtained from conflict zones or other high-risk areas. We then conduct a detailed analysis of suppliers in both areas of the business, as well as an assessment of whether they have provided satisfactory evidence in support of their responses. A global reporting system is currently under development and our next step will be to devote more attention to suppliers in the electronics industry in particular. In addition to these general reporting requirements, our North American subsidiaries require their suppliers to produce an additional annual report detail-

ing the provenance of all the minerals they are supplied with. We are also working together with the German Automotive Association (Verband der Automobilindustrie – VDA) to develop effective solutions for the sector as a whole.

#### KNORR-BREMSE RECOGNIZES HENKEL CR'S COMMITMENT TO SUSTAINABILITY

In November 2018 Czech-based company Henkel CR won the Rail Vehicle Systems Division 2018 Supplier Contribution Award in the Sustainability category. Henkel CR was selected from 100 applicants according to corporate sustainability management criteria and on the basis of the innovative and sustainable products it submitted. The company's environmentally friendly solution for adhesive bonds demonstrated a true commitment to sustainability, as did its wide range of sustainability-focused corporate initiatives.

#### Sustainability audits on suppliers' premises

In addition to these measures, we have also been carrying out sustainability audits at our suppliers' premises since 2017 to check compliance with social and environmental standards. Six direct, high-risk suppliers were audited by independent experts in the course of the year under review. The audits assess management approaches and how they are implemented in relation to compliance, the environment, health and safety

at work, human rights and supplier management. If an audit or sustainability assessment uncovers infringements or room for improvement, we aim to work together with the supplier to deal with the issue and improve their sustainability performance. We are planning further sustainability audits for 2019, and will draw up development plans with the suppliers concerned on the basis of the results.]

#### THE RAILRESPONSIBLE INITIATIVE – DRIVING THE RAIL INDUSTRY FORWARD

At the beginning of 2015 Knorr-Bremse's Rail Vehicle Systems division launched the Railponsible Initiative together with Alstom Transport, Bombardier Transportation, Deutsche Bahn, Nederlandse Spoorwagen and the French rail operator SNCF. The initiative aims to ensure sustainable procurement within the rail industry. It is also designed to encourage customers and suppliers within the industry to act in an ethical and socially responsible way and to commit to implementing responsible business and environmental practices. Since its inception, Railponsible has welcomed seven more members, and in 2018 it published a position paper on climate change that contains a clear commitment to the terms of the Paris Climate Agreement as well as setting out expectations and proposals on climate change for Railponsible member companies and their commercial partners.

#### Environmentally-friendly logistics along the value chain

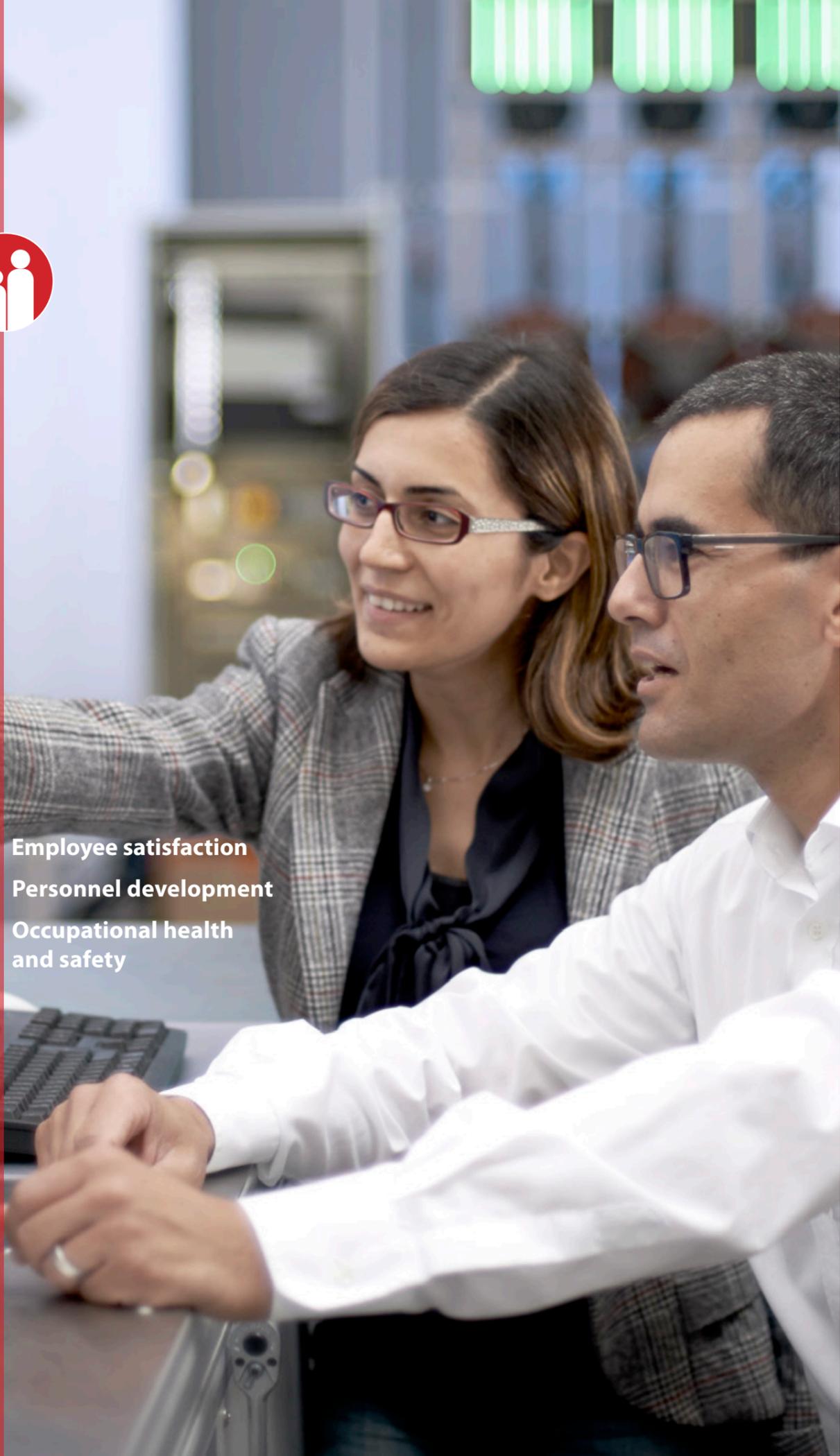
Knorr-Bremse is working with external service providers to optimize its operational logistics management systems. These external companies assume responsibility for the planning, consolidation and operational execution of deliveries by external suppliers to Knorr-Bremse, between our sites and from us to our customers. The various means of transport incorporated into the value creation chain are as closely coordinated as possible, making our logistics services even more sustainable. Our logistics partners are expected to use modern vehicles that achieve the highest possible levels of fuel economy. This serves to encourage an efficient logistics network at the same time as reducing transport-related CO<sub>2</sub> emissions. We require all commercial vehicles to meet current European commercial vehicle emission standards.

Knorr-Bremse is also improving its internal logistics processes for shipments between its sites, partly in response to customer requests to actively consider sustainability issues in our logistics. Standardized procedures and working methods help us to optimize our internal processes and to collaborate more efficiently with other sites. This improves the service we offer in all our distribution channels, especially in terms of delivery reliability, quality and lead times. We minimize the impact of product transportation on the environment by making optimum use of rail, road and sea connections. We try to make as many of our inter-continental shipments as possible by ship or rail, avoiding using air freight services wherever we can.





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## Employees and Leadership

Knorr-Bremse employs around 28,400 people worldwide. We aim to offer them a secure, attractive and supportive working environment based on an open corporate culture characterized by diversity, transparency and respect. With our combination of secure employment, challenging work and opportunities for personal and professional development, we are positioning ourselves as an attractive employer in the global market.

[Knorr-Bremse's strong performance and continued growth is thanks primarily to the outstanding commitment shown by its employees. As of the end of the 2018 calendar year, the Company employed 28,452 people worldwide – growth of 2.7% compared to the previous year (27,705). Around 80% of our employees work at sites outside Germany – a strong indication of the Group's international outlook.

