

**VOITH**

# Sustainability Report 2017





**Ulrich Weiße**

Head of the Central Function  
Corporate Sustainability & HSE

## Dear Readers,

This year too I am delighted to present you with our new Sustainability Report. Since 2009 we have informed our stakeholders annually this way about everything we have achieved regarding sustainability at Voith in the past fiscal year.

In the previous year we worked out a new, more strongly target-group oriented reporting concept. Positive feedback from our target publics confirmed this approach, which we are now continuing with this year's report. At the same time, this feedback reflects our stakeholders' keen interest in Voith's sustainability activities. For us this is a motivation and a duty at the same time. We will not slacken the pace in driving our sustainability activities forward, and by setting ourselves ambitious targets will continue to work on making Voith the industry benchmark in terms of sustainability.

In environmental management we are now coming up to the end of our current target period, and are already in a position to make a positive assessment: We are on the right track towards reaching our targets and have even exceeded some of them. The environment thus benefits from a clear reduction in our use of energy, reduced consumption of water, and lower volumes of waste, while Voith benefits not only through an improved sustainability scorecard but also in economic terms: Compared with the 2011/12 fiscal year, through our commitment to sustainability we are saving over €11 million each and every year.

To enable us to tap into further potential improvements in future we have already set ourselves new, far-reaching environmental goals. For the first time we have formulated specific CO<sub>2</sub> emissions reduction targets. We want to improve in this area, and based on a scientific approach make our contribution to achieving the climate target agreed in Paris. In many other areas we also achieved a great deal in the past fiscal year. In occupational safety, personnel management, societal engagement, and in developing new environmentally friendly products in all Group Divisions, Voith is on the right track!

Thank you for accompanying us on our journey through your interest. I wish you an inspirational and informative read – and look forward to your feedback!

Sincerely yours,

A handwritten signature in blue ink that reads "U. W. f.". The signature is written in a cursive, professional style.

Ulrich Weiße

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**Stephan Schaller**  
President and CEO

## Dear Readers,

A few days ago we received the news that Voith has achieved Prime Status in the latest oekom research AG rating. This makes Voith one of the sustainability leaders in our industry – news that is just as pleasing as it is important. This rating proves that our efforts to achieve greater sustainability are effective, and that this achievement is being seen and recognized externally. It also means that we are gradually getting closer to our goal of becoming the industry benchmark for sustainability in our markets.

Our aspiration to deliver excellence plays a special role in terms of how we see ourselves. After all, only those who achieve excellent results on a daily basis will be successful in the long run. This is especially true when it comes to sustainability.

For over ten years now we have taken a systematic approach to sustainability management, implementing specific objectives that we monitor continuously. All this leads to measurable results that pay off in the truest sense of the word. For example, in the past five years alone we have achieved over €11 million in savings through our environmental management system in the areas of energy, water, and

waste. These are savings that benefit the environment and help us to withstand competition year after year. It shows in concrete terms that sustainable business practices lead to real competitive advantages.

And all this is no coincidence. Through our commitment we are embracing the tradition of Voith as a family company and remain absolutely committed to upholding it. At the same time we are making our company fit for the future, capable of weathering anything, and robust – ready for the coming decades of our company's history which already spans over 150 years.

This applies particularly to our approach to sustainability management. We have achieved a great deal in this regard in recent years, and undergone an important evolution. Today, we combine the advantages of centralized coordination with the experience and expertise of our locations. With our recently restructured Sustainability Steering Committee we are continuing this evolution and assigning responsibility to individual departments – in the interests of our company and our stakeholders.

We are already setting benchmarks in many areas of sustainability management, including the area of occupational safety. To give an example, our Frequency Rate – meaning the number of occupational accidents per million hours worked – currently stands at 1.4. This is an outstanding rate, which we first achieved three years ago and continue to meet. That said, when it comes to the safety of the people at Voith, no goal is high enough. Every accident is one too many and is a permanent reminder that we must not let up in our efforts. This is why we also take new and innovative approaches to become even better and reduce the number of accidents further still. To give just one example, in the area of occupational safety our eVAP (electronic Voith Awareness Program) app enables us to combine the possibilities of digitization with our know-how in occupational health and safety. The result is a tool that our employees embrace and proactively use, making work at Voith a little safer every day.

## “Sustainability is a fundamental part of how we see ourselves.”

Stephan Schaller

We also set benchmarks with our Green Controlling process: It enables us to gather and control all environmental KPIs – as well as to continuously leverage additional potentials to save precious resources. We have already received several awards for our management approach, and our strong oekom rating is also due in large part to our environmental management system. It is characterized by concrete objectives that we work tirelessly to implement. As our current target period draws to a close, we are well on the way to achieving – and in some cases even exceeding – the environmental goals we have set for the end of the current fiscal year. This benefits the environment – and also our company in economic terms.

We also have many plans for the future, as those who rest on their laurels soon fall behind the competition. Given that our current target period ends soon, we have already set ourselves new environmental objectives. For the first time we have also set ourselves specific requirements in terms of climate protection and reducing our CO<sub>2</sub> emissions. As a first step we aim to optimize our electricity mix and in doing so achieve a 25% reduction in our CO<sub>2</sub> emissions resulting from our power consumption by the end of the 2021/22 fiscal year. By the end of 2024/25 we then plan to reduce our total CO<sub>2</sub> emissions by 35% until we have achieved a 90% reduction by the end of 2049/50 – meaning our operations will be practically climate-neutral. Through our science-based approach, as a company we aim to contribute towards achieving the goals of the Paris Climate Accord and ensure future generations can enjoy a bright future – a guiding principle our founder Friedrich Voith embedded deep in the company culture. After all, taking responsibility for people and through this for the environment in which we all live, is inextricably linked to our company's economic success.

This makes sustainability a fundamental part of how we see ourselves, and is something that has shaped the way we do business for over 150 years. As a result, this past fiscal year was also marked by a large number of measures and activities to improve our sustainability performance. This Sustainability Report shows exactly what happened and what we achieved. It is the eighth consecutive report since we started making our efforts transparent in 2007. I am delighted that you are interested in following our progress, and wish you an enjoyable and informative read!

Sincerely yours,

A handwritten signature in black ink, appearing to read 'S. Schaller', written in a cursive style.

Stephan Schaller



E-Mail is sent to person

Use this  
Having  
Call for

Correlation to operating state

Evaluate

Escalation of Problem

Customer



# 1\_Strategy and Integrity

As a global technology group Voith sets standards worldwide in the Energy, Oil & Gas, Paper, Raw Materials, and Transport und Automotive markets through its diverse portfolio of systems, products, services, and digital solutions. Our 150-year tradition as a family business is shaped by a sustainable, values-based approach that commits us to conducting business in a way that is environmentally focused, fair, and oriented towards long-term economic success.

# 1\_Strategy und Integrity

## 1.1 Our Profile

Voith is one of Europe's largest family businesses. Since it was founded in 1867, sustainable thinking and a values-based approach have shaped our company – long before these concepts became part of the economic debate. At Voith, business success is founded on a long-term approach. In view of this, our shareholders, the Supervisory Board, and the Voith Corporate Board of Management work together under a joint commitment to develop the company in an economically, environmentally, and socially sustainable way.

Voith's economic strength is based on the following strategic principles that have been carefully established over the decades:

- A diversified product portfolio based on megatrends
- An international footprint and strong local roots
- Our capacity for innovation
- Our financial independence as a family-owned company

These principles underpin Voith's long-term success; they are also the prerequisite for the company's successful further development, also under the management of future generations.



Location Overview Online

### Overview of the Group

Voith is a global technology group present in over 60 countries. It maintains a worldwide network with around 120 production locations. Voith GmbH & Co. KGaA, headquartered in Heidenheim an der Brenz, Germany, is the operational holding company and parent company of the Group. The Group's core functions are also concentrated within it. The company operated under the name Voith GmbH until July 31, 2017. Since August 1, 2017 the company has been incorporated as a GmbH & Co. KGaA, that is, a partnership limited by shares. The Corporate Board of Management of Voith Management GmbH is responsible for the strategic and operational management of the Voith Group. Voith Management GmbH, which is 100 percent family-owned just like Voith GmbH & Co. KGaA, manages the businesses of Voith GmbH & Co. KGaA as the personally liable shareholder. The General Managers of Voith Management GmbH are appointed by the Shareholders' Committee of Voith Management GmbH. The supervisory body of the GmbH & Co. KGaA is the Supervisory Board.

As at the end of the reporting period the Group's operating business is bundled within four Group Divisions, which are each managed by legally independent management companies:

- Voith Hydro is a turnkey provider and a leading industry partner to hydropower plant operators for equipping hydropower plants.
- Voith Paper is a system supplier to the paper industry, providing technologies, products, and services covering the entire paper production process.
- Voith Turbo produces drive solutions as well as technical systems and components, which are in use around the globe in industrial plants as well as on railroads, highways, and seaways.
- Voith Digital Solutions combines long-standing automation and IT expertise with hydropower, paper machine, and drive technology know-how. Established in the year under review, this Group Division develops innovative products and services together with existing and new customers to drive forward the Internet of Things and shape the digitization of machine and plant manufacturing.



Annual Report 2017,  
 p. 52 et seq., Group strategy

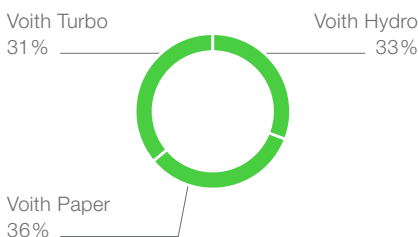
**The 2016/17 Fiscal Year – A Good Year for Voith**

In Voith's 150<sup>th</sup> anniversary year the operating business continued its positive development, reinforcing the company's sustained earning power. We achieved, and in some cases beat, forecasts. Given the slightly brighter investment climate, orders received increased by 6.3% to €4.4 billion versus the previous year. As forecast, Group revenues of €4,223 million were maintained at the previous year's level (€4,252 million) despite the challenging market environment.

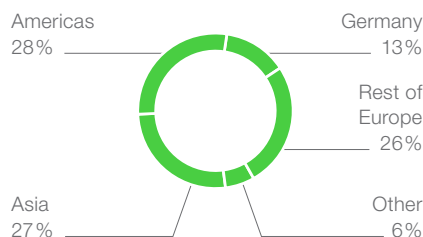
In the reporting year the three original Group Divisions continued to benefit from efficiency gains from the successfully completed Voith 150+ Group program. As a result of this, the operating profits of Voith Hydro, Voith Paper, and Voith Turbo rose by 3% overall. The ROCE (Return on Capital Employed) of the core business improved from 15% in the previous year to 16%. In the reporting year currency effects had no material influence on the development of Voith's key figures.

**Total Revenues €4,223 million**

by Group Division

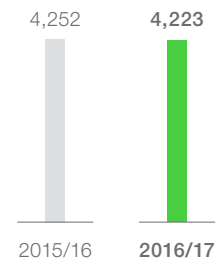


by region



**Group Revenues**

in € million





Annual Report 2017,  
p. 58 et seq.,  
Business development



Fact base  
Economic Indicators  
Fact base  
International Focus  
Fact base  
Financial Assistance

In the Voith Group, the reported profit from operations of €241 million was, as expected, below the previous year's value (€275 million) owing to forward-looking investments in the Group's digital transformation. The net result reached a record level in the year of the company's 150<sup>th</sup> anniversary: Influenced mainly by the successful sale of Voith's stake in KUKA AG, net income amounted to €596 million (previous year: €29 million). This also improved the Group's asset and financial position. At the end of the reporting year Voith has an equity ratio of 27% and our net liquidity is around €650 million.

### Group Transformation Fully Completed

The Group transformation launched in the fall of 2013 was completed fully and successfully in the reporting year. As part of this transformation, we worked hard to adapt our product and service portfolio to meet market requirements, increase our efficiency through improved structures and processes, and reduce costs. We handled workforce changes associated with the Group transformation fairly and responsibly in discussion with workers' representatives – an approach that is fully commensurate with Voith's culture and values.

We have set a course to safeguard the long-term competitiveness and further growth of the Voith Group primarily through the following measures:

- We have fundamentally transformed the Group Division Voith Paper and taken into account the far-reaching structural change in the paper machine market. We completed this turnaround, with Voith Paper operating successfully again in the market with a lower cost structure and modified product range.
- We divested the Group Division Voith Industrial Services. The rationale for this was the fundamental strategic decision to focus the Voith Group on its technology and engineering expertise for the digital age.
- A targeted portfolio adjustment was made in other business areas. This included the consolidation, reduction in size, or closure of locations that did not achieve planned profitability levels.
- We implemented a more streamlined, centralized administration system, and rolled out Global Business Services units for accounting, human resources, and purchasing. On top of this, we managed to complete this comprehensive transformation of our indirect activities in the 2015/16 fiscal year – a year earlier than originally planned.



Annual Report 2017,  
p. 54 et seq., Successful  
completion of the Group's  
reorganization

At the end of the 2016/17 fiscal year Voith is strongly positioned with a much improved cost structure, a substantially higher equity ratio, and strong net liquidity – giving us the financial and business scope for future development.

### Voith 150+ Next Level Launched Successfully

One of the cornerstones of our corporate culture is the constant pursuit of improvement. Following the successful completion of our Voith 150+ efficiency program,

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this is why we developed and officially launched our Group-wide Voith 150+ Next Level excellence program on August 1, 2017. Compared to its predecessor, the new program aims not only to optimize structures and costs but above all to optimize growth. Excellence, meaning outstanding performance in all areas of our business activities, is the prerequisite for this.

Voith 150 Next Level embodies this conviction. The program comprises five modules: Operations Excellence (OPEX), Administration Excellence, Product Improvement and Engineering Excellence, Sales Excellence, and Quality@Voith. The scope of each module is derived from a detailed analysis of Voith's current products and processes. This scope was further expanded upon based on employee feedback from every region. We also benchmarked ourselves to other companies, as our aim is to always be among the best in our industry.

Each of the five modules is led by a manager and is sponsored by a member of the Voith Corporate Board of Management. The modules support ongoing and new excellence initiatives and projects at a Group, Group Division, and regional level; they also offer methods, tools, best practice examples, and comprehensive training on product and process improvements.

The five Excellence Modules are accompanied by a further development of our corporate culture, as responsible thinking and actions form a key prerequisite for top performance across all areas of our company. This is why we encourage our employees to seize the initiative more frequently and put forward their ideas independently of hierarchical levels. We ask them to point out sources of errors or emerging problem areas at an early stage, and see mistakes as an opportunity for improvement. This requires dialog-based leadership, which lays down the framework for employees to actively shape improvement processes, innovation, and change. These aspects are emphasized in our new leadership concept, which defines the behaviors and actions expected of management, and also form an integral part of our leadership training activities.

### Forging Ahead with Our Digital Agenda

In the reporting year we further drove the implementation of our digital agenda. Over the course of the previous and current reporting years we will have invested around €100 million in the development of digital products and services, on top of the Group's existing R&D expenditure.

The Group Division Voith Digital Solutions, founded in the 2015/16 fiscal year, is at the heart of our digital agenda. We are concentrating all our know-how in the areas of automation, IT, software, data analytics, and sensor technology in this Group Division. This makes Voith Digital Solutions a digital enabler of our original core activities on the one hand, while on the other it develops completely new digital products and solutions.



Employees chapter,  
pp. 49–67

Annual Report 2017,  
p. 55 et seq., Growth  
through excellence:  
Voith 150+ Next Level  
launched

Voith Digital Solutions pursues three strategic directions:

- 1) Supplementing Voith's existing product portfolio with digital capabilities that offer the customer additional functions and benefits
- 2) Developing new digital solutions for our traditional core markets
- 3) Developing new applications and business models for markets not yet covered by Voith

In the reporting year Voith Digital Solutions began to develop new digital products and solutions, the first of which are already proving successful in the market – including merQbiz, the digital marketplace for recyclable paper. In addition, in collaboration with our three original Group Divisions, Voith Digital Solutions is working on a large number of incubator projects, the first of which will be launched in the 2017/18 fiscal year. However, the digital transformation is affecting our company far beyond the core of Voith Digital Solutions. It influences our own production and administration processes, changes the requirements on our employees, and demands new training and further education models. It alters the way we work with each other, and therefore affects the way we design our working environment. Digitization is also reshaping the way we approach and interact with customers and business partners, employees and applicants, as well as many other stakeholders. Our trajectory is marked by dynamic change, and Voith Digital Solutions is helping our entire Group keep pace with and shape this trajectory.

#### **Strategic Investment in Ray Sono AG**

We acquired a majority stake in Ray Sono AG in May 2017 as part of our digital agenda. Ray Sono is one of Germany's leading digital service providers, serving well-known industrial companies as well as businesses with a B2C focus. Ray Sono also has special expertise in the areas of design thinking, data preparation, and user experience. This makes the partnership especially attractive to us as, from our customers' viewpoint, well-designed and intuitive user interfaces and ease of use – qualities typical of end-consumer electronic devices – are also becoming increasingly important on systems and machines in the industry sector. Our strategic partnership with Ray Sono ranges from the joint development of industry-related digitization solutions, particularly in the area of Industry 4.0/Internet of Things, through to the implementation of digital solutions within the Voith portfolio such as the virtualization of machines and systems as well as the improvement of existing digital solutions.



Annual Report 2017,  
p. 53 et seq., Forging ahead  
with the digital agenda

## 1.2 Strategy and Organization

### Sustainability – Targeting a Leading Role

In terms of sustainability our clear goal is to become the industry benchmark in the markets and sectors in which we operate. We therefore base our processes on this to make a measurable contribution to the sustainable development of our company, society, and the environment. We also understand Voith's tradition as a family-owned company as a commitment to conduct business in a way that protects the environment, is fair, and is oriented towards long-term economic success. This is both our guide and motivator. Just as we are world leaders with our products, we also aspire to take a leading international role as a sustainable company.

### Clear Structures in our Sustainability Organization

At Voith, sustainability is a cross-functional responsibility shared by our Corporate Board of Management, Group Divisions, and Corporate Departments. The central function Corporate Sustainability & HSE sets the framework for our strategic focus and the way we organize sustainability. It also advises our Group companies and Corporate Departments, and is responsible for the strategic development of the topic. It reports directly to the President and CEO, and takes decisions on the necessary tools and methods such as our sustainability database and associated reporting tools, used within our Group to measure and control our sustainability activities. Furthermore, this central function holds direct responsibility for the global specialist organization Health, Safety, and Environment (HSE) as well as the Sustainability Office.

Our central Corporate Sustainability Council (CSC) controls all of the Group's sustainability activities and reports directly to the Corporate Board of Management. The Council draws up decision-making principles, and as a control and monitoring body also monitors the operational implementation of strategies, objectives, and measures in the Group Divisions. Moreover the CSC is responsible for all key data-collection processes. Specific topics regarding the collaboration with non-governmental organizations (NGOs) and other stakeholders are also discussed and agreed in the CSC with those responsible.

In the 2016/17 fiscal year CSC convened three times. The core topics it addressed included the achievement of environmental objectives and the setting of new targets, also for the company's CO<sub>2</sub> emissions reduction. In addition, the CSC commissioned the Sustainability Office to produce a plan for the appointment of new members to the CSC; the change came into effect at the start of 2018. While the CSC previously only comprised Sustainability Officers from the Group Divisions, they will now be joined by the respective Department Heads. The specialist organizations (e.g. HR and Purchasing) are also responsible for the operational implementation of the measures.

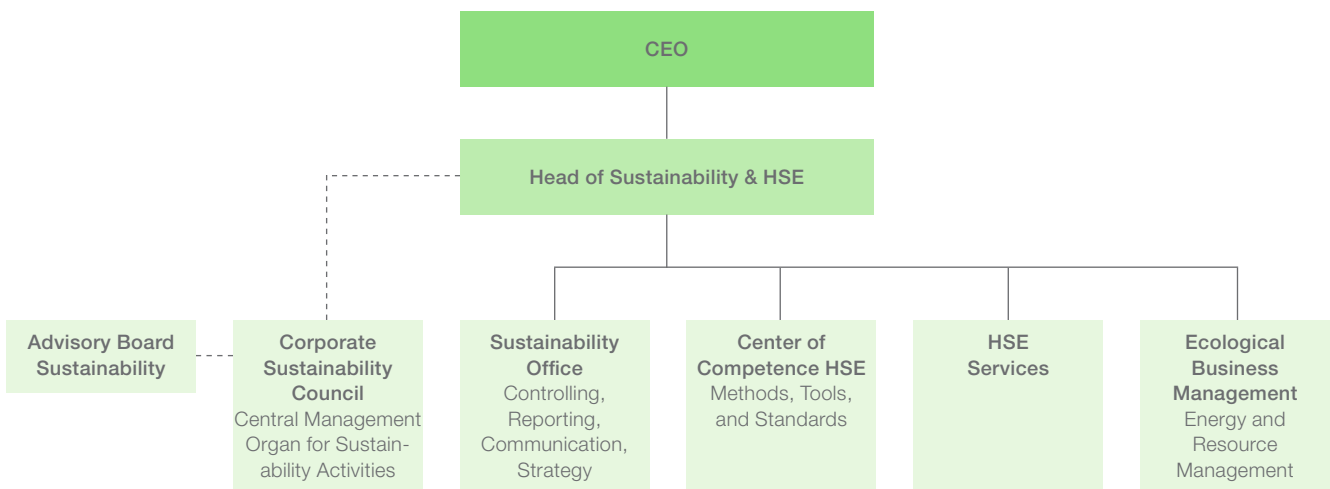
The organization, responsibilities, and principles underpinning our actions have been embedded in our Group Directive on Sustainability ever since 2015. We will modify this in the current fiscal year to respond to the updated organizational frameworks and thus also reflect the new composition of the CSC.

**Spotlight on HSE**

Voith's HSE organization follows a uniform business partner structure, thereby corresponding to our Group's Shared Services system. The Center of Competence HSE provides focused methods, tools, and standards from a single source for our Group Divisions. Furthermore, each Group Division is assigned one employee from the Center of Competence HSE as a business partner. As the central point of contact, this business partner advises the Management Board of the Group Division on all HSE matters.

Our operating units are responsible for implementing health, safety, and environment activities locally. Seasoned experts accompany the process via the Center of Competence HSE, helping to continuously improve HSE, leverage synergy potentials, and in doing so optimize service costs. Furthermore, as skilled partners they can be called upon to identify risks and systematically reduce them through a continual improvement process. To ensure safety the HSE software was implemented as efficiently as possible, each region started out by introducing a different module; this enabled every other region to build on the experience gained, significantly speeding up the roll-out.

**Sustainability, Health, Safety, and Environment Organization**





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Responsibility for Society

In the majority of cases the HSE experts are assigned either to the areas of Health & Safety or to Environmental Protection, with one expert each supporting several regional Voith companies depending on their size. Duties include providing support with opportunity and risk assessments, local approval of hazardous substances, and incident analyses. The experts also provide support with the Group companies' global HSE matrix certification.

The HSE Steering Team comprises the Heads of the regional HSE service organizations and the members of the Center of Competence HSE. It meets biannually and is chaired by the Head of the Corporate Sustainability & HSE central function. This regular exchange of experience has proven a success. The HSE Steering Team also conducts regional HSE audits at its meetings: These are an important element of internal knowledge transfer and also provide the framework for internal HSE audits.

Through our HSE organization we have a uniform global organization for health, safety, and environment with standardized processes, a powerful global IT system, and a Group-wide certified HSE management system. Over 97% of Voith employees around the world are supported or coordinated directly by our HSE organization. The remaining 3% of the Voith workforce are covered by qualified external service providers, who are coordinated and integrated by the respective regional HSE service organization. This mainly concerns countries where we only have a few local employees.



Fact base  
HSE Data Recording

### Systematic Further Development of Our Sustainability Approach

Voith defined six fields of action that integrate sustainability management into the Group. Our aspiration to practice sustainable corporate governance and our pursuit of profitable growth are just as much a part of these fields of action as our responsibility towards our products, the environment, our employees, and to society. We also regularly publish our goals as part of our sustainability reporting activities, and document our progress.

We are currently working on realigning our fields of action. While they will remain essentially unchanged, we will include additional topic areas and assign these to their respective managers. We will also define new target guidelines as part of this realignment – especially in terms of our CO<sub>2</sub> emissions, which we want to reduce further. Voith is committed to the targets set as part of the Paris Climate Accord, and will meet its corporate responsibility in this regard. To deliver on this, our Corporate Sustainability department will develop a new CO<sub>2</sub> emissions target corridor in the current fiscal year that will also set interim targets based on fact-based forecasts.



Environment chapter,  
p. 31–47

We take a systematic approach to implementing our Sustainability Strategy. To monitor our progress, our CSC checks our achievement of sustainability goals on a quarterly basis at both a Group and Group Division level. The resulting quarterly report contains a detailed list of measures that outline the tasks, responsibilities, and deadlines for the respective operational level.

#### **Matrix Certification Process Established**

By establishing our global HSE organization we also laid the basis for our global HSE matrix certification system. This includes all ISO 14001 and OHSAS 18001 certified Voith locations, including the holding companies and our HSE management system.



Fact base  
Certifications

Besides the transformation of our formerly local documentation, in the reporting period we focused on introducing and applying our Legal Compliance module. Based on a global standard, this module provides us with even greater transparency in terms of legal certainty regarding the current status and application of laws.

The organization has since been established and is in operational support mode. It is now important to ensure that we handle the corresponding change process successfully in our company. We still expect that the new organization will be fully embedded in the company within the next two years, at which point every employee will be able to use the processes and standards. This process is being supported by an international information and training program which we set up in the 2016/17 fiscal year; this is designed to enable the HSE Steering Team to strengthen personal contact with experts locally, and in doing so to stabilize and continuously improve the organization. The focus is on establishing a common understanding of our HSE culture, on training for the uniform application of the hse+ IT tool, and HSE process training as part of workshops. Through this, we also ensure that information is shared biannually between the employees from the regions, the HSE Steering Team, and the regional HSE experts.

#### **Sustainability Communication as a Success Factor**

We specifically employ suitable means of communication, such as our regular Ecological Business Management newsletter, to motivate facility managers and employees in the Group companies to get involved in identifying savings potentials and measures. Through these we reach plant managers in particular and encourage them to adopt measures that other locations have already implemented successfully. Two newsletters (HSE Best Practices and HSE Flash News on current HSE risk areas) complement our communications mix with information on incident-related focal points in HSE. Clear focus areas and concrete examples of success in each issue provide practical guides on how to integrate the measures into everyday work life.