Companies operating at a global level have to differentiate themselves from their competitors by delivering world-class technological performance – something they cannot do without a highly-qualified workforce. This means it is especially important for Knorr-Bremse to counter demographic changes and the shortage of skilled labor they are causing. Satisfied employees, a holistic approach to HR development and a corporate culture characterized by diversity and equality of opportunity are crucial to doing that.]

### EMPLOYEE SATISFACTION

[Satisfied and committed employees are essential to Knorr-Bremse's continued success, and an open and supportive corporate culture is crucial for the future of the Company. Knorr-Bremse respects and protects workers' rights. We feel we have a clear duty to set high standards, ensuring that remuneration is fair and appropriate and supporting our employees as their circumstances change throughout their lives.

#### Principles and processes for employee satisfaction

The head of the global Human Resources (HR) function carries ultimate responsibility for our employees, and reports regularly to the Chairman of the Executive Board. Responsibility for implementing HR measures and ensuring compliance with our own Code of Conduct in our three regions – Asia/Australia, Europe/Africa and Americas – lies with regional HR Officers, while local HR staff hold similar responsibilities at site level.

In order to live up to our corporate responsibility to uphold human rights, we base our policies and systems on the principles of the UN Global Compact, the United Nations Universal Declaration of Human Rights and the International Labour Organization (ILO) human rights conventions (see page 16).

The Knorr-Bremse Code of Conduct provides the framework that ensures all our employees are treated with respect on a daily basis, and gives them a clear understanding of what we mean by responsible behavior. In this respect, the diversity of Knorr-Bremse's workforce is a key reason for its success. As a global company, we want to make sure that

NUMBER OF EMPLOYEES AS OF DEC. 31, 2018



different cultures and life experiences are understood and valued, as well as actively supporting the integration of employees from other countries. This can only be done by applying the fundamental principle of equal treatment, irrespective of gender, age, national or ethnic origin, sexual orientation, disability, religion or political views. All new employees, including at management level, are hired purely on merit, as set out in the Knorr-Bremse Code of Conduct. We have set up systems to help employees get advice when they need it. All employees are entitled to approach their managers, our compliance organization, Human Resources or – where they exist – Works Councils with any questions they may have. Our anonymous whistleblower system also gives employees worldwide the opportunity to report any behavior that runs counter to our fundamental principles.]

### Work-life balance

Promoting a healthy work-life balance is a key objective of our HR policies. Knorr-Bremse can help its employees to achieve this by offering them the following benefits to suit their individual circumstances:

- Flexible working hours and working time accounts
- Part-time working
- Sabbaticals lasting several months
- Teleworking
- Family support (e.g. helping employees to find childcare and care services for relatives, childcare schemes during school holidays)
- Family assistance programs, such as contributing to health care and health insurance plans, special financial assistance, granting leave if children or relatives fall ill, and maternity and parental leave (even in countries where there are no statutory provisions).
- A range of health-promotion schemes and access to health facilities

Since 2012, Knorr-Bremse's Munich site has held berufund-familie gGmbH's Audit Beruf und Familie ('Work and Family Audit') Certificate. The certificate is considered a prestigious award in Germany and recognizes our commitment to supporting family life.

### Remuneration and other benefits

Knorr-Bremse is a fair employer that takes care to ensure its employees are appropriately rewarded in line with global market rates. At many of our sites, our salaries are above the minimum rates set in collective bargaining agreements. Most posts within the Company require highly-qualified and skilled personnel, meaning that statutory minimum wage legislation is irrelevant to the vast majority of our employees. Salaries are set purely on the basis of qualifications and performance; we do not distinguish between our male and female employees on pay.

In order to guarantee equality of opportunity and fair remuneration, as well as to ensure posts can be compared internationally, we are working to assess all our posts according to a standardized international system and to compare them against external benchmarks. So far, 50% of all roles have been assessed. The higher the level of responsibility associated with a role, the greater the variable component of the overall remuneration package. Performance-related payments are made on the basis of the overall success of the Company and the extent to which the employee fulfils their individually agreed objectives. These objectives are agreed between the manager concerned and their line manager as part of our standardized worldwide Staff Dialogue process (see page 33). Sustainability-related issues are incorporated into employees' objectives as appropriate to their individual roles.

Employees can also make use of a range of additional voluntary benefits provided by the Company. Available services vary from site to site but may include meal and transport allowances or access to sports facilities and health-related services. Where local circumstances allow, Knorr-Bremse also makes voluntary additional payments to company pension schemes, at the same time as complying with all statutory provisions and local tax and social security legislation.

### Employee co-determination

At Knorr-Bremse, it is essential that relationships at all levels of the Company hierarchy are built on trust. Our commitment to working together with our employees includes our determination to engage constructively with employee representatives and with the European Group Works Council. Where possible, and to the extent permitted under local legislation, we support our employees' right to freedom of assembly and association and to engage in collective bargaining. Members of employee representative bodies and/or trades unions are neither discriminated against nor given any kind of special treatment.

### Measuring employee satisfaction

[Our employee survey is an important tool for assessing employee satisfaction at Knorr-Bremse and how it can be improved. Herewith, all Knorr-Bremse employees worldwide have the chance to give their views on their employer. An independent institute ensures that all responses remain confidential, and questionnaires are assessed anonymously to prevent the answers being traced back to specific individuals.

The aim of the survey is to measure employee satisfaction at the same time as gathering and implementing suggestions as to how working conditions might be improved. The results are communicated to employees using an agreed and clearly-defined process, and then discussed with them at length in a series of workshops. Specific recommendations are drawn up at the end of the process. The Knorr-Bremse Group conducted its sixth global employee survey in March 2018. The response rate worldwide was around 72%. Average satisfaction on a scale from one to seven (with one being the best possible score and seven the worst) was 2.80. Compared with the survey conducted four years ago, participation fell by around ten percentage points, while the overall satisfaction score remained at a good level.]

### KNORR-BREMSE WINS TOP EMPLOYER AWARD

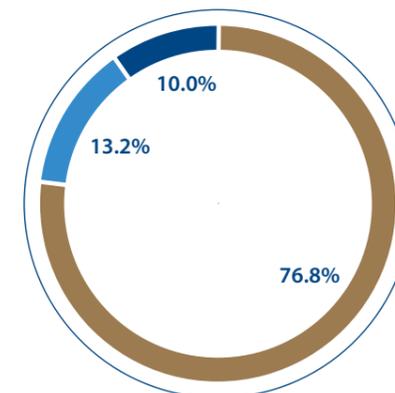
The ambition to make the Company a more attractive employer, both for the public at large and for our key target group of highly-qualified young professionals, is central to all our HR policies. Since 2014 we have held the Amsterdam-based Top Employers Institute's Top German Engineering Employer award. Among the areas highlighted by the judges were our outstanding working environment and the wide range of creative solutions we offer our employees, ranging from flexible working conditions to a performance management system that is fully in keeping with our corporate culture.



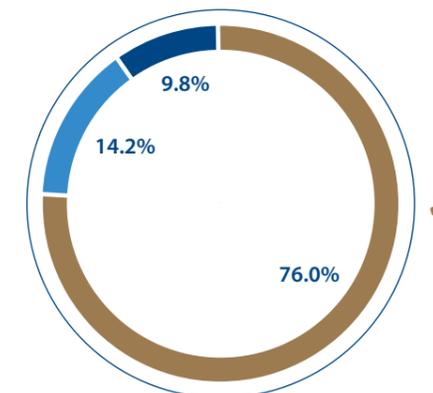
### 2018 STAFF SURVEY RESULTS COMPARED TO 2014

Satisfaction level: Finally, taking everything into consideration, **how satisfied overall** are you working for the Knorr-Bremse Group?

Average 2014: 2.81



Average 2018: 2.80



■ Satisfied ■ Yes and no ■ Not satisfied

## PERSONNEL DEVELOPMENT

[Knorr-Bremse sees further training as a key factor for employees' personal and professional development, as well as the foundation for the Company's success. The Group aims to ensure its employees are qualified to meet specific business needs and to provide them with the skills they need for their roles. That is why Knorr-Bremse takes a systematic approach to identifying strengths and weaknesses within the Company and implementing any changes required to address them. Personnel development plays a key role in ensuring that our workforce is qualified to meet our needs.]

### Principles and processes for personnel development

Our HR process model provides the framework for our personnel development initiatives. The model focuses on two areas of performance:

- Source: Attracting new employees and talents, developing a strong long-term brand as an employer and working together with universities, colleges and other training institutions.
- Develop: Assessing and supporting our employees and managers, offering targeted training programs, and continuing to develop our leadership culture and principles.