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### Focus on Stakeholder Dialog

Regular dialog with a large number of stakeholders is essential for a global Group such as Voith. Through this, we incorporate their varying demands, interests, and expectations in our key business decisions. Our key dialog partners include shareholders, supervisory committees, employees, the Works Council, our customers, suppliers and investors, as well as neighboring communities, trade associations, academia, government agencies, and policy makers. We also focus on NGOs such as the World Wide Fund for Nature, and naturally the broader interested public.



Fact base

Association Membership

### External Experts Provide Further Stimuli

Our Advisory Board Sustainability meets annually and provides us with external expertise. Comparing our own experiences with the perspectives and assessments of other companies as well as the social environment constantly provides us with new stimuli for the management of sustainability at Voith. The committee comprises Prof. Dr. Stefan Schaltegger from Leuphana University, Lüneburg, Germany, and Andreas Zamostny, CEO of sustainability management consultancy Schlange & Co. GmbH based in Hamburg, Germany.

Among other things, the external experts' findings led to the aforementioned reorganization of our CSC in the reporting period. The recommendation to integrate our existing sustainability approach into our Corporate Strategy originated from a suggestion from the Advisory Board Sustainability; as a result we already initiated a corresponding process in the reporting year.

### Stakeholder Survey with New Model

Regular stakeholder surveys help us to learn more about our stakeholders' expectations and requirements, and assess Voith's sustainability performance from an external viewpoint. Our surveys in 2013 and 2016 performed well in this regard and provided a good overview; however, it became apparent that our stakeholders' expectations differ significantly from one region to another. To meet these wide-ranging requirements, regional, industry, and stakeholder-specific approaches are required.

This is a challenge we intend to meet by overhauling our survey model: Instead of a single global survey covering all topics, we will run topic-based and possibly region-specific surveys in future. This will support us in rooting our organization even more firmly in the regions.

We will supplement this with direct stakeholder dialog, which will enable us to obtain even more detailed results and help our departments to meet individual stakeholder requirements in an even more targeted way. We also plan to increase the frequency

of surveys, although these will be much smaller in scope. We intend to launch our new form of stakeholder dialog in early 2018.

### **Transparent Reporting for Different Audiences**

Since as long ago as 2009 we have informed our stakeholders of our performance through our annual Sustainability Report as well as via additional online information. To ensure our reporting remains as effective as possible, last year we developed a new reporting model that focuses even more strongly on our target groups. Positive feedback from our target groups confirms this approach, which we will continue systematically in this report.

In our traditional sustainability report we continue to concentrate on the fields of action that matter most to our company and stakeholders. We have supplemented this with an extensive online facts & figures resource that includes detailed information intended mainly for sustainability experts and specialists. We also publish an additional brochure every two years in which we explain the principles of our commitment and report interesting facts about our sustainability activities in a compact form. This brochure is intended mainly for interested parties who want to gain an initial overview of our activities.

We have also explained our sustainability strategies and measures for many years now in our annual reports. We also keep our employees regularly updated on sustainability issues through posts on our Group-wide intranet and articles in our employee magazine.

### **Materiality Analysis as the Basis**

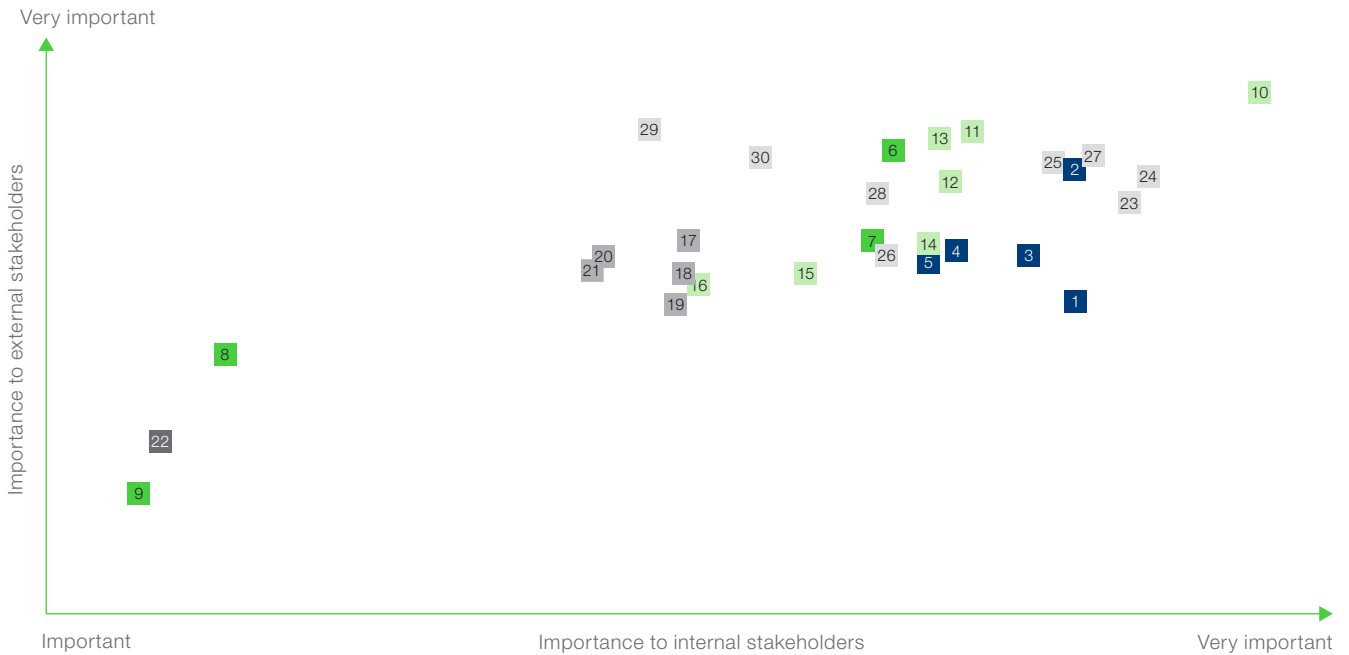
The results of our stakeholder survey of 2016 provided us with the basis to perform a detailed materiality analysis, and continue to help us prioritize our activities and focus on the essential aspects. In line with the redesign of our stakeholder surveys, in 2018 we will also progressively adjust and, where applicable, refocus our materiality analysis.

### **Continuous Development of the Sustainability Organization**

Since 2018 we have continuously embedded sustainability deeper in our organization. The current structure comprising our Sustainability Office, the CSC, and the Sustainability Advisory Board has proven to be powerful and effective in recent years – not least providing confirmation of the full achievement of our environmental objectives.

HSE Controlling laid the basis for transparent sustainability reporting, and Voith received numerous awards for it – particularly in the areas of resource efficiency, and occupational health and safety. At the same time, it became apparent that

Materiality Analysis



Management

- 1 Anti-corruption
- 2 Data Protection
- 3 Economic Stability
- 4 Good Governance
- 5 Human Rights

Supply Chain

- 6 Supply Chain Anti-corruption
- 7 Supplier Relations
- 8 Environmental Standards
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- 17 Material Efficiency
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- 23 Customer Collaboration
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- 27 Energy-efficient Products
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individual aspects of sustainability within our Group Divisions are still at different stages of development and that there is potential for improvement. This is why we are working on developing new sustainability objectives within the departments and assigning clear responsibilities. After all, our goal remains unchanged: Voith aims to be the industry benchmark in terms of sustainability in the markets and sectors in which it operates.

## 1.3 Values and Compliance

### How We See Ourselves

At Voith we combine the tradition of a family-owned company with the culture of a global Group. Voith has been undergoing a comprehensive transformation process for several years now that affects our portfolio of products and services, our organization, and our culture. In the reporting year we consolidated the way we have come to see ourselves in a new corporate mission statement. Our vision: Voith is the industrial technology partner for generations to come.

Our values underpin all of our actions: We are respectful and reliable, open and ambitious. Our values, and the guidelines derived from them, ensure that Voith acts according to the same business principles and adopts the same philosophy worldwide. We have summarized this mission statement in our new claim, which we presented in the 2016/17 fiscal year: Inspiring Technology for Generations. Our new claim took effect on January 1, 2017 – the beginning of our 150<sup>th</sup> anniversary year – and has been in use globally ever since.

### Code of Conduct for All Employees

Voith committed itself to upholding the following business principles way back in 1927: “In the business world one must be ethical, decent, and honest. If a contracting party or competitor behaves unfairly, this does not give us the right to deviate from this principle.” These principles still govern our actions today. Our Code of Conduct defines the way we act towards customers and business partners, as well as how employees behave towards each other within the company. It can be viewed online and provides information on contact partners and the Voith Compliance Committee.

We require every single one of our employees to comply with prevailing legislation and our company’s internal regulations. This applies across our Group and all hierarchical levels, with any violations entailing sanctions. We constantly update our rules and procedures, and adapt them to meet current requirements.



Fact base  
External Chartas and Principles

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### Key Aspects Addressed by the Voith Code of Conduct

- Observance of the rules of fair competition.
  - No anti-competitive agreements.
  - No corruption or bribery: No offering and granting, or demanding and accepting of unfair advantages.
  - Transparency on donations and sponsorship.
  - Safeguarding our own and respecting others’ patents, industrial property rights, and trade secrets.
  - No undue preferential treatment of suppliers and service providers.
  - Respect for human rights, fair working conditions, and rejection of child and forced labor.
-

Our Profile

Strategy and Organization

Values and Compliance

Responsibility for Society

### Voith Compliance Committee

The Voith Compliance Committee is responsible for establishing, developing, and coordinating our Compliance Program, revising compliance regulations, and coordinating training. This committee meets monthly and comprises the Head of the Group Law Department (Chairman) as well as the respective Heads of the Group Human Resources Management and the Group Audit Departments. Its Chairman reports directly to the Corporate Board of Management of Voith GmbH & Co. KGaA. The CFOs of the Group Divisions and the individual Group companies serve as the Compliance Officers in their units. Within their area of responsibility, our Compliance Officers are responsible for implementing our Code of Conduct and also serve as Group-wide contact partners. This also corresponds to our other Risk Management organization.

### Compliance Training for Employees

All of our employees are required to keep themselves regularly updated on compliance issues and on our Code of Conduct via our e-learning programs. Through their successful participation, employees also document that they are fully aware of our Code of Conduct and have understood the appropriate regulations. Around 98% of our employees with a computer workstation completed our programs on Anti-Corruption and Antitrust Law, as well as on Leadership and Employees. A higher degree cannot be achieved owing to customary headcount fluctuation in a company, so we assume the programs cover all employees. Employees who do not have a computer workstation are trained by their line manager to ensure their knowledge is up to date.

Face-to-face courses were also held again in the reporting year, which are now also assigned automatically to individual buyers. 576 employees, mainly comprising managers and employees from Sales and Purchasing, took part in 25 events. Separate, highly detailed training courses were offered to Compliance Officers from our Group Divisions.



Fact base  
Compliance Training

Fact base  
External Security Personnel

### Group-wide Information and Complaints Reporting System

Any employee can report abuse, complaints or violations of our Code of Conduct to us. This principle applies just as much to our employees as it does to our suppliers, local residents or other stakeholders of our company.

There are several ways in which Voith employees can do this: either personally through their line manager or the Compliance Officer, or electronically via the Helpdesk, or by e-mail. We also follow up on complaints that have been submitted anonymously via our Group-wide whistleblower system, with the number and type of violations documented centrally.

This whistleblower system can also be accessed by external parties at any time via our company website, so it is open to all business partners and suppliers too. Any type of complaint on any subject can be reported. And to ensure the strictest



Fact base  
Violations of  
Compliance Regulations  
Fact base  
Escalation Paths

confidentiality is maintained, the number and nature of the complaints at Voith are not disclosed externally.

Reports relating to the environment can also be submitted to the local Environmental Officer. The exact complaints process and escalation paths are set out in our HSE Group Directive and its annex Environmental Incidents. Complaints are communicated based on their severity along disciplinary and functional reporting lines. We are pleased to report that no instances were reported to Voith in the reporting period.

### **Regular Reviews Guarantee Effectiveness**

Our Internal Audit Department examines observance of all compliance regulations in a routine risk assessment involving around 30 operating units annually. We ensure that our business partners comply with our regulations by means of a Supplier Self-Assessment (SSA). Compliance also forms part of our General Purchasing Conditions (GPCs). For the reporting period we are pleased to announce that we neither received any complaints concerning supplier violations of environmental or social standards, nor were we notified of any suspected cases of corruption.

As in virtually all companies, in the reporting year we also had isolated cases where compliance regulations had been violated at Voith. Appropriate action was taken in all instances.

### **Continuous Optimization of Compliance Organization**

We work tirelessly to optimize our Compliance organization, and adapt it to meet new standards and requirements. As an example of this, in January 2017 we implemented the UK Modern Slavery Act declaration in our organization. In light of this, among other things we also published our Management Board Declaration on Human Trafficking, Forced Labor and Child Labor. Furthermore, we reviewed our compliance system against the requirements of the German federal government's National Action Plan on Business and Human Rights. We are pleased to report that no modifications were needed.

### **Scope of Training Expanded**

We are also expanding our training courses in line with optimizing our Compliance organization. In the 2016/17 fiscal year we launched a new face-to-face course on Business Crime and Preventative Accounting Measures for all Accounts employees in our Shared Services organization. Additionally, the Compliance area of human trafficking, forced labor and child labor was integrated into existing courses.

### **Tackling Corruption**

It is vital that we take rigorous action against corruption. This is why all Compliance Officers are required to create a Risk Control Matrix that also includes potential corruption risks for their specific Group Division. This structured process covers all



Voith locations worldwide. The results of all Group Divisions are aggregated and, among other things, form the basis of internal compliance audits.