We offer our employees training specifically tailored to Knorr-Bremse which helps them to increase their knowledge and expertise and prepare themselves for new challenges. As part of these training programs we deliver a varied range of seminars and workshops on topics including social and inter-cultural skills, languages, project management, (brake) technology, quality, law, IT and CAD.

At Knorr-Bremse, good leadership skills are essential to maximizing the performance, creativity and long-term success of the Company. The leadership team has a particular responsibility to create a working environment in which all employees can reach their full potential. The Knorr-Bremse Leadership Guidelines provide advice on how to do this. They cover our five core themes (Reflect, Approach, Consult, Develop and Implement) and describe the leadership qualities Knorr-Bremse managers are expected to exhibit on a daily basis.

We use potential analysis procedures (Development Center) and management development programs (Management Potential Groups) for succession planning and to develop our managers' skills right across the Group. The aim is to improve the overall standard of leadership and to fill as many vacant management positions as possible with internal candidates.

We carry out annual employee appraisals throughout the Group, as well as management assessments every three years to gather feedback on the staff development measures we have introduced and to ensure employee performance is assessed fairly. Employees and managers are involved in all discussions on the skills required and the training measures to be implemented. Managers are also empowered to order additional training for employees. Our Human Resources Department can also propose additional training, and is responsible for ensuring training quality.]

### Training and courses

Knorr-Bremse offers apprenticeships in the skills it needs within its workforce. This means that graduates from our apprenticeship scheme have a good chance of progressing to a permanent job with the Company. We offer a range of technical and commercial apprenticeships across our international sites. Demand is particularly high in specialist areas including industrial mechanical engineering, cutting machine operation, electronics, mechatronics and information technology. As of 31 December 2018, 207 young people were apprenticed at Knorr-Bremse (2017: 248).

Knorr-Bremse has also been a partner of the Duale Hochschule (DHBW) Ravensburg and its external campus at Friedrichshafen since 2008, offering three-year sandwich courses for students in industrial engineering, electrical engineering, mechanical engineering and industrial computing.

### Professional development and qualifications

[We want to develop our ability to recognize employees' potential and support them in their individual development, which is why managers hold an annual appraisal with their employees to discuss their performance and opportunities for development. Staff Dialogue is the name we give to this process, which has now been standardized right across the Group. We have also made significant improvements to our assessment criteria and the way we manage potential; recent changes include ensuring individual targets are agreed in writing and the introduction of performance and potential assessments. These changes have resulted in greater clarity regarding employee performance and potential, as well as enabling our employees to take advantage of tailor-made personal development opportunities from Knorr-Bremse's range of training. In 2018, 71.1% of our workforce participated in performance appraisals. 94.1% of these employees successfully completed the Staff Dialogue process.]

### STAFF DIALOGUE COVERAGE AND COMPLETION RATES

	✓ 2018	2017	2016
Staff Dialogue coverage (%)	71.1	75.0	80.0
Staff Dialogue completion rate (%)	94.1	92.6	96.6

### Global exchanges

As a global Group we promote understanding and appreciation of different cultures and life experiences, and actively support global exchanges among our employees. We strengthen this global dialogue through inter-cultural training, language courses, projects across multiple sites and opportunities for employees to live and work overseas. With a presence in over 30 countries, Knorr-Bremse offers a wealth of overseas posting options. Knorr-Bremse employees can be posted abroad for anything between six months and five years. All candidates for overseas jobs are supported by a specialist team within our central International Transfers department, responsible for guiding them through the whole process from initial preparations to their return home and reintegration into their former workplace. In 2018, a total of 81 employees worldwide were posted to other Knorr-Bremse sites (2017: 81).

Alongside long-term deployments overseas, facilitating short-term exchanges between our sites to address specific challenges remains a major priority for Knorr-Bremse. Working on a wide range of international projects allows staff to build their expertise in specific areas, exchange specialist knowledge and ensure knowledge transfer.

### Management and young talent

Knorr-Bremse is determined to stay close to its markets and customers, making full use of country-specific linguistic and cultural expertise. That is why we try to employ local management staff at our international facilities wherever possible.

Our Leadership Feedback process, which takes place at least once every two years and can be initiated at any time as required, is another manifestation of our culture of open dialogue. The process allows managers to gather feedback on their leadership from their employees. We then work together with the manager to address the results and identify how their relationship with their employees can be improved.

Knorr-Bremse offers three in-house development programs designed to attract and retain up-and-coming talent:

- Management Evolution Program (MEP): On this program, which lasts 18 months, trainees are introduced to three different specialist areas, gain experience on international projects, and spend six months working at one of our international facilities. Participants are mentored during the program by experienced Knorr-Bremse managers.
- International Management Potential Group (IMPG): This development program gives employees starting their management careers worldwide the opportunity to develop their talents by participating in a range of training sessions and projects, as well developing their management expertise and expanding their own international networks.
- Engineering Development Program (EDP): This program offers US college graduates in technical subjects the opportunity to complete two years of additional training in mechatronics, for example by transferring between divisions or departments, or by working at our Mexican site.

### Women in leadership positions

In 2018 the overall proportion of female employees in the workforce was 20.9% (2017: 20.2%). The proportion of women in leadership positions across all departments worldwide was 12.5% (2017: 11.2%).

Knorr-Bremse utilizes and supports a number of programs designed to increase the proportion of women in management positions. Knorr-Bremse's MEP trainee program is just one example. In 2018, 43% of participants in the program were female (2017: 36%). Our North American subsidiary Bendix offers female managers the opportunity to take part in a special training program for women in leadership positions lasting six months and consisting of a regular series of

workshops. Exchanges with female managers at other companies within the industry play a key role.

We also support female students on STEM courses via our partnership with the Technical University of Munich. As part of our mentorING Program, mentors provide female students with advice and support, helping them to build an initial network they can use during their studies and early careers. The program is complemented by a range of targeted seminars and training sessions.

## OCCUPATIONAL HEALTH AND SAFETY

Occupational health and safety is a major priority for Knorr-Bremse, and is firmly embedded in our business processes. The relevant commitments and key principles are set out in the Group-wide Health, Safety and Environment (HSE) Policy.

### Occupational health and safety principles and processes

The HSE officers at our sites bundle all the occupational health and safety measures and assist management with their implementation. Key aspects of their work include assessing the risk of injury and accidents for permanent and temporary staff associated with particular machinery, workplaces and work processes, promoting safety awareness among the workforce through training courses and communications campaigns, analyzing accidents in order to determine their causes, and introducing accident prevention measures based on the findings of these investigations.

Our occupational health and safety management system complies with the international standard OHSAS 18001 (Occupational Health and Safety Assessment Series) and finds concrete expression in our in-house HSE processes. Regular internal audits and training ensure that these processes are observed. In the Rail Vehicle Systems division, 37 production and service sites around the world have already achieved OHSAS 18001 certification. This number has fallen from 39 in 2017 due to the sale of some facilities. In 2019, we will be aligning our occupational health and safety management system with the ISO 45001 international occupational health and safety standard. All our current OHSAS 18001-certified sites will apply for ISO 45001 certification. We fulfil our responsibility towards all our employees by systematically addressing any significant issues that might affect their health and safety at work.

We employ standardized processes to record and analyze the key occupational safety indicators, and use the results to develop measures aimed at improving our performance. In order to maintain and improve our high occupational health and safety standards, we provide regular in-house training and offer our HSE experts the opportunity to take part in international meetings, conferences and projects. We also raise awareness of occupational safety among the workforce through in-house campaigns. The 'Bendix Stars' program in the USA encourages all work teams to improve their awareness of occupational safety issues, with prizes awarded for the best teams every month.

Ultimately, effective prevention of workplace accidents and health hazards can only be achieved by raising awareness among both management and employees. Regular training and information on occupational safety help to improve risk identification and prevention.

As well as safety in the workplace, Knorr-Bremse also attaches great importance to disease prevention and health promotion – our aim is to maintain and promote our employees' long-term health. An extensive range of services aimed at maintaining and promoting our employees' long-term health and tailored to local requirements in each region is available throughout the Group. We are constantly striving to optimize workplace ergonomics, for example through the introduction of low-vibration electrical equipment or by proactively taking ergonomic aspects into account in the assembly planning process.

### Prevention of workplace accidents

Knorr-Bremse is committed to doing everything possible to prevent workplace accidents and further reduce the number of accidents per 200,000 hours worked. The following key measures are geared towards delivering on this commitment:

- standardized, preventive occupational health and safety management systems
- information campaigns and regular meetings on occupational safety
- regular system and process audits, HSE safety audits, equipment acceptance audits and inspections at our sites
- regular internal reporting and follow-up

Thanks to these measures, in 2018 we were able to reduce our workplace accident rate to 1.0 accidents per 200,000 hours worked.]

### NUMBER OF WORKPLACE ACCIDENTS PER 200,000 HOURS WORKED<sup>1</sup>



### NUMBER OF WORKPLACE ACCIDENTS RESULTING IN LOST DAYS PER 200,000 HOURS WORKED<sup>1</sup>



#### KNORR-BREMSE MELKSHAM WINS ROSPA AWARD

This year, Knorr-Bremse Rail Systems in the UK has once again received a prestigious gold award from the Royal Society for the Prevention of Accidents (RoSPA). The RoSPA Awards assess health and safety management systems. Winning the award is a tribute to the site's high occupational health and safety standards.

### Health in the workplace

Knorr-Bremse's occupational health management system provides a range of services, including analysis and advice on health risks and ergonomic issues associated with particular workplaces. We also provide water coolers and fruit for our staff, preferential rates for sporting activities, in-house sports facilities, financial assistance for employees who purchase bicycles and expert seminars on health issues. We organize occupational health programs as required, ensuring that our employees' individual needs are taken into account at all times. Staff are encouraged to contribute their own ideas and suggestions, either at regular meetings or through the employee suggestion system.

A range of in-house medical care services is available to employees at selected sites, including key preventive check-ups, vaccinations and pre-travel consultations. In the USA, our Bendix subsidiary offers its employees an extensive range of services and information on subjects such as breast cancer prevention, healthy nutrition and physical fitness as part of its 'Bendix Be Healthy' program.

<sup>1</sup> The accident rate for 2018 refers to all sites under operational control. Sites that are not production facilities or service workshops and have fewer than 50 employees are excluded. Approximately 96% of Knorr-Bremse's employees are included. Sites not included in this definition are required to report their workplace accidents in line with the provisions of the corporate policy on compulsory reporting of damage and emergency incidents. This ensures that we receive prompt details of serious incidents from all our sites, so that the appropriate measures can be taken.



- 39 Environmental management
- 39 Energy and CO<sub>2</sub> emissions
- 41 Conserving resources

# Environment and climate

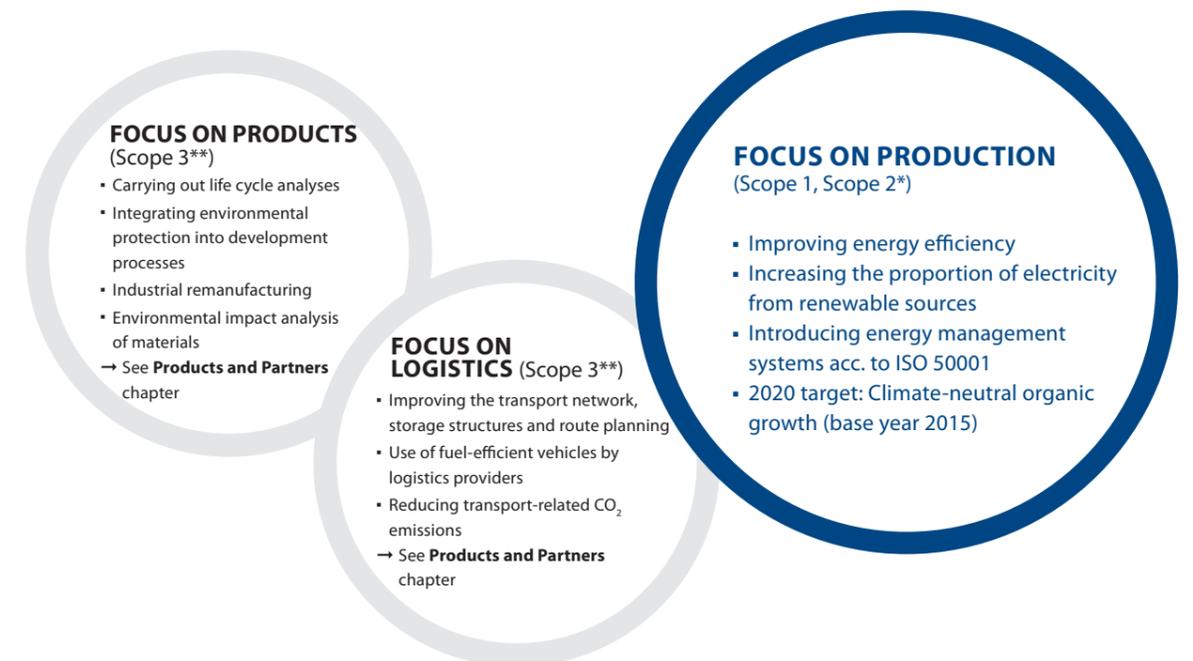
Deliberate action is needed to make a success of environmental protection. This is the principle we follow in managing production processes that have an impact on the environment, in particular as a result of energy and materials consumption. Environmental management systems at our facilities enable us to work on using resources responsibly and reducing CO<sub>2</sub> emissions.

[As an industrial manufacturer, Knorr-Bremse is conscious of its impact on the environment, especially when it comes to climate change and resource consumption. This is why we are constantly aligning our environmental management with national and international developments, legislation, frameworks and customer requirements. Our Group-wide risk management system also covers environmental issues. In order to minimize our impact on the environment, we have put in place standardized processes for environmental

protection and set environmental targets at Group and site level. We are constantly raising awareness of environmental issues among our employees.

Knorr-Bremse concentrates most of its climate protection activities in the areas of products, logistics and energy (see chart). This is where we see our biggest impact – and where we can make the biggest difference.]

## ✓ CLIMATE PROTECTION AT KNORR-BREMSE – FOCUS ON THREE AREAS



\* Direct and indirect emissions from the use of natural gas, fuel oil (Scope 1) and electricity and district heating (Scope 2).

\*\* Indirect emissions from fuel consumption and from the product manufacturing and use phases (Scope 3).

## ENVIRONMENTAL MANAGEMENT

[Responsibility for implementing and coordinating environmental management lies with the central Health, Safety and Environment (HSE) departments in the Rail Vehicle Systems and Commercial Vehicle Systems divisions. They draw up strategic targets and pool all strategic management and coordination tasks at divisional level. Senior management is involved in the process through regular meetings and ad-hoc reporting, as well as via the CR Council. At site level, HSE managers implement the strategic requirements, aims and programs in collaboration with local managers. The managers also receive support from local environmental protection and energy officers, regional coordinators and experts from the strategic specialized departments.]

The divisions hold international HSE meetings at least once a year or organize regular conference calls to exchange information between sites on HSE-related aspects, best practice and legal requirements. Regular contact between the divisional HSE officers ensures that HSE work in the two divisions is aligned as closely as possible and that both divisions can benefit from synergies.

### Environmental management principles and processes

The fundamental principles of Knorr-Bremse's environmental protection policy are set out in our global HSE Policy. In this policy we commit ourselves to preventing or minimizing any negative impact that our processes, services and products may have on health, safety and the environment. We achieve this through standardized management systems based on statutory and customer requirements, internal guidelines and procedural instructions. Using these standardized systems as a basis, sites record their local environmental and energy data, which are then used to plan, analyze and manage environmental measures. In addition, our processes are aligned with the following standards: ISO 9001 or IATF 16949 (quality management), ISO 14001 (environmental management), OHSAS 18001 or ISO 45001 (occupational health and safety) and ISO 50001 (energy management). Regular internal and external audits check whether the company is complying with the specified standards and whether improvements are being implemented. The divisions also produce regular reports throughout the year containing data on health, safety and the environment.

Since 2001, we have been requiring relevant sites to obtain certification to ISO 14001, the international standard for environmental management. By the end of 2018, 59 production plants had achieved certification (2017: 59).]