Our risk assessment is based on many factors including the Corruption Perception Index (CPI) published annually by Transparency International; this index ranks virtually all countries by their perceived levels of corruption on a scale of 1 to 100. As we maintain business relationships the world over, special precautionary measures apply to high-risk countries, whereby the risk manager responsible decides on the measures. 176 countries are listed in the Corruption Perception Index.



CPI Index

### Human Rights

Compliance with human rights is a matter of course for Voith as a global Group. As part of creating their Risk Control Matrix, Compliance Officers also review whether there is a risk of child or forced labor in the company. In the reporting period we are pleased to announce that we were not notified of any human rights violations.

### Confidential Treatment of Information

Information security and protection of confidential data are core aspects of privacy and information security at Voith. Every employee is expected to show appropriate awareness of security and a sense of responsibility. Our information technology and security management system is certified according to the international standard ISO/IEC 27001. Appropriate handling of company, business partner, and personal data is also governed by our Group Directive on Information Security and Data Protection. In the reporting period we are pleased to announce that there were no notifiable breaches of data security.



Code of Conduct  
[www.voith.com/corp-en/about-us/compliance.html](http://www.voith.com/corp-en/about-us/compliance.html)

## 1.4 Responsibility for Society

Our understanding of sustainability has always included the aspiration to be socially active as a company. In Heidenheim, where we have our headquarters, as a good neighbor we are actively involved in various initiatives including as sponsor of a training program run by the Sonderberufsfachschule Hanns Voith (Special Vocational College Hanns Voith). We have focused on the areas of sports, education, social affairs, and culture, which we support either through direct financial contributions or in-kind benefits.

### Group Directive Defines Frameworks

Our Group Directive on Donations and Sponsorship has set out the type and scope of our commitment ever since 2008, and also outlines the financial frameworks of our donations. The budget is based on the previous year's Earnings Before Tax (EBT), limited to a maximum of 1% of EBT or at least two-thirds of the volume of funding in the year before last. This smoothing ensures that we can provide consistent

support, irrespective of any volatility in our company's development. We record our donation and sponsorship activities once every six months, covering all our global activities and across all business units using our internal controlling systems. The Head of the Legal Department informs the Corporate Board of Management once a year on how funds have been allocated across the entire Voith Group.

Clear criteria enable us to select projects in a targeted way that also conforms with our guidelines. To qualify for assistance, above all we must be convinced of the recipient's integrity and that their project is a worthy one. We also take into consideration the regional relevance and the appropriateness to our business segments, values, and corporate culture. Furthermore, we consider the frequency and volume of previous contributions, ensuring these are distributed as widely as possible. Irrespective of this, in humanitarian emergencies that demand urgent action we provide help quickly and directly.

By contrast, our sponsorship activities always focus on the appropriateness of the contribution and the benefit we received in return. This is because we follow additional, mainly communicative goals besides providing sponsorship.

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### Ready for Africa's Future

In 2017, the year of our anniversary, we supported the establishment of a Voith Code Club in Tanzania with a donation of €150,000. This is intended to help 480 girls and young women prepare to tackle the increasing technological transformation of Africa through communication, leadership, and programming courses. As part of this, we are working together with the aid organization Theirworld. We also joined the Global Business Coalition for Education (GBC Education). The donation was made possible by Voith employees who participated in sporting events around the world to mark the company's 150<sup>th</sup> anniversary. The donation was raised from the distances covered in various runs, hikes, and bike rides.

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### Organization of Our Engagement

Our social engagement activities are managed by Voith GmbH & Co. KGaA, headquartered in Heidenheim. In terms of organization, within our company we have also taken into account our activities' differing objectives. Our Legal Department coordinates our social engagement activities, while Corporate Communications controls our sponsorship activities. Individual Group Divisions and local Group companies can also launch and run their own assistance and sponsorship projects, provided they comply with our Group Directive.

We also support numerous initiatives and projects in coordination with the Hanns Voith Foundation. Through its activities, this independent foundation regularly

engages in a large number of local and cross-regional initiatives, and also provides financial support in the form of annual donations to various projects.

### Our Engagement Activities in the Reporting Period

In the 2016/17 fiscal year we invested around €2.96 million in social engagement activities (previous year: €2.08 million). This increase resulted mainly from donations to the Hanns Voith Foundation.

We provided €1.91 million in the form of donations, while €1.04 million was used for sponsorship measures. We spent the greatest share on education (54%), followed by sports (32%), social projects (9%), and cultural projects (3%). Political parties and organizations received financial contributions of €50,000 from Voith in the reporting year.



Fact base  
 Donations and Sponsoring

Fact base  
 Contributions to Political Actors

### Sports Engagement

Voith sponsors both professional and amateur sports, and supports sports clubs and events around the world with the main focus on Heidenheim. In the reporting year we invested €0.95 million in this area. At our company's headquarters, we sponsor the sports club 1. FC Heidenheim 1864 e.V.; this includes sponsoring the naming rights to the Voith Arena and supporting the club as the principle sponsor of the shirts and perimeter boards. By doing so, we aim to increase recognition of the Voith brand in particular. In addition, we sponsor the fencing center of the Heidenheimer Sportbund 1846 e.V. (HSB – Heidenheim Sports Association) as well as the local HSB baseball team and the HSB Athletics Department, whose training site bears the name Voith-Sportzentrum (Voith Sports Center). We believe support for local initiatives is an investment in the attractiveness of the region – one which benefits both the regional citizens and our employees. Furthermore, in the 2016/17 fiscal year we provided financial assistance to the sunpor cycling club, St. Pölten, the TSV Crailsheim women's football club, and the DomiZiel curling team (Special Olympics World Champion), St. Pölten.

### Committed to Education

A good education and training provide the basis for the best development opportunities in life. This is why we support kindergartens, schools, and universities around the world, continuing the tradition of Hanns Voith. Starting way back in 1946, Voith has dedicated itself in the German state of Baden-Württemberg to taking disadvantaged young people and preparing them for training schemes and the world of work. What initially started as a vocational preparation and training course has now become an institution, and has been recognized since 2004 as the Sonderberufsfachschule Hanns Voith (Special Vocational College Hanns Voith).

14 years have passed since we began supporting the Germany-wide business@school education initiative of The Boston Consulting Group. It gives senior high-school students a closer look at business, including hands-on experience, over the course of one school year.



Fact base  
 Special Vocational  
 College Hanns Voith

Fact base  
 business@school  
 Education Initiative

At university level we support young talent through the German Deutschlandstipendium scholarship initiative. Furthermore, we provide endowments for professorships at the German universities of Stuttgart, Ulm, and Aalen. By doing so, we aim to contribute – without influencing the research content or teaching practices – to training new academic talent and promoting research in scientific areas relevant to Voith.

Our long-standing cooperation with schools and universities has also proven its worth in Europe, the US, India, China, and Brazil. Our assistance in this area includes support for the Educational Freedom projects of Recreatur ResgataTUR, Escola Estadual Conjunto Habitacional Voith, and Friedrich von Voith School in São Paulo, Brazil as well as the Formare project of Fundação lochpe. Each year Formare offers 20 children from low-income families the chance to take a training course and go on to gain a state-recognized qualification. Employees' children are excluded from taking part.

We forge a link to our cultural engagement through our contribution to the Heidenheim Opera Festival, of which we are the main sponsor. In the reporting year this support included inviting all fourth grade primary school pupils in Heidenheim to the Junge Oper opera for youngsters, thereby contributing to these pupils' early musical education.

**Cultural Engagement**

We want to give as many people as possible access to culture. As an example, in the reporting period we provided financial support to various institutions in Heidenheim, including the Opera Festival with a €60,000 donation.

**National and International Social Engagement**

Our company also stands for encouraging global social engagement that improves people's living conditions and promoting intercultural exchange. For instance, Voith is one of the initiators of the German industry integration initiative Wir zusammen (We Together), which helps refugees integrate in Germany. We are involved in providing an introductory vocational training course for young refugees to facilitate their start into professional life or vocational training. Three refugees had already completed their one-year entrance qualification in July 2016. Two of them have been particularly successful, and they have been in vocational education since September 2017 – one as a metal technology specialist in at Voith. Another refugee began his vocational training in September 2017 as an IT systems integration specialist.

Many of our employees volunteer their spare time to assist people in need. Among our activities in this area, we support them by granting temporary paid release from work and providing them with materials or equipment that is no longer required.



Fact base  
University Engagement and  
Endowed Professorships  
Fact base  
International Education Projects



Fact base  
International Education Projects

Our Profile

Strategy and Organization

Values and Compliance

Responsibility for Society

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## 150 Good Causes – Global Engagement in the Anniversary Year

We used our 150<sup>th</sup> anniversary year to further the global social engagement of our locations. 150 social projects were carried out around the world between January and July 2017 as part of our 150 Good Causes campaign. Regional teams were able to set different priorities based on our donation rules, and depending on requirements, support either educational projects, social aid projects, or cultural or sports activities. Up to €1,000 per project was available. Our financial support for suitable initiatives was – as is typical for a family company – complemented by the active personal involvement of our workforce.

Among the initiatives, in Brazil support was provided to the Dorcas Institution, which aims to protect children and adolescents from slipping into a life of drug trafficking or prostitution. The Indian project Midday Meal reaches out to needy children from families who live below the poverty line, with Voith providing school bags, meals, uniforms, and books. The aim is to give poorer children just as good a chance as children from socially better-off families. At our US location in Appleton, Voith got involved in the technical education of students, and promoted a range of training programs in robot design, programming, and innovative thinking. There was a similar focus in Sweden, where the organization KomTek Glada Hudik was selected for inclusion in our 150 Good Causes campaign. Their goal is to introduce youngsters to technological topics, technical education, and entrepreneurial thinking from an early age.

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## 2\_Environment

We aim to conserve resources and minimize our environmental impact in all of our activities. This is why we see it as our responsibility to handle resources and energy efficiently as well as to avoid environmental risks at all of our locations. By linking our economic principles with an environmental approach we not only contribute actively to protecting the climate but also create measurable added value for our company.

## 2\_Environment

### 2.1 Environmental Management Approach

As an industrial company Voith is required to comply with a large number of national, regional, and industry-specific laws, regulations, and guidelines. The need for Voith to demonstrate full compliance with these goes without saying. At the same time, we see ourselves as responsible towards our employees and neighbors for avoiding environmental risks and using resources responsibly. As a manufacturer, our main focus therefore lies on energy and resource management. Through this we intend to continually reduce our energy consumption and corresponding greenhouse gas emissions, make efficient and safe use of direct materials and raw materials, and prevent waste as much as possible. We also work continuously to reduce our water withdrawal and wastewater volumes.

To steer and coordinate our environmental activities we defined two main subject areas:

- **Operational Environmental Protection – Eco Standards** provide strategic and operational support to our divisions and locations in complying with and implementing environmental regulations as well as internal environmental protection policies.
- **Resource Protection – Ecological Business Management (EBM)** improves energy and resource efficiency at our locations.

#### 2.1.1 Operational Environmental Protection

##### **Eco Standards Establish Clear Frameworks**

The aim of operational environmental protection is to minimize all environmental impacts of Voith's operating activities. Our activities in this area focus on strategic and operational control, with the aim of ensuring environmental regulations are implemented and upheld. In particular, this includes the analysis and internal communication of potential environmental risks, categorized into risk classes according to their probability and potential impact.

Our HSE Steering Team coordinates and standardizes our operational environmental protection activities. This decision-making body focuses on bringing a uniform and organized structure to existing environmental protection processes and procedures. In hazardous materials management, activities focus on replacing particularly harmful materials with harmless substitutes. Alongside this, we are working to reduce the total amount of substances we use.

In accordance with our Shared Services system, full-time environmental experts at the regional HSE service organizations ensure our Group companies are provided with high-quality, organized support. Our HSE Group Directive sets out specific requirements on how environmental protection is to be organized at a local level,



with every Voith location required to appoint an Environmental Officer. Their tasks cover a wide range of topics including emissions control and water protection, waste management, hazardous materials and goods, and preventing environmental incidents. They also advise operations managers on new plant constructions, modifications, and approval processes, and conduct regular site inspections and audits.

Our new organization proved successful in the reporting period, and Field Service employees were also increasingly involved in activities. A range of pilot projects were carried out successfully in the regions via the HSE platform, including one to assess hazards in Brazil and one run within the scope of hazardous materials management in Germany.

### **Central hse+ Platform Creates Transparency**

The work of our environmental experts is supported by the Group-wide hse+ IT system. It is the basis for matrix certification and supplies all key operational environmental protection data via uniform processes, forms, and evaluations.

In the reporting period we gradually migrated our most important environment-related systems to our Group-wide HSE software. This single platform now provides us with transparent and centralized access to all relevant information. Important facility-related requirements such as inspection deadlines, permissible limits, and restrictions are recorded in the system and are available for timely resubmission.

In addition, in 2017 we developed and tested another module to record and analyze environmental risks within our organization. Following successful pilot testing, the new Environmental Risk Assessment module will be rolled out Group-wide in the 2017/18 fiscal year.

ISO 14001 environmental certification prerequisites changed in the reporting period, and the migration of the OHSAS 18001 standard to ISO 45001 is also giving rise to new requirements. However, we see the changes in both standards as an opportunity to integrate health, safety, and environmental aspects even more as a matter of course into our daily processes. Preparations are going to plan for us to switch over to the new ISO 14001 standard in the coming fiscal year, and once it comes into force, also to the ISO 45001 standard in good time.