## ENERGY AND CO<sub>2</sub> EMISSIONS

[As an industrial manufacturer, Knorr-Bremse's energy consumption and associated CO<sub>2</sub> emissions are linked primarily to its use of buildings, the plant and machinery it operates and the energy used in production processes. As well as its direct impact on the environment, Knorr-Bremse is conscious of potential regulatory requirements in relation to climate change that could have a direct impact on the success of its business.]

### Energy management principles and processes

The role of the Group's environmental and energy management system is to constantly evaluate and improve its processes in terms of energy requirements. It helps monitor consumption data, identify potential savings and track the effectiveness of implemented measures. The Group's environmental and energy management system is also enshrined in its global HSE Policy.

As part of its HSE management system, Knorr-Bremse is implementing an energy management system based on ISO 50001, particularly at its energy-intensive production facilities. By the end of 2018, 33 legal business entities (2017: 34) held this certificate or were completing an external energy audit under EN 16247. As part of our energy management system we set annual objectives and draw up action plans to achieve them. At these sites, local energy officers analyze processes and monitor the implementation of measures.

Since 2015, we have been following our global guidelines on the purchase of renewable energy with a view to increasing the proportion of renewables in our externally sourced electricity. The Indirect Purchasing team has conducted a systematic analysis of the current energy contracts at our 25 most energy-intensive facilities. The aim is to make sure the option of switching to renewable energy is included in the decision-making process.]

### CHANGE OF PROVIDER FOR THE ENERGY TRANSITION

Knorr-Bremse's sustainability targets place a high value on climate protection. Electricity supplies to our sites should therefore not only be as cheap as possible, but a high proportion should also come from renewable sources. For this reason, we switched electricity providers at the beginning of 2018, cutting our electricity-related CO<sub>2</sub> emissions in Aldersbach, Berlin (excluding our Powertech subsidiary), Dresden, Holzkirchen, Schwieberdingen and Munich by around 80 percent.

### Energy efficiency and energy saving measures

We help to minimize the impact of our operations on the environment by ensuring our plant and machinery are serviced regularly, as well as by carrying out preventive maintenance and repairs. Each year, we identify specific measures to be taken, such as improvements to plant technology or processes, as well as modernization. At some of our facilities, for instance, we have installed energy-measuring devices and systems that record and itemize energy consumption. Knorr-Bremse also makes use of the waste heat from test rigs and maximizes potential energy savings through digitalization. The Group shares local best practice examples across sites and divisions with a view to creating synergies.

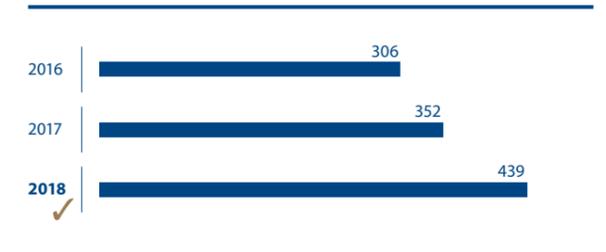
### Climate protection targets for 2020

[In 2015, Knorr-Bremse set itself both absolute and relative climate protection targets. Firstly, we committed to achieving climate-neutral organic growth by 2020 at our 43 most energy-intensive sites. Specifically, this means that operational CO<sub>2</sub> emissions must not exceed the 2015 base level by 2020, despite a steep rise in production capacity. We are well on the way to reaching this target. In the year under review, switching energy contracts for our German facilities and generating our own solar power in India (see text boxes on pages 40, 41) played a significant role in achieving this reduction.

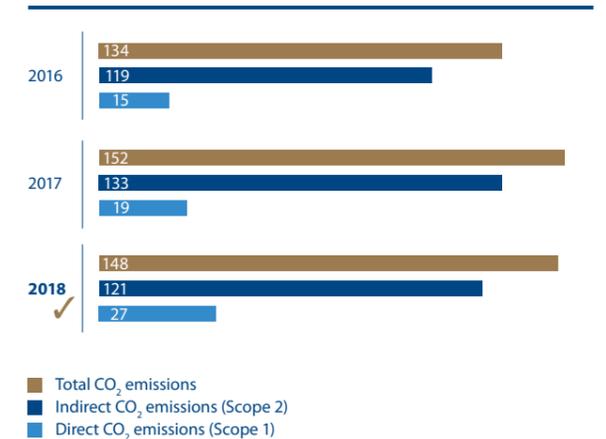
Secondly, we set ourselves the target of improving CO<sub>2</sub> efficiency by a further 10% by 2020 compared with 2015 levels – including at the new sites that Knorr-Bremse will acquire over this period. We upgraded our processes for recording key indicators in the year under review, so we will be using

the improved data quality to define a new climate protection target. The improvement in data quality – achieved by aligning the key indicator definitions for the two divisions and extending data recording to other consolidated companies and facilities – may, however, limit the extent to which the HSE indicators can be compared with those of previous years. We will be taking a number of measures to tackle this issue, including improving monitoring procedures to safeguard data quality.]

ENERGY CONSUMPTION IN GWH<sup>1</sup>



DIRECT AND INDIRECT CO<sub>2</sub>-EMISSIONS IN THOUSAND TONNES<sup>2</sup>



<sup>1</sup> The key indicators for 2018 relate to all sites under operational control. Sites with fewer than 50 employees that do not implement an environmental management system are excluded. Approximately 96% of Knorr-Bremse's employees are included.

<sup>2</sup> Our recording of CO<sub>2</sub> emissions is based on the recognized specifications in the Corporate Accounting and Reporting Standard (Scope 1 and 2) of the Greenhouse Gas Protocol. The graph shows market-based CO<sub>2</sub> emissions.

**MEETING OUR ENERGY NEEDS USING SOLAR POWER IN PUNE (INDIA)**

We are implementing climate protection measures all over the world. At our production plant in Pune, India, for instance, we are making the most of the year-round sunshine and the facility's roof space. Solar panels capable of generating 600 kW per year have been installed over nearly the entire roof area. This is not just a way of generating renewable electricity – it also makes financial sense, with the solar panels supplying 30 percent of the facility's energy requirements and saving Knorr-Bremse EUR 43,000 in electricity costs per year.

**CONSERVING RESOURCES**

Apart from energy consumption, it is Knorr-Bremse's consumption of materials – such as steel and other ferrous materials, light metals, polymers, consumables and packaging materials – that has the biggest impact on the climate and the environment. In our product development process we are therefore increasing research into the possible applications of environmentally friendly and resource-conserving materials (see Products and Partners chapter). At the same time we are making efforts to conserve resources through sustainable water use and a waste management system designed around waste prevention.

**THE BENDIX 'ZERO WASTE' CAMPAIGN**

Bendix hopes to stop sending waste to landfill by 2020. Our North American subsidiary has therefore launched a comprehensive waste management program and has already reached an important milestone: in 2018, 96% of waste was recycled. Some of it was used to generate energy, while waste from the cafeteria and offices was composted. A Bendix Green Team made up of volunteer staff also runs regular 'Zero Waste' events.

**Waste management processes**

At Knorr-Bremse, waste consists primarily of scrap metal, paper and residual waste. Surface treatment of metallic materials also results in electroplating sludge. Our product packaging consists primarily of reusable materials and containers.

In general, waste management at Knorr-Bremse is based on the principle of a sustainable circular economy. The top priority is reducing total waste and, in particular, avoiding hazardous waste. Where this is not possible, we are committed to environmentally friendly recycling. The Knorr-Bremse Production System (KPS) also helps minimize waste in production. Value stream analyses identify and eliminate various forms of waste, such as overproduction and preventable product scrappage. In addition, our quality management guidelines require our suppliers to avoid or minimize packaging wherever possible, and to use recyclable materials.

**SAVING WATER AND ENERGY IN PALWAL (INDIA)**

Knorr-Bremse promotes the environmentally friendly use of resources all over the world. By installing water-saving devices on taps, for instance, our Palwal site in India was able to reduce water consumption by around 70% in 2018. In addition, process improvements in phosphating, machine tool upgrades and the associated reduction in machine running times have led to energy and chemicals savings.

**Water consumption**

The water Knorr-Bremse consumes is used primarily in the surface treatment and cleaning of its products, for test applications and for drinking water and sanitary purposes. In 2018, we used 645 cubic meters of water (2017: 486 cubic meters)<sup>3</sup>. We obtain our water from local authority suppliers. Some of our facilities save drinking water by using rainwater for cleaning, in their sanitary facilities and for watering green spaces. We dispose of our waste water via public sewage systems. It is our aim to use water as efficiently as possible and to reuse it as much as possible through recycling systems.