Through hse+ our experts also have access to a central legal database that contains all the relevant HSE regulations and standards that apply to us in each region. Besides current legislative texts, experts can also access summaries and comments in the respective national languages. The legal requirements are assigned via the system to the relevant officer, who then becomes responsible for ensuring the requirements are met. The same applies to Voith standards, approvals, and requirements. hse+ is also used to perform location-related environmental risk analyses. The measures derived are then assigned implementation responsibilities and review dates, and documented and monitored in hse+.

### Environmental Incidents Recorded and Analyzed Across the Group

All environmental incidents at Voith are recorded and analyzed centrally each month using a Group-wide reporting system based on standardized criteria. The Corporate Board of Management is informed about the results of the analysis on a quarterly basis. In doing so, we follow corresponding occupational health and safety categories so that we can evaluate and rate incidents across topics according to the same standards. As awareness of our Group-wide standardized process increases, so too does its use – with a corresponding increase in the quality and conclusiveness of the analyses. Internal communication measures also help to raise our employees' awareness. Among activities in this area, in the reporting period Voith Hydro ran a poster campaign promoting the careful use of resources.

With the Group-wide roll-out of our eVAP app, which covers not only occupational health and safety but also environmental aspects, the number of reported incidents continues to rise. Thanks to this, employees are not only reporting actual incidents, but also increasingly identifying potential risks – fundamental proof that there is a high level of awareness of the topic of HSE (health, safety, and environment).

We are pleased to announce that no incidents requiring public reporting were registered in the reporting period.

### Central Approval Process in Hazardous Materials Management

Arguably, just like every other industrial company Voith also uses hazardous materials in its production processes, such as paints, lacquers, thinners and solvents, adhesives, resins and hardeners, lubricants, cleaning agents, and industrial chemicals. We ensure these materials are used as safely and securely as possible by means of a Group-wide hazardous materials approval process. We base our decisions on our central hazardous materials database that allows us to perform a uniform global analysis of the environmental, health, and safety risks of work materials and hazardous materials. For many years now, we have worked to eliminate particularly harmful materials, and encourage the use of low-risk substitutes as well as the harmonization of safety standards across the Group.

We also aim to exert a positive influence on hazard potentials and costs by reducing the wide range of redundant materials we use. By adhering strictly to the “polluter pays” principle, we work to ensure that approved materials in our hazardous materials database are used in preference to all others. In doing so, we meet environmental protection, occupational health and safety, and compliance requirements while achieving the greatest possible degree of standardization.

Since rolling out the process, the quality and completeness of the data have already improved noticeably. Particularly in German-speaking countries, specific substitutes have already been proposed for certain product groups such as coolants and



Fact base  
Noise Complaints

cleaning agents. This means that we are progressively building the basis to be able to issue product declarations at the press of a button, and to reduce pollutants in our products.

Since launching the approval process in 2016, around 5,500 materials have been recorded centrally – 800 of which have either not been approved or blocked for future use. In the reporting year alone, 1,470 applications were processed. A new analysis process now delivers results that are reproducible across the Group, irrespective of which HSE experts were involved in the checking process. Thanks to the uniform Group-wide analysis process the rejection rate also increased year on year, with around 16% of applications rejected in the reporting year; in over half of these cases it was because they concerned banned or harmful materials – proof that the new process is working and effective. The other rejected applications were returned with the request to select a suitable substitute from the list of approved materials.

In coming years we will continue to gradually reduce the number of hazardous materials used; however, owing to the abundance of materials to be stored in the database, consolidation will take longer than was anticipated at the start of the project in 2011. Currently, we expect that the consolidation process for the German-speaking countries and the region of Europe will have been completed in the 2017/18 fiscal year. In the third quarter of this fiscal year we will start recording existing materials in the Americas and Asia in the database. Based on our previous experience, we expect the consolidation to have been largely completed (80%) by the end of the 2018/19 fiscal year at the earliest.

Back in 2016 we developed our Substances Navigator tool to provide information quickly and reliably whenever required on which hazardous materials are used in our products. The tool indicates any hazardous materials that product groups may contain. We update it regularly, and among other things it allows us to check quickly if and to what extent a (sub)product may contain certain hazardous materials. It also allows banned or restricted materials to be checked against current standards, so that Purchasing does not buy problematic materials in the first place, or a stop is put to their use as soon as possible. The existing base information in the database already allows us to deliberately avoid including redundant products by creating internal shopping baskets. Building on this, we will initiate pilot projects in the coming fiscal year to reduce the identified redundancies in these shopping baskets.



Fact base  
Nanotechnology


### 2.1.2 Efficient Use of Resources

Through Ecological Business Management (EBM) we aim to identify ecological, environmental and economic potentials for improvement in our production processes and leverage these potentials by performing analyses at process, system, and component level.

To assist with this, in the reporting period we improved our process of continuous data collection. In doing so, our central database now also includes data that allows for weather influences (heating-degree days) that all EBM locations can access. In addition, we integrated the gathering of emissions data on process-related gases such as sulfur hexafluoride (SF<sub>6</sub>) and refrigerants. We also revised our updating process for greenhouse gases and other emissions.

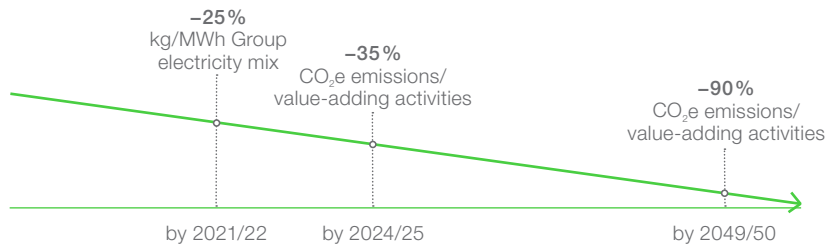
Our activities focus on the areas of energy, waste, and freshwater for which our Corporate Board of Management set specific targets taking the 2011/12 fiscal year as the benchmark: We will reduce our energy consumption by 20% based on revenue, our waste by 25%, and our freshwater withdrawal by 10% by the 2017/18 fiscal year.

We expect to achieve these targets by the end of the 2017/18 fiscal year. However, at the end of the target period our measures in the area of water will show a decreasing marginal utility, as the majority of potentials will have been exhausted at that point. Furthermore, there will be a conflict of objectives between the areas of water and energy if a greater amount of environmental heat is to be used in the future. We are reducing our fossil-fuel consumption also by switching to water-based heating and cooling. Although this increases the volume of freshwater we require, as we only use it for heat exchange the environmental impact of this is far less than the increased

 Fact base  
Environmental Goals

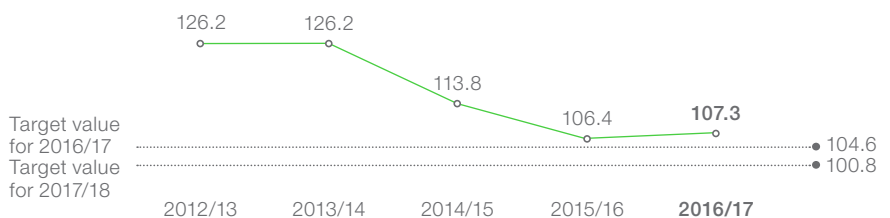
### Climate-change Roadmap

Reduction in CO<sub>2</sub>e



### Production-related Energy Consumption

specific value in MWh/€ million in revenues



consumption value indicates. Waste is another area in which further potentials can almost only be leveraged through long-term strategic measures.

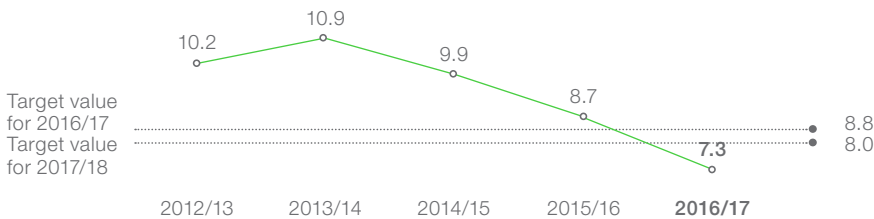
For us to seamlessly further optimize processes even after the end of the current target period, in the reporting year we already started working on further specific targets for the next target period. The new targets have already been discussed in our Corporate Sustainability Council (CSC) and adopted by our recently established Environmental Steering Committee and our Corporate Board of Management. Within the framework of these activities, we continue to use data from the 2011/12 fiscal year as the benchmark.

The three main drivers of energy, waste, and water withdrawal will remain the focus of our attention going forward. By the end of the 2021/22 fiscal year we aim to reduce our energy consumption by 30%, our waste volumes by 35%, and our water withdrawal by 40%.

We have also set ourselves specific carbon-reduction targets to make an additional contribution to climate protection by taking the values from the 2016/17 fiscal year as the basis and orientating ourselves to a scientific approach in accordance with the Paris Climate Accord.

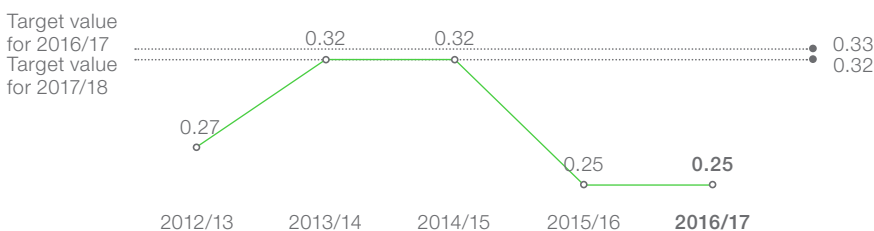
**Waste**

specific value in t/€ million in revenues



**Freshwater Consumption**

specific value in m³/€ thousand in revenues



In the first step, by the end of the 2021/22 fiscal year we aim to achieve a 25% reduction in our carbon emissions resulting from our power consumption by optimizing our grid mix. By the end of 2024/25 we then plan to reduce the Scope 1 & 2 carbon emissions of our value-adding activities by 35% until we have achieved a 90% reduction by the end of 2049/50. We will set additional interim targets and milestones for our carbon targets beyond 2024/25, taking into account our business development.

**Green Controlling Delivers Transparency**

We aim to create economic and environmental added value through our resource management activities. To achieve this we follow a four-stage Green Controlling process that provides us with transparency concerning our pipeline of measures, the degree of implementation of the measures represented within it, and their impact on the development of indicators, allowing us to actively control the target-achievement process. We have already received numerous awards for our approach to environmental management. Among them, in the reporting year we were nominated for the German Federal State of Baden-Württemberg's Environmental Award in the category of "Industrial companies with over 250 employees."

  
 Fact base  
 Green Controlling

**Further Hot-spot Analyses Performed**

We use hot-spot analyses to work on specific and cross-location focus topics such as the energy consumed during a process step. To achieve maximum effect we focus on the greatest consumption drivers in individual regions and locations.

In the reporting period we conducted three hot-spot analyses in North America and three in Europe. Once again, energy and waste were the focus topics of the analyses. In addition, we performed a cross-location benchmark analysis on coolant lubricant management.

The recent analyses also confirm the trend that we are increasingly moving away from facility infrastructure topics (lighting, compressed air, heating, ventilation, and air conditioning) towards process-specific topics (such as the use of steel grit for sandblasting, and the heat-setting process for felt production). In doing so we are gradually leveraging the greatest value potentials, although the expense involved in implementing the measures is rising.

  
 Fact base  
 Hot-spot Analysis Methodology  
 Fact base  
 EBM Experts

## 2.2 Performance in the Reporting Period

### 2.2.1 Energy Efficiency and Greenhouse Gas Emissions

#### Energy Consumption Rises Slightly

In the reporting year Voith consumed 453,012 MWh of energy (previous year: 452,294 MWh). 107 MWh of energy was needed per € million in revenues, an increase of 0.9% versus the previous year (106 MWh per € million in revenues). One of the main factors behind this slight increase is the start-up phase of the new facility in Shanghai, China. Energy is being consumed there for heating and cooling during this start-up phase, while the corresponding contribution to revenue will only take full effect in the future. To reduce consumption as quickly as possible, a task force is already on site and has already achieved initial process optimization results.

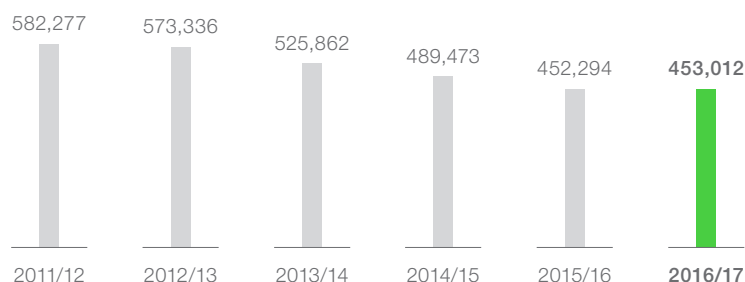
In the reporting period the identified potential for action in the pipeline rose from 107.0 GWh to 123.7 GWh (+15.6% versus the previous year). Measures with a volume of 9.8 GWh (previous year: 23.6 GWh; -59%) were implemented in the reporting period; as a result, the total amount of measures implemented corresponds to 83.4 GWh. Taking the figures of the 2011/12 fiscal year as our benchmark we have already achieved a 14.8% improvement, with the goal of 20% at the end of the 2017/18 fiscal year still firmly in our sights.

In the coming months we expect to achieve further significant energy savings as a result of a range of contracting projects in Heidenheim. In addition to this, the aforementioned start-up optimization in Shanghai will significantly reduce the plant's energy consumption.

In the reporting period we also identified additional heating energy consumption drivers, also through the aforementioned hot-spot analyses. In future we also intend to include heating degree days into our analysis, where our heating energy requirements are adjusted to take into account the effect of the outdoor temperature on energy consumption. This will provide us with even more accurate results. By

#### Production-related Energy Consumption

in MWh





Fact base  
Energy Consumption  
Fact base  
Certifications  
Fact base  
Energy Saving Measures  
and Further Potentials

way of example, in the 2016/17 fiscal year there were 5% more heating degree days worldwide than in the previous year; in Germany, this figure was even higher at 10% above the previous year's value. This gave rise to a significant increase in the demand for district heating.

To identify additional potentials, our EBM experts meet on a regular basis to compare processes, set benchmarks, and implement the best solutions at Voith through sharing best practice.

**Energy Mix Improves Slightly**

18.2% of the energy we consumed came from renewables, and 81.8% from non-renewable resources. This calculation included all energy sources associated with our production-related energy consumption.

Besides heating and cooling, which account for around 31% of our energy consumption, the production of paper-machine clothing remains the key driver of our production-related energy use, accounting for 26% of our global consumption. Apart from weaving processes, heat-setting is especially energy-intensive – particularly in felt production. The operation of machine tools consumes 6% of the energy used at Voith, and 4% of production-related energy consumption accounted for by our foundry in São Paulo, Brazil.

**Main Sources of Energy Consumption in Percent in 2016/17**

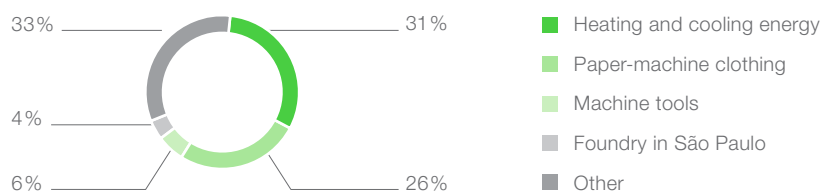
In the reporting period there was no real change to the proportion of direct (30%) and indirect (70%) energy consumption. With a share of 83%, natural gas remains the key energy source for our direct production-related energy consumption, followed by LPG (liquefied petroleum gas), diesel, and heating oil with percentage shares in single digits. Among other purposes, we use these energy sources as heating fuel and for heat-intensive thermal processes. Diesel is used primarily to operate emergency generators and generate steam at our locations in Karawang, Indonesien and in Shanghai, and for thermal processes in São Paulo, Brazil.



Fact base  
Renewables  
Fact base  
Production-based  
Energy Consumption  
Fact base  
Direct and Indirect  
Energy Ratio

**Main Sources of Energy Consumption**

in %





**Improved Efficiency Lowers Power Consumption**

In the reporting period we consumed 242,735 MWh of electricity (previous year: 249,206 MWh). This fall is thanks to improved facility and process efficiency.

In terms of our electricity mix, the share of energy sources supplied by external providers was 66.4% (previous year: 73.3%) from non-renewable and 33.6% (previous year: 26.7%) from renewable resources. With our newly formulated carbon target we intend to create an additional incentive to further increase the share of renewable forms of energy.

We first gathered information on our electricity mix at facility level in the 2016/17 fiscal year and in doing so updated the figures (see also the following explanations on greenhouse gas emissions). These showed that among the renewable forms of energy, the share of wind power is increasing; among non-renewable resources, there was a decline in nuclear power in favor of electricity generated from coal. At Group level, this is resulting in a slight increase in the emission factor and greenhouse gas emissions, despite an increase in renewables.

**Slight Increase in Greenhouse Gas Emissions**

We aim to minimize the impact our actions have on climate change. This is why we continue to focus our activities in the current fiscal year on improving our energy efficiency, as our energy consumption is the main driver of the greenhouse gas emissions (GHG) we generate. We take special account of this fact in our newly formulated environmental goals and, in particular, our dedicated carbon target.

We also consider the challenges of climate change when developing products. After all, our products' lifecycle analyses demonstrate clearly that their environmental footprint is far greater when they are in use than in the production stage. As a fundamental principle we aim to be the technology leader in all of our markets – where Voith products feature regularly in the highest efficiency class.



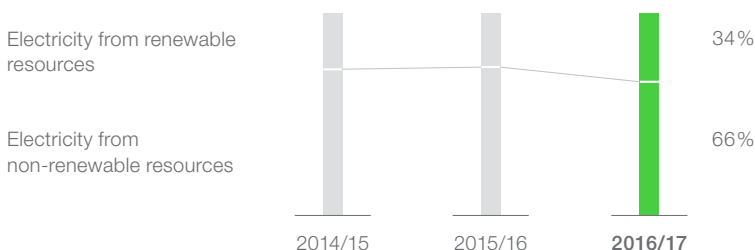
Fact base  
Energy Mix  
Fact base  
Environmental Impact  
of Buildings



Section 4 Product Responsibility  
p. 70–89

**Electricity Mix Consumption by Resource Type**

in %





- Fact base  
GHG Emissions Gathering  
Methodology
- Fact base  
GHG Emissions by  
Scope and Region
- Fact base  
Transport Emissions
- Fact base  
Emissions Trading
- Fact base  
Air Pollutants

In the 2016/17 fiscal year our facilities' GHG emissions increased by 3.7% to 158,876 t CO<sub>2</sub>e (previous year: 153,168 t CO<sub>2</sub>e). The share of direct GHG emissions fell by 7.1% to 26,442 t CO<sub>2</sub>e (previous year: 30,544 t CO<sub>2</sub>e) while indirect GHG emissions rose to 130,506 t CO<sub>2</sub>e (previous year: 122,614 t CO<sub>2</sub>e).

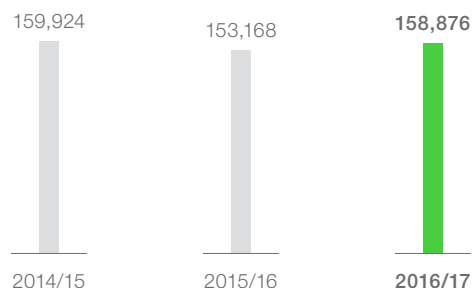
Since the 2011/12 fiscal year we have reduced our absolute energy consumption by 22.2%, with absolute GHG emissions also falling in the same period by 15.6%. Differences in the national electricity mixes are causing the figures to diverge, meaning energy savings at individual locations or even production relocations vary in their impact on GHG emissions.

In the reporting year we calculated both location-based and market-based emissions for the first time. The GHG factors for electricity reported by our locations are, on average, slightly higher than the market-based factors (IEA [International Energy Agency] 2016). The biggest difference is in China, where our locations are reporting significantly worse emission factors than the IEA factors owing to the high proportion of hard coal. The difference in the reporting year is 13,457 t CO<sub>2</sub>e. By contrast, the electricity factor at our main facility in Heidenheim is much better than the German average thanks to the high proportion of natural gas and renewable energies, with a difference of 9,318 t CO<sub>2</sub>e.

One of the main factors behind this increase in our GHG emissions in the reporting period is the expansion of our production capacities in China and the associated start-up phase. As mentioned, the less favorable grid mix there acts as an additional burden as there is little scope to change the power source. In addition, production cutbacks in the Americas and Austria had a year-on-year impact, where GHG emission factors are either very low or are developing at an exceptionally good level when compared across the Group.

### Production-related Greenhouse Gas (GHG) Emissions

total GHG emissions in t CO<sub>2</sub>e



**2.2.2 Material Efficiency and Waste**

We work tirelessly to make our processes resource-friendly, which is why we control the use of direct materials and raw materials throughout the Group. However, the breadth of our product portfolio and the correspondingly diverse process landscape present us with special challenges. We are also faced with a range of requirements in the project business at Voith Hydro and Voith Paper as well as in mass production at Voith Turbo.

Known methods to increase material efficiency have so far focused heavily on mass production and efficiencies of scale; however, in practical terms there is currently a genuine lack of useful methodical approaches to increase material efficiency in the project business. We have therefore invested a great deal of time in recent years in developing a standard methodology for project business and mass production.

**Focus Remains on Material Efficiency**

In the reporting period we purchased around 220,000 t of materials from suppliers, an increase of around 18% versus the previous year (186,000 t). The distribution in terms of the materials we purchased is as follows: 65% semifinished products (previous year: 59%), 26% raw materials (previous year: 30%), 7% packaging (previous year: 9%), and 2% auxiliaries (previous year: 2%). As we used less wood for packaging, the share of renewable materials fell year-on-year to 6% (previous year: 9%).

In the reporting period around 38% (previous year: 41%) of the materials we used had been recycled. The proportion was 55% (previous year: 55%) for auxiliaries, 46% (previous year: 45%) for raw materials, 30% (previous year: 33%) for semifinished products, and 78% (previous year: 80%) for packaging.

We are always working to further optimize material efficiency by utilizing proven approaches, such as hot-spot and Ishikawa analyses. We do so by closely following one of the focus areas of our Voith Excellence Initiative – Voith 150+ Next Level – whose objectives include identifying potentials for improvement in product development and engineering.



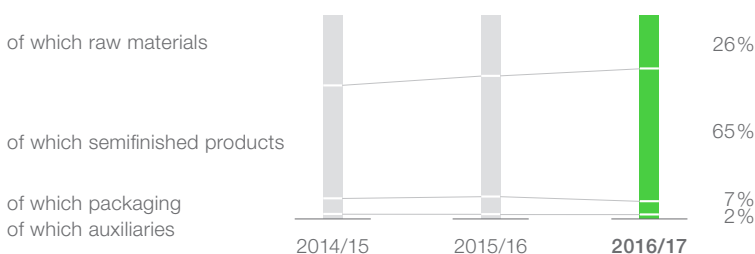
Fact base  
Materials Used



4.2 Responsibility in  
the Supply Chain,  
p. 89

**Material Consumption by Use**

in %



**Significantly Lower Waste Volume in the Reporting Period**

In the reporting period Voith generated 30,786 t of waste (previous year: 36,989 t), which is 6,203 t or 16.8%, less than the year before. The main reason for this fall is a drop in demand for casting sand and other materials at the foundry in São Paulo, Brazil. And as we purchased a greater amount of semifinished products, this also reduced waste in production.

Correspondingly, the ratio of waste volume to revenue improved by 16.3% to 7.3 t per € million in revenues (previous year: 8.7 t). With an overall reduction of 29.3% since the base year we have already exceeded our target of 25% in the current fiscal year.

In the reporting year the gains from measures implemented rose from 3,782 t to 4,423 t (+16.9%). The identified potential for action in the pipeline increased by 1.2% to 6,044 t in the period under review. While more significant saving measures are now almost only achievable as part of complicated product re-qualification measures, the effort that is typically involved in the changeover is a prohibitive hurdle. The measures covered relate mainly to material efficiency; the effects of make-or-buy decisions or revenue shifting to less waste-intensive processes are generally not reflected.

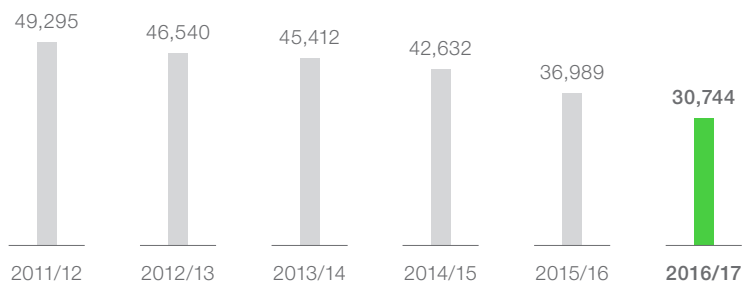
To further reduce the amount of waste we generate, we conducted expert workshops on waste. These achieved a range of useful results, including a benchmark analysis of coolant lubricant management at Voith Paper locations. In addition, individual measures were initiated such as to increase the reusable proportion of pallets and to extend the service life of hydraulic oils.

Wood, paper, and cardboard waste account for a large proportion of the waste we generate in all regions. This is due mainly to packaging and making one-off production components safe and secure for transportation. Owing to the high proportion of one-off and custom-made products at Voith, it is often not economically viable to use separate types of material-optimized packaging; nevertheless, in some cases we achieved an increase in the share of recycled packaging.



Fact base  
Waste Volume  
Fact base  
Waste Saving Measures  
and Further Potentials

**Waste**  
in t



### Reduction in Hazardous and Non-hazardous Waste

In the 2016/17 fiscal year we generated 5,121 t less non-hazardous waste and 1,082 t less hazardous waste than in the previous year. Our waste classifications remained virtually unchanged versus the previous year, with around 81 % of our waste deemed non-hazardous and the remaining 19% classified as hazardous.

The slight drop in hazardous waste is due to the cutback in (foundry) production at our facility in São Paulo, Brazil, which continues to generate just under a third (32.4%) of our hazardous waste.

The collection of hazardous waste at Voith is regulated by internal guidelines, with disposal performed by specialist external disposal and recycling companies – Voith does not transport any waste itself. We are pleased to announce that in the reporting period no violations of the law were reported to us relating to the disposal of waste by our external service providers.