<sup>3</sup> The year-on-year increase is attributable to the inclusion of additional sites. The 2018 figure covers more than 90% of Knorr-Bremse employees.



44 Global Care:  
Worldwide commitment

47 Local Care:  
Site involvement

## Commitment and society

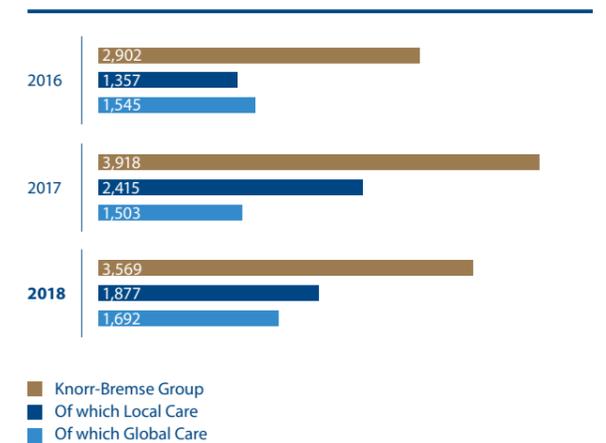
Together with its employees, Knorr-Bremse takes social responsibility seriously. Playing an active part in our communities, creating opportunities for those in need and looking after the environment around our sites is part and parcel of our identity. Knorr-Bremse demonstrates this through its commitment to community and social issues worldwide.

Our Global Care and Local Care initiatives are our way of addressing local and global challenges. Local Care covers all community activities carried out by our individual sites, while our charitable organization Knorr-Bremse Global Care promotes longer-term projects requiring significant funding all over the world.

The Knorr-Bremse Group and Knorr-Bremse Global Care see community activities as an opportunity to do something positive for those affected by societal problems, as well as for our employees and, by extension, the Company. We aim to increase our employees' awareness of social issues and motivate them to take positive action. In addition to the work they actually carry out, our employees can act as multipliers by carrying social responsibility beyond individual projects. That is why making sure all Knorr-Bremse sites are fully involved in community work is a key priority for the Company. Across our regions, our community work improves local residents' perception of Knorr-Bremse and makes them more accepting of our presence, as well as strengthening our employees' identification with the Company.

With over 100 sites in 30 countries, Knorr-Bremse also has an indirect economic impact on the regions where we operate. The Company can influence local communities and economies in a variety of ways, whether as an employer, a purchaser of materials and services or as a taxpayer (see 'About Knorr-Bremse', page 7).

DONATIONS IN EUR THOUSANDS



### GLOBAL CARE: WORLDWIDE COMMITMENT

Knorr-Bremse Global Care is an independent charitable organization that aims to create better prospects for those in need at a local and global level. The potential to promote independence and individual responsibility is a key consideration when selecting projects, as is the effect they are likely to produce.

Most of the funding for the Munich-based organization comes from the Knorr-Bremse Group and donations from individual employees. The commitment of its members and Knorr-Bremse employees is the lifeblood of the organization. The members of Knorr-Bremse Global Care hold meetings every six weeks to discuss ongoing projects, consider requests for new projects and take care of administrative matters. Three permanent members of staff are responsible for dealing with the organization's business.

Involving global Knorr-Bremse sites and their employees is one of Knorr-Bremse Global Care's main aims – and a key factor behind its success. International cooperation enables the organization to plan, lead and implement projects in a sustainable and effective way. In 2018 Knorr-Bremse Global Care was more closely integrated into Knorr-Bremse's regional operations in a bid to address social challenges on the ground in an even more targeted and effective way. With this in mind, two independent regional organizations, Knorr-Bremse Care North America and Knorr-Bremse Global Care Asia Pacific, are currently being established. In future, these two organizations will assume independent responsibility for selecting, funding and implementing aid projects in the countries of their respective regions where Knorr-Bremse sites are located. The majority of the organization's budget will be spent on educational projects. In keeping with our emphasis on individual responsibility, the regions can also each choose a second area to focus on according to local circumstances.

### Creating opportunities, making a real difference

Knorr-Bremse Global Care sees itself as a professional partner for funding aid projects and relies on close cooperation with local partner organizations who are responsible for on-site project management and ensuring that project implementation and documentation focuses on results. Before launching a project, objectives are jointly set based on the effect it should achieve. Members of Global Care or Group employees act as 'sponsors' for all our projects. As well as personally monitoring progress, they can often contribute useful experience and skills from their existing roles. These structures ensure that the assistance we provide for our partner organizations and projects covers more than just financial support.

Since its foundation in 2005, Knorr-Bremse Global Care and its partner organizations have completed around 270 projects, investing a total of almost EUR 20 million in improving the prospects of over 700,000 people in 60 countries. In 2018, Global Care provided financial support for 54 projects in 22 countries, spending around EUR 1.7 million and reaching over 20,800 people worldwide.

The projects are focused primarily on the countries in which Knorr-Bremse sites are located. It also supports development projects in ten other countries – Cambodia, Colombia, Ethiopia, Ghana, Kenya, Myanmar, Peru, Sri Lanka, Tanzania and Ukraine. Global Care's support is focused on two major issues: WASH (water, sanitation and hygiene) and education. By concentrating on these two areas, Knorr-Bremse Global Care aims to contribute to the UN's Sustainable Development

Goals (SDGs); in particular SDG 4 (Quality Education) and SDG 6 (Clean Water and Sanitation) form the cornerstones of its commitment. The organization also supports emergency aid in the aftermath of natural disasters – including in areas outside our main focus countries.

#### FOCUS 1: WASH

The organization's focus on WASH aims to achieve permanent improvements in the provision of clean water and sanitation, especially in developing countries and emerging economies.

In the year under review, for example, Knorr-Bremse Global Care worked together with the aid organization World Vision to support a drinking water and sanitation project in Tanzania. Knorr-Bremse Global Care has so far provided almost EUR 100,000 in funding for the initiative, which aims to ensure access to clean water and sanitation for 6,000 children at six schools in Ulaya district. The WASH project will improve overall living conditions for these families and reduce the rate of child mortality in the region. Building collection tanks for rainwater and wells equipped with hand pumps is a key part of the project. The initiative also provides training and education for school pupils, staff and parents to raise awareness of good hygiene and sanitary practices.

Water was also a major focus of Knorr-Bremse Day 2018. 'Water Marches' were organized in Munich and in Brazil. Employees volunteered to carry heavy water canisters round a circuit, with Knorr-Bremse Global Care promising to donate money to the Tanzania project for every lap they completed. The Munich event raised over EUR 7,000, with another EUR 400 coming from Brazil.



Carrying water for a good cause: For every lap completed, Knorr-Bremse donated 5 euros to a drinking water and sanitation project in Tanzania.

#### FOCUS 2: EDUCATION

In its Education category, Knorr-Bremse Global Care supports projects along the entire education pathway, from kindergarten and elementary school through to vocational training. In Brazil, for instance, Global Care has since 2018 been supporting an extensive assistance program for around 800 homeless families who have set up home on land belonging to the Instituto Anchieta Grajaú, a charitable organization in São Paulo. Global Care is working with the landowner to develop the favela into a settlement fit for habitation. The program provides training in construction skills for 32 suitably motivated residents in need of assistance. This enables families to build their own homes safely and also help develop the area. Ten model houses were completed in 2018. In addition, a fire protection program was developed in conjunction with the local fire service, and a business start-up course was launched in January 2019. In 2018, Knorr-Bremse Global Care provided a total of nearly EUR 180,000 to fund vocational training, house construction and the fire protection program.

Further project examples and information on the activities of Knorr-Bremse Global Care can be found at [www.global-care.eu](http://www.global-care.eu) and in the Knorr-Bremse Global Care 2018 Annual Report.



Training in construction skills enables residents of the favela in São Paulo to build their own homes.

## LOCAL CARE: SITE INVOLVEMENT

Knorr-Bremse Global Care's activities are supplemented by Local Care projects – social projects carried out at the company's sites. They range from financial support for charitable organizations to corporate volunteering projects, in which employees are personally involved.