Individual locations are constantly developing specific solutions to meet local waste challenges. Among them, in some countries pallet pooling solutions are unattractive owing to low order volumes, so reusable or repairable pallets are returned wherever possible to local processors to enable their reconversion to high-grade materials. At other Voith locations, cardboard boxes are processed into packaging materials onsite for the safe and secure transportation of their own products to customers.



Fact base  
Hazardous Waste  
Fact base  
Waste Disposal

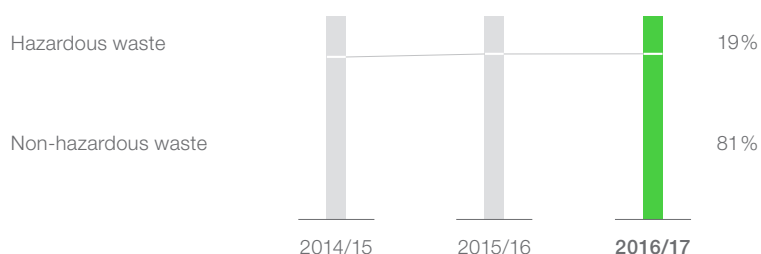
### 2.2.3 Water

#### Freshwater Withdrawal Falls Again – Target Achieved

In the reporting period our freshwater withdrawal fell by 5,945 m<sup>3</sup> or 0.6% to 1,040,967 m<sup>3</sup>. Of this, we use around a third (35.2%; previous year: 41.9%) for cooling purposes only, which do not contaminate it. As a ratio to revenue, our freshwater withdrawal fell year-on-year by 0.2% to 0.25 m<sup>3</sup> per € thousand in revenues.

#### Waste by Hazard Classification

in %





- Fact base  
Water Withdrawal
- Fact base  
Freshwater Savings Measures  
and Further Potentials
- Fact base  
Water and Neighboring Habitat  
Protection
- Fact base  
Environmental Incidents
- Fact base  
Sealing of Soil Surfaces

With a total reduction of over 30% since the 2011/2012 base year we have already clearly exceeded our goal for 2017/18 even before the end of the five-year timeframe we set ourselves. Nevertheless, we again increased the volume of identified measures in the pipeline by 9.9% to represent a saving of 816,573 m<sup>3</sup> of freshwater in the reporting period. In the same period, the gains from measures already implemented from the pipeline rose by 12% to 789,000 m<sup>3</sup> of freshwater.

In the 2017/18 fiscal year we aim to further increase the high level achieved. However, following many years of continuous improvement, our efforts to reduce water withdrawal are increasingly declining in marginal utility.

By the end of the current fiscal year we also intend to update our 2011 studies on water scarcity and biodiversity. We will then incorporate the findings into our action planning for our newly defined environmental goals.

We are paying particular attention to the development of water withdrawal at facilities located in regions faced with water shortages. This concerns our water conservation measures particularly at our facility in São Paulo, as Brazil has been increasingly afflicted by droughts and water shortages in recent years.

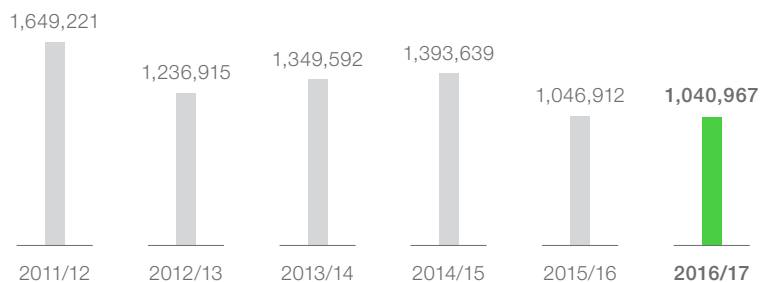
**Significant Drop in Wastewater**

At 914,569 m<sup>3</sup> the volume of wastewater we generated in the reporting period was 7.2% lower than in the previous reporting period (985,880 m<sup>3</sup>). Around 41% (previous year: 51%) was discharged into rivers, lakes or the soil, while 59% (previous year: 49%) was discharged into the sewage system.

The significant drop in our wastewater volume was due to a variety of factors, including the closing of the water cycle at our Garching facility, which alone led to a reduction of 50,000 m<sup>3</sup> of wastewater.

**Freshwater Consumption**

in m<sup>3</sup>



Wherever it is worthwhile in terms of economic, environmental, and social aspects, we use recycled water in our processes, such as in cooling processes (São Paulo) and in closed cooling water circuits (Garching; Summerville). We also operate our own wastewater treatment plants at our locations in São Paulo, Brazil, Garching, and West Monroe, USA.

Compared to other industrial companies our manufacturing processes only have a minor impact on water. Therefore, we are rarely required to measure water quality. For instance, at our Chinese locations only one sample per year is analyzed, whereas at our other locations continuous or repeated monitoring measurements are required. However, the overall burden of BOD, COD, TSS, heavy metals, nitrogen, and phosphorus cannot be derived owing to the low sampling requirements. We are pleased to announce that there were no reports of limits being violated in the reporting period.

**Outlook**

Shortly before the end of the current target period, we expect that we will reach our goals by the end of the 2017/18 fiscal year. In fact we have already exceeded our target for freshwater withdrawal. Our waste reduction measures have proved particularly successful: Instead of the 11,900-tonne reduction planned originally, we have already saved 14,300 tonnes since the base year. In the area of energy we have saved 78.8 GWh of power since the base year, so our target of 112.5 GWh is firmly in our sights.

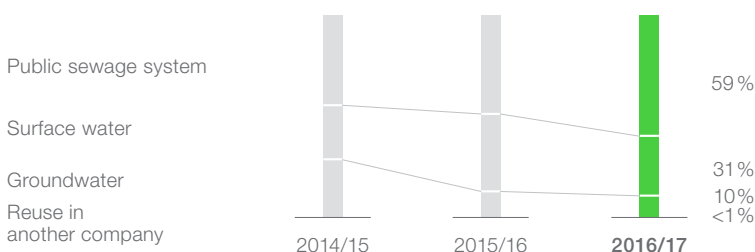
We fully intend to continue creating both environmental and economic added value through our activities. With our newly defined targets, which also incorporate national and international sustainable development goals, we will continue on our successful path – for the equal benefit of our company and the environment.



Fact base  
Wastewater by Discharge Type  
Fact base  
Wastewater Quality

**Wastewater by Discharge Type**

in %







## 3\_Employees

Voith is a family company and we see ourselves as responsible towards our employees – as a fair and dependable employer that also takes into consideration their personal circumstances. We set high standards for our employees while also offering them extensive opportunities for their personal development, enabling us to open up a variety of career paths to them within our global technology group.

## 3\_Employees

### 3.1 Our Aspiration – Our Responsibility

Voith's success depends fully on the success of our employees. Qualified, motivated, and committed employees are our guarantee of future success, so we do everything to offer them challenging tasks, personal development opportunities, and an attractive working environment. We aim to retain good employees for the long term and be a dependable employer. In doing so, we are continuing our 150-year tradition and laying the basis for the successful long-term development of our company.

#### Voith as an Employer

The Voith Group's workforce stood at 19,267 employees at the end of the 2016/17 fiscal year (previous year: 19,494 employees). This is equivalent to 19,045 (previous year: 19,098) full-time equivalent (FTE) jobs excluding apprentices. Around 55% of our employees work in Europe, 25% in the Americas, and 21% in the APAC region.

#### Workforce Changes

In the Group Division Voith Hydro, 243 jobs were lost in the reporting year due to adjustments to reflect the market situation. 14.4% of those affected found a new role in other divisions. We also utilized every available option, such as a general hiring freeze, the targeted use of working-hours accounts, and early retirement offers, to prevent people falling into hardship.

The ongoing expansion of our Group Division Digital Solutions led to an increase to 1,182 FTE positions (previous year: 661 FTEs) in the reporting year, with numerous employees finding a new role in the Group Division. Aside from a few new hirings, the majority of new jobs were filled by Voith employees from other divisions.



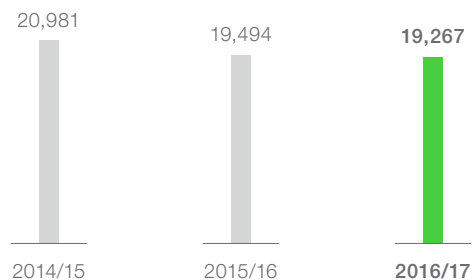
Fact base  
Workforce Structure



Fact base  
Workforce by Employment Type

#### Number of Employees

in individual people



**Challenges and Focus Topics**

Voith has been in a process of transformation for several years now, which is setting the course for our continued success in the future. This has also resulted in new challenges for our HR area. It is essential that we counter the constantly changing labor-market conditions around the world. Indeed, our employees and their skill profiles are facing new challenges particularly as a result of increasing digitization in business and society. This is why our HR area set itself the task of assisting employees in this process.

For this purpose, within our HR Strategy we defined the following focus fields for our actions:

- Talent Management
- Workforce Planning
- Performance Management
- Change Management
- HR Excellence

With the launch of our Voith 150+ Next Level program, in the reporting year we expanded the existing focus areas to include the aspect of HR Excellence.

We linked specific packages of measures to all focus fields. Through numerous strategic projects we are also setting strategic priorities to achieve the objectives



Annual Report 2016/17, pp. 52–56, Strategy

**HR Strategy**



defined in our Corporate Strategy. At the same time, we are addressing the majority of the fields of action that we have derived from our stakeholder survey (see graphic).

### **Company Values**

Voith's identity as a company is based on a clear set of values that are firmly embedded in our corporate culture, and which are embraced by all divisions and across all levels of our company. They are the benchmark by which we assess our employees' performance each year. In addition, our values play a central role in our training programs, such as our Start-up Leadership program for prospective executives.

Our value framework is summarized as follows: We are respectful and reliable, open, and ambitious. These values have been an integral part of the Voith vision and mission for over 100 years, and are transmitted in a variety of ways including through our training programs at the Voith Academy.

Our Code of Conduct sets out binding rules for cooperation within our company as well as with our customers, suppliers, and business partners. It also contains fundamental guidelines for our leadership and trust-based culture as well as for promoting tolerance and equal opportunity.

### **Shared Services in HR Management a Success**

In line with our Shared Services system, HR activities at Voith are organized into four regionally distributed Global Business Service Centers. For each region, seven service lines handle tasks such as payroll, time management, and HR administration using a service approach that is uniform across the Group. In doing so, we are working systematically to standardize, automate, and modernize HR processes across Voith. In connection with this, in the reporting year we added further self-service options for our employees. These include changing details such as address or bank account information as well as the approval of leave and correction of time records. We aim to further expand on these options and roll them out gradually across all regions globally.

Centralizing and bundling activities has enabled us to achieve significant savings already, while also improving process quality in many areas. As implementation progresses we will continue to move forward in optimizing processes and systems, and adjusting or shifting the released capacities according to activities. The next step of our transformation process involves harmonizing and standardizing those processes and policies wherever appropriate which have been adopted but so far not adjusted (shift-and-lift approach).

## 3.2 Attractive Employer

Voith enjoys an excellent reputation as an employer brand, as we combine the stability of a 150-year-old family company with the opportunities of a truly global player. This is also repeatedly confirmed by external institutes, on ratings portals, and in employer rankings – in this regard the reporting year was no exception either, with us featuring highly in Deutschland Test, trendence, and Universum employer rankings.

Our still fledgling Group Division Voith Digital Solutions gives us an excellent basis with which to attract and retain the right employees – particularly in the areas of IT, electronics as well as automation and electrical engineering – to additionally tackle the major challenges posed by digitization.

### Performance-based Market-competitive Remuneration

When it comes to employee remuneration, we are guided by respective market standards around the world. Remuneration is calculated in a way that is gender-neutral and is based exclusively on professional qualifications and performance. Remuneration schemes and other benefits are in line with the prevalent market situation in each region. At our German locations we typically follow collective bargaining laws when deciding wages and salaries, although we are also bound by statutory regulations in all regions. In addition to these aspects we have also started to roll out a uniform job evaluation system. While we were unable to complete this process in the reporting period, we will roll it out globally in 2018. The analyses already available, particularly for the core countries of Germany, the USA, China, and Brazil, confirm our view that our remuneration meets respective market standards.

### Diversity and Equal Opportunity

Our company's international nature is also reflected in the composition of our workforce, with employees from over 88 nations working at Voith. We see their contribution through their often very different backgrounds and experiences as a strength and something that enriches our corporate culture. This diversity is something that also permeates every level of Voith, with eleven nations represented in the Voith Senior Management Circle alone.

At Voith, the principles of equality and respect among individuals for their fellow colleagues and business partners are just as steadfast as the condemnation of any form of discrimination based on gender, culture, age, belief, or any other personal preference. The Voith Code of Conduct makes these principles transparent and binding for all. Implementation and compliance at Group level is monitored by the Compliance Committee. We follow up on any violation of the ban on discrimination and take appropriate steps to sanction those responsible. We guarantee the highest degree of confidentiality by not externally communicating the number and type of violations at Voith as a general principle.



Fact base  
Rankings and Ratings



Fact base  
Expenditures for Employees

Fact base  
Details on Upholding  
Employee Rights



Fact base  
Collective Bargaining  
Agreements



Fact base  
Employment Ratio of  
People with Disabilities

Our Diversity&Inclusion (D&I) program, which we introduced across our Group back in 2012/13, additionally supports our aspiration to promote diversity and equal opportunity in our Group.

We understand diversity as being the differences between our employees in terms of the five aspects of gender, age, nationality or ethnic origin, education and professional experience, as well as personal differences such as beliefs or physical abilities.

We understand inclusion as being a culture in which everyone is respectful towards one another, and that allows for different perspectives and approaches. We see respect as a prerequisite in enabling us to offer solutions – even to more complex requirements – to our customers around the world through our employees’ rich and varied experience.

Equal Opportunity Officers, typically the local Head of HR, at our various locations review detailed information on violations of our general equal treatment principles and take appropriate action.

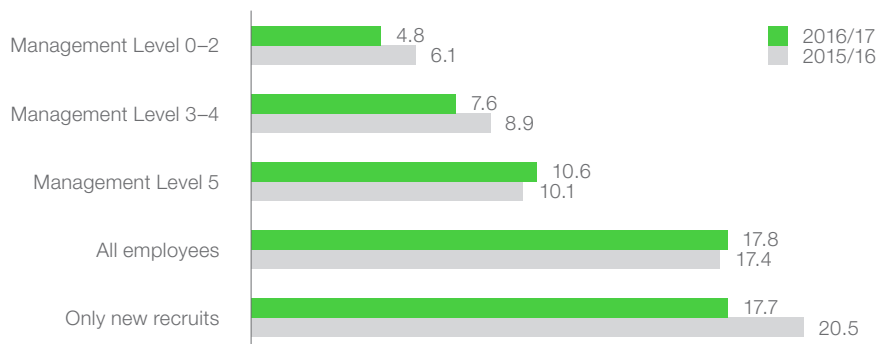
Our D&I program requires all locations to take a systematic approach to raising employee awareness, ranging from taking appropriate measures to establishing an inclusive working environment at each location. The regions are responsible for each focus area and implementation of the measures, while the central HR area coordinates the program. This ensures that we take a uniform approach across the Group, share best practice approaches, and also take into account the highly varied challenges we face worldwide.

For some years now we have held D&I awareness workshops for the upper four management levels to raise our employees’ awareness at many locations outside Europe. We continued holding awareness workshops in the reporting year, and offered D&I refresher workshops in South America and China. In addition, we



Fact base  
Diversity in the Management  
Team and in the Workforce

**Percentage of Women by Management Level**  
in %



Our Aspiration – Our Responsibility

Attractive Employer

Attracting and Promoting Talent

Occupational Health and Safety

expanded the offering to include events specifically for managers and HR employees in EMEA, and began rolling out the program in further regions. As an important first step, we have raised the awareness of executives in all regions and laid an important foundation stone for the topic of D&I, which we want to build on.

We also held workshops with the corporate HR areas of Compensation and HR Development. As a result, it was decided to make a D&I workshop a mandatory module of our Start-up Leadership program for new employees. In the updated D&I SharePoint, since summer 2017, we have provided managers with a toolkit with ideas and descriptions on D&I measures for team activities.

The aspect of gender is currently attracting a great deal of attention owing to public debate and a variety of new laws. As women are traditionally still underrepresented in technical training occupations and courses, we too are focusing on this area and striving to further increase the proportion of female employees in our overall workforce. As at September 30, 2017 the proportion of women in the workforce stood at 17.8% (previous year: 17.4%). In the Voith Senior Management Circle, the proportion of women currently stands at 5.2% (previous year: 6.6%). We are well aware of the need to take further action in this respect. Increasing the proportion of female managers in the company is of particular importance to us. This is why we have initiated a range of measures which – alongside our D&I program activities – will in future serve to attract more women to management positions. Among them, the shortlist for any advertised position must always include candidates of each gender. In Germany a women's network was established, and in South Africa we held our first "Female Talent Meeting" with the aim of identifying and specifically promoting high-potential candidates. Just how successful these measures can be is demonstrated by the fact that in China we were able to substantially increase the proportion of women among newly hired university graduates, with the figure already reaching 30% in the past year alone.

To get girls and young women more interested in technical professions, we have been involved for many years now in running the "Girls' Day" where girls get to learn about the range of opportunities open to them in technical professions and receive information about professional career options at Voith.

### **Bringing Balance to Work and Family Life**

We have always seen ourselves as a very family-friendly company ever since Voith was founded 150 years ago. In the reporting year we further expanded upon this understanding of how we see ourselves. Based on this we formulated guidelines to ensure we have a flexible and family-conscious work culture. These were adopted by our Corporate Board of Management and enacted. Various communication measures serve to increase openness towards the topic among our executives. To achieve this, in the reporting year we communicated a clear commitment on the part of the Corporate Board of Management to provide guidance for all executives and clarify the company's position.



Fact base  
Flexible Working Time Models  
Fact base  
Parental Leave

It is our stated aim to offer our employees an attractive working environment. This also includes flexible working models that meet ever-changing personal circumstances. In consultation with their supervisors, our employees can agree personal working time models, ranging from the use of a home office through to part-time work and job sharing. Through our semi-retirement models, occupational pension schemes, and a solidarity fund, we also take care of employees who are about to retire, have become incapacitated for work, or whose employment has been terminated for other reasons.

**Employee Satisfaction**

We always keep a close eye on our employees’ satisfaction, which is why we regularly analyze data on illness and employee turnover. The 2016/17 fiscal year was the first time we had conducted a global employee survey to gain even more detailed insights and find specific starting points to make potential improvements.

14,500 employees from across our company took part in the survey, answering 16 questions including: “How happy are you working at Voith on the whole?”. With each question ranked on a scale of 1 (unsatisfactory) to 5 (excellent), Voith employees rated their happiness at 3.83. Other findings show that Voith employees value the company as an employer, enjoy working at Voith, and feel a strong sense of camaraderie in their daily work. In addition, all Voith employees strive to produce quality results through their work, and they rate it as positive to be able to contribute their feedback and opinions. By contrast, many employees complained that the company is falling short in areas such as personal appreciation as well as professional and personal development. To counter this, the HR area has already drawn up plans to improve in these areas and increase employee satisfaction.

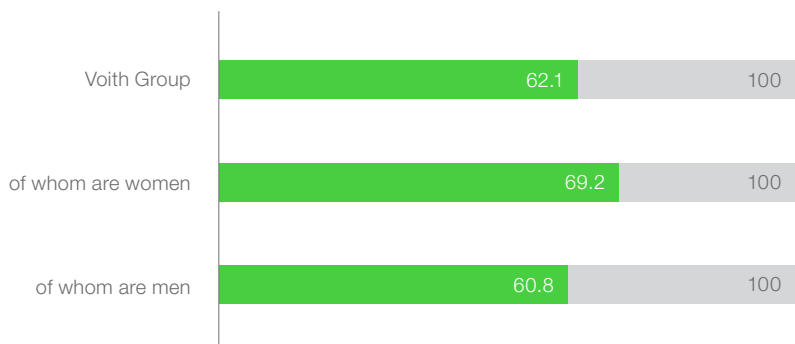


Fact base  
Employment Length  
Fact base  
Employment Turnover

The employee turnover rate fell in the reporting period to 11.0% (previous year: 13.2%). Over half of this rate (6.3%; previous year: 3.5%) is due to employees terminating the employment relationship. As part of exit interviews we ask them why they are leaving Voith, and record their feedback.

**Retention Rate Among Employees Who Took Parental Leave**

in %





## Outlook

Following the completion of our function grading process we will incorporate the findings into our HR processes, including those for remuneration. In doing so, we aim to increase transparency and uniformity, focusing on the respective position and performance. We are also reviewing our Performance Management field of action based on the findings. In addition we aim to further improve the work-life balance through even more flexible working time models and the expansion of existing options that factor in local circumstances.

## 3.3 Attracting and Promoting Talent

The competition for suitably qualified employees is getting tougher in many areas, and we continually face the challenge of attracting qualified employees at all of our locations. We present ourselves as a modern, forward-looking employer through our HR marketing campaigns. To make our efforts even more successful we are currently working on a new detailed plan for our HR marketing campaigns.



[www.voith.com/corp-en/careers.html](http://www.voith.com/corp-en/careers.html)

We have further improved the professionalization of our recruitment processes, including in the regions, by modifying and standardizing them. In Germany, North America, Brazil, and China this process is largely completed and we are currently working on optimizing the finer points. In addition, in the reporting year we strengthened the focus of our marketing activities on digital marketing. We did so to address interesting audiences while minimizing scatter loss, and to target qualified personnel for our recently established Group Division Digital Solutions. And last but not least, in the 2016/17 fiscal year we expanded our company-wide Global Graduate program to include the functional area of IT.



Fact base  
New Hirings

### Consistently High Level of Training and Education

We place the highest demands on the training of young people – and have done so for over 100 years. We are currently delivering training in over 40 commercial, technical, and trade occupations – with interdisciplinary learning and the integrated provision of social and specialist expertise high on the agenda. The success of our activities is demonstrated by the fact that Voith apprentices repeatedly achieve excellent results in a German federal state and nationwide comparison. Furthermore, we typically take on our apprentices on completion of their vocational training, and offer them the opportunity to get their foot on the career ladder in our company.

In the reporting period we launched the Social Internship – a new element of our vocational training activities, where all apprentices in their second year of training spend one week working at a sheltered workshop for the disabled. As at the end of the 2016/17 fiscal year, Voith employed 959 apprentices and students (previous year: 1,012). 599 of our apprentices work in Germany, 360 of these in Heidenheim.



Fact base  
Apprenticeships and  
Opportunities

While we expect the number of apprentices to remain at a similarly high level in Germany, we forecast a shift towards dual-study programs.

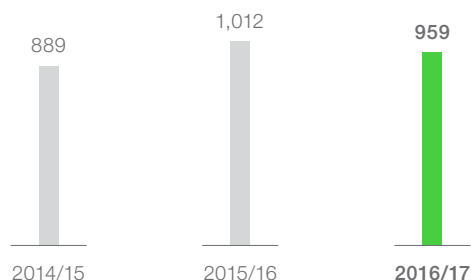
The great importance we attach in our company to training and education is also illustrated by our Voith Training Center in Heidenheim and Voith China Training Center in Kunshan. As further training and education centers for employees and executives, the multi-function buildings unite cutting-edge training programs with architecture, construction, building technology, and design within an innovative overall approach. At our international locations too, while training is delivered based on the German dual-study system it also incorporates cultural and country-specific considerations.

**Lifelong Learning – Both a Right and a Commitment**

In times of dynamic change as a result of technological progress, we expect our employees to be committed to lifelong learning. To remain competitive, we must ensure that we can always match the right employees with the right qualifications and corresponding expertise with the right position in our company. This is why we support our employees with a comprehensive range of training and education measures. Our leadership concept sets out the framework for this with its range of management tools. At the start of the calendar year, a performance review is held between every employee and their supervisor to discuss and set the person’s contribution to achieving our corporate goals. The additional employee appraisal focuses on work activities and the working environment, the relationship between the employee and supervisor, and the employee’s own personal development perspectives. The outcome of these meetings is entered in our pep. HR IT system together with findings of the Management Review process. This approach means we are always aware of our employees’ training requirements, and can tailor our offerings and initiate personal development measures. In the reporting period 83% (previous year: 87%) of Voith employees took part in an employee-supervisor discussion. In doing so we reached all employees who were not prevented by sickness, on parental leave, or who were exempted from the discussions as they had recently taken on a new function.

**Number of Apprentices (Including Dual-study Students)**

in individual people



Our wide range of training and development measures ensure that our employees continue to develop their professional, personal, and methodological skills. The range of topics covered by Voith training is intentionally broad, and includes occupational health and safety, environmental protection, technology, IT, quality, management and personality development, through to business and languages. A current example includes the launching in the 2016/17 fiscal year of OPEX training factories at our training and education centers in Heidenheim and Kunshan. Here, employees and management staff are provided with methodical training alongside instruction on new tools to enable them to pursue our corporate goals even more effectively.

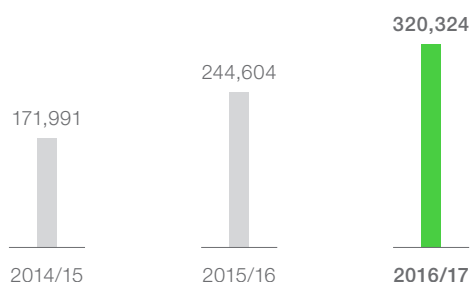
The Voith Management School is of great significance within the overall strategy of our training and education measures. Here, we provide special training to employees from specific departments such as Purchasing, as well as to project managers. Special development programs for executives establish a uniform understanding of management within the company across Group Divisions and regions, and are compulsory for all executives with supervisory roles.

Our new Business Forum Leadership format, which we established in 2015, is a further component of our leadership development programs. The forum was launched as a pilot project at Voith Paper and will now be rolled out at Voith Turbo and Voith Hydro. This two-day event focuses on topics arising from daily management practice as well as key aspects of the personal work-life balance for executives. This underscores our aspiration for our top management level to show commitment to lifelong learning, show readiness to face future developments and responsibilities, and to cope with the associated challenges.

In addition, in the reporting year we initiated a comprehensive project to strengthen our employees' digital skills. Various divisions also established programs to improve their employees' technical and methodological skills. A range of measures enables executives from different regions to share their views. Among them, executives from all regions meet annually at the Voith Academy to learn more about each other's

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### Hours of Further Education



The difference to previous years is due to a variety of factors, including extended data-gathering.



Fact base  
Training and Education  
& Career Development

different experiences, with executive training program attendees coming from all over the world to promote this exchange.

In the 2016/17 fiscal year 15,645 employees (previous year: 15,829) across all Voith locations