Knorr-Bremse's Principles for Social Commitment serve as a guideline, defining objectives and standards and specifying

support areas and criteria. In addition, the Local Care Donation Guideline describes the standard principles governing Local Care donations made by Knorr-Bremse sites.

Local Care projects cover donations and activities in four key categories: environment, health, education and social cohesion. The projects are independently selected, financed and monitored by the site in question. Local Care instruments include:

### SELECTED LOCAL CARE PROJECTS BY SUPPORT CATEGORY 2018

	 Environment	 Health
<b>Europe/ Africa</b>	<ul style="list-style-type: none"> <li>Financial support for an organization promoting environmental education for young adults (Madrid/Spain)</li> <li>Support for a garden project at a facility for children and young people with disabilities (Modřice/Czech Republic)</li> <li>Financial support for a nature education and meeting place (Aldersbach/Germany)</li> <li>Beach clean-up operation (Florence/Italy)</li> <li>Financial support for a bird protection and breeding association (Schwieberdingen/Germany)</li> <li>Financial support for local environmental projects (Liberec/Czech Republic)</li> </ul>	<ul style="list-style-type: none"> <li>Supervising schoolchildren's healthy breakfasts (Munich/Germany)</li> <li>Running blood donation campaigns (Modřice/Czech Republic)</li> <li>Financial support for an organization for deaf and dumb children (Arcore/Italy)</li> <li>Financial support for various healthcare facilities (Melksham/UK)</li> <li>Financial support for an organization that supports autistic children (Buccinasco/Italy)</li> </ul>
<b>Asia/ Australia</b>	<ul style="list-style-type: none"> <li>Riverbank clean-up campaign (Seoul/South Korea)</li> <li>Tree-planting around the site (Palwal/India)</li> <li>Tree-planting campaign for the reforestation of local forests (Hong Kong/China)</li> <li>Countryside clean-up campaign (Pune/India)</li> </ul>	<ul style="list-style-type: none"> <li>Financial support for the medical care of flood victims (Sakado/Japan)</li> <li>Running blood donation campaigns (Pune/India)</li> <li>Financial support for and participation in sporting events (Suzhou/China)</li> <li>Participation in a charity run for patients with muscular and nervous disorders (Granville/Australia)</li> </ul>
<b>Americas</b>	<ul style="list-style-type: none"> <li>Technical assistance at an animal protection facility (Watertown/USA)</li> <li>Carrying out riverbank clean-ups (Acuña/Mexico, Elyria/USA)</li> <li>Financial, material and personal support for a nutritional and agricultural organization (Bowling Green/USA)</li> <li>Financial support for a rehabilitation and species preservation center for wild animals (Itupeva/Brazil)</li> <li>Carrying out garbage clean-up campaigns (Quebec/Canada, Watertown/USA, Westminster/USA)</li> </ul>	<ul style="list-style-type: none"> <li>Running blood donation campaigns (Elyria/USA, Westminster/USA)</li> <li>Collecting donations for socially disadvantaged families to secure healthcare for them (Westminster, USA)</li> <li>Collecting donations for a heart health organization (Watertown/USA)</li> <li>Financial support for a cancer aid organization (Huntington/USA)</li> </ul>

- Voluntary donations of time and money to charitable causes,
- Corporate volunteering – where the company grants employees time off to support charitable organizations,
- The 'Get involved' initiative, which provides donations to support the private voluntary work carried out by employees for charitable organizations and projects,
- Matched giving programs in which Knorr-Bremse tops up donations made by the workforce – matching or multiplying every donation made by employees.

Central record-keeping for all projects facilitates the communication of transferable best practices. A dedicated communication platform promotes active sharing of information between sites.

In 2018, around 700 Local Care projects were carried out on all continents around the world. The focus was on education and social cohesion.

	 Education	 Social cohesion
<b>Europe/ Africa</b>	<ul style="list-style-type: none"> <li>Developing a robotics program for schoolchildren and donating hardware (Budapest/Hungary)</li> <li>Financial support for schools with regard to IT equipment (Kecskemét/Hungary, Liberec/Czech Republic)</li> <li>Financial support for the youth fire brigade (Modřice/Czech Republic)</li> <li>Financial support for a children's circus with an emphasis on education (Berlin/Germany)</li> <li>Introducing elementary school children to technical professions (Aldersbach/Germany)</li> <li>Financial support for an educational organization for young refugees (Mödling/Austria)</li> </ul>	<ul style="list-style-type: none"> <li>Employee donations of Christmas presents for disadvantaged children (Budapest/Hungary, Munich/Germany)</li> <li>Financing of leisure activities for socially disadvantaged children (Lund/Sweden)</li> <li>Financing of meals for children in an orphanage (Kempton Park/South Africa)</li> <li>Financial support for a blind soccer team (Florence/Italy)</li> <li>Financing of a traffic safety program for kindergarten children (Budapest/Hungary)</li> </ul>
<b>Asia/ Australia</b>	<ul style="list-style-type: none"> <li>Developing and delivering a children's training program on traffic safety (Shanghai/China)</li> <li>Financing of scholarships and support for a technical university (Suzhou/China)</li> <li>Financial support for educational projects for socially disadvantaged children and adolescents (Pune/India)</li> <li>Support for a facility providing vocational training for people with learning disabilities (Palwal/India)</li> </ul>	<ul style="list-style-type: none"> <li>Caring for elderly residents in a retirement home (Daxing/China, Nankou/China)</li> <li>Employee donations of school materials for children in an orphanage (Palwal/India)</li> <li>Financial support for a facility for the homeless (Granville/Australia)</li> <li>Employee donations of Christmas presents for autistic children (Qingdao/China)</li> </ul>
<b>Americas</b>	<ul style="list-style-type: none"> <li>Computer donations for homeless families as part of a Knorr-Bremse Global Care aid program (Itupeva/Brazil)</li> <li>Financial support for STEM programs and employee visits to schools to introduce girls in particular to technical professions (Elyria/USA, Westminster/USA)</li> <li>Financing of scholarships for socially disadvantaged people (Watertown/USA)</li> <li>Financial support for schools and universities, especially in the sciences (Quebec/Canada)</li> </ul>	<ul style="list-style-type: none"> <li>Employee donations of toys for disadvantaged children (Watertown/USA)</li> <li>Building houses for the homeless in Acuña and Elyria (Acuña/Mexico, Elyria/USA)</li> <li>Technical assistance on a building project for homeless families (Itupeva/Brazil)</li> <li>Employee participation in a charity run for socially disadvantaged people (Westminster/USA)</li> </ul>

# Implementation of the ten UN Global Compact Principles

Knorr-Bremse has been a signatory to the UN Global Compact since 2010. Each year, we report on how we implement the ten principles of the Global Compact in our company. The following table provides an overview of the voluntary commitments, guidelines and management systems that help us integrate the principles of the Global Compact into our business processes. The index also provides references to the relevant content regarding the Global Compact and its implementation in 2018.

PRINCIPLE		KNORR-BREMSE GUIDELINES, REGULATIONS AND MANAGEMENT SYSTEMS	PAGES/SECTIONS
<b>HUMAN RIGHTS</b>			
<b>PRINCIPLE 1</b>	Businesses should support and respect the protection of internationally proclaimed human rights.	Code of Conduct (p. 11) Corporate Responsibility Guidelines (p. 10) Health, Safety and Environmental Policy (p. 10 f.; p. 35 f.; p. 39)	<b>9 Strategy and management</b> 15-16 Compliance and risk management 16-18 Due diligence processes for human rights
<b>PRINCIPLE 2</b>	Businesses should make sure they are not complicit in human rights abuses.	UITP Sustainability Charter (p. 11) UN Sustainable Development Goals (p. 14 f.) UN Guiding Principles on Business and Human Rights and UK Modern Slavery Act (p. 11; p. 16-18) Compliance management and organization (p. 15-16) Supplier Code of Conduct (p. 26)	<b>29 Employees and leadership</b> 30-31 Employee satisfaction 33-34 Employee development 35-36 Occupational health and safety  <b>19 Products and partners</b> 26-28 Sustainability standards in the supply chain
<b>LABOR STANDARDS</b>			
<b>PRINCIPLE 3</b>	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining, and furthermore uphold the elimination of all forms of forced and compulsory labor,	Code of Conduct (p. 11) Corporate Responsibility Guidelines (p. 10) Compliance management and organization (p. 15-16) Leadership Principles (p. 10-11; p. 33)	<b>9 Strategy and management</b> 15-16 Compliance and risk management 16-18 Due diligence processes for human rights
<b>PRINCIPLE 4</b>	the effective abolition of child labor	UN Sustainable Development Goals (p. 14-15)	<b>19 Products and partners</b> 26-28 Sustainability standards in the supply chain
<b>PRINCIPLE 5</b>	and the elimination of discrimination in respect of employment and occupation.		



PRINCIPLE		KNORR-BREMSE GUIDELINES, REGULATIONS AND MANAGEMENT SYSTEMS	PAGES/SECTIONS
<b>ENVIRONMENTAL PROTECTION</b>			
<b>PRINCIPLE 7</b>	Businesses should support a precautionary approach to environmental challenges,	Code of Conduct (p. 11) Supplier Code of Conduct (p. 26) Climate protection strategy with Group-wide targets (p. 40)	<b>9 Strategy and management</b>  <b>19 Products and partners</b> 20-22 Product and system safety 23-26 Ecological product design 26-28 Sustainability standards in the supply chain
<b>PRINCIPLE 8</b>	undertake initiatives to promote greater environmental responsibility and	UN Sustainable Development Goals (p. 14-15) Health, Safety and Environmental Policy (p. 10 f.; p. 35 f.; p. 39)	<b>29 Employees and leadership</b> 35-36 Occupational health and safety
<b>PRINCIPLE 9</b>	encourage the development and diffusion of environmentally friendly technologies.	Group-wide Environmental Management System (p. 39-40) Energy Management System (p. 39-41)	<b>37 Environment and climate</b> 39 Environmental management 39-41 Energy and CO <sub>2</sub> emissions 41 Conserving resources  <b>43 Commitment and society</b>
<b>CORRUPTION PREVENTION</b>			
<b>PRINCIPLE 10</b>	Businesses should work against corruption in all its forms, including extortion and bribery.	Code of Conduct (p. 11) Compliance management and organization (p. 15-16) Supplier Code of Conduct (p. 26)	<b>9 Strategy and management</b> 15-16 Compliance and risk management 16-18 Due diligence processes for human rights 26-28 Sustainability standards in the supply chain

# Index for the non-financial report in accordance with Germany's CSR Directive Implementation Act

## INDEX FOR THE NON-FINANCIAL REPORT IN ACCORDANCE WITH GERMANY'S CSR DIRECTIVE IMPLEMENTATION ACT

Material CR issues for Knorr-Bremse	Non-financial information subject to reporting requirements	Section	Page
Anti-corruption and fair competition	Anti-corruption and anti-bribery measures	Strategy and management	p. 15-16
Product and system safety	Social issues	Products and partners	p. 20-22
Ecological product design	Environmental issues	Products and partners	p. 23-26
Sustainability standards in the supply chain	Environmental and social issues, human rights, anti-corruption and anti-bribery measures	Strategy and management	S. 16-18
		Products and partners	p. 26-28
Energy & CO <sub>2</sub> emissions	Environmental issues	Environment and climate	p. 39-41
Employee satisfaction	Employee issues, human rights	Employees and leadership	p. 30-32
Personnel development	Employee issues	Employees and leadership	p. 33-35
Occupational health and safety	Employee issues	Employees and leadership	p. 35-36

# Assurance Report

Limited Assurance Report of the Independent Auditor regarding the Combined Separate Non-Financial Report.<sup>4</sup>

## TO THE EXECUTIVE BOARD OF KNORR-BREMSE AG, MUNICH

We have performed an independent limited assurance engagement on the Combined Separate Non-Financial Report of Knorr-Bremse AG, Munich and the Group (hereinafter 'Knorr-Bremse') as well as the by reference qualified parts 'Overview of the Group', 'Business Model/Structure of the Group' and 'Report on Risks, Opportunities and Expected Developments' of the Management Report (hereinafter 'Report') according to Sections 315b and 315c in conjunction with 289b to 289e German Commercial Code (HGB) for the business year from January 1 to December 31, 2018.

### Management's Responsibility

The legal representatives of Knorr-Bremse are responsible for the preparation of the Report in accordance with Sections 315b and 315c in conjunction with 289b to 289e HGB.

This responsibility of the legal representatives includes the selection and application of appropriate methods to prepare the Report and the use of assumptions and estimates for individual sustainability disclosures which are reasonable under the given circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

### Independence and Quality Assurance on the Part of the Auditing Firm

We are independent from the entity in accordance with the requirements of independence and quality assurance set out in legal provisions and professional pronouncements

and have fulfilled our additional professional obligations in accordance with these requirements.

Our audit firm applies the national statutory provisions and professional pronouncements for quality assurance, in particular the professional code for German Public Auditors and Chartered Accountants (in Germany) and the quality assurance standard of the German Institute of Public Auditors (Institut der Wirtschaftsprüfer, IDW) regarding quality assurance requirements in audit practice (IDW QS 1).

### Practitioner's Responsibility

Our responsibility is to express a conclusion on the Report based on our work performed within our limited assurance engagement.

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): 'Assurance Engagements Other than Audits or Reviews of Historical Financial Information' published by IAASB. This Standard requires that we plan and perform the assurance engagement to obtain limited assurance of whether any matters have come to our attention that cause us to believe that the Report for the period from January 1 to December 31, 2018 has not been prepared, in all material respects in accordance with Sections 315b and 315c in conjunction with 289b to 289e HGB. We do not, however, provide a separate conclusion for each disclosure. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore significantly less assurance is obtained than in a reasonable assurance engagement. The choice of audit procedures is subject to the auditor's own judgement.

<sup>4</sup> Our engagement applied to the German version of the Report 2018. This text is a translation of the Independent Assurance Report issued in the German, whereas the German text is authoritative.

Within the scope of our engagement, we performed amongst others the following procedures:

- Inquiries of personnel on corporate level, who are responsible for the materiality analysis, in order to gain an understanding of the processes for determining material sustainability topics and respective reporting boundaries of Knorr-Bremse
- A risk analysis, including a media search, to identify relevant information on Knorr-Bremse sustainability performance in the reporting period
- Evaluation of the design and implementation of the systems and processes for determining, processing and monitoring disclosures relating to environmental, employee and social matters, respect for human rights, and combating corruption and bribery, including the consolidation of the data
- Inquiries of personnel on corporate level who are responsible for determining disclosures on concepts, due diligence processes, results and risks, for conducting internal controls and consolidation of the disclosures
- Evaluation of selected internal and external documents
- Analytical evaluation of data and trends of quantitative information which are reported by all sites for consolidation on corporate level
- Evaluation of local data collection, validation and reporting processes as well as the reliability of reported data based on a sample of the sites in Budapest (Hungary) and Aldersbach (Germany)
- Assessment of the overall presentation of the information

## Conclusion

Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the Report of Knorr-Bremse for the business year from January 1 to December 31, 2018 is not prepared, in all material respects, in accordance with Sections 315b and 315c in conjunction with 289b to 289e HGB.

## Recommendation

Without affecting the conclusions presented above, we recommend to further improve the documentation of the non-financial data collection and consolidation on group level as well as to further develop the Group-wide reporting guideline and ensure the consistent implementation through respective systems, processes and internal controls on site level in order to continuously increase data quality.

## Restriction of Use / Clause on General Engagement Terms

This report is issued for the purposes of the Executive Board of Knorr-Bremse AG, Munich only. We assume no responsibility with regard to any third parties.

Our assignment for the Executive Board of Knorr-Bremse AG, Munich, and professional liability is governed by the General Engagement Terms for Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften (Allgemeine Auftragsbedingungen für Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften) in the version dated January 1, 2017 ([https://www.kpmg.de/bescheinigungen/lib/aab\\_english.pdf](https://www.kpmg.de/bescheinigungen/lib/aab_english.pdf)). By reading and using the information contained in this report, each recipient confirms having taken note of provisions of the General Engagement Terms (including the limitation of our liability for negligence to EUR 4 million as stipulated in No. 9) and accepts the validity of the above mentioned General Engagement Terms with respect to us.

Munich, April 29, 2019  
KPMG AG

Wirtschaftsprüfungsgesellschaft  
Original German version signed by:

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ppa. Auer

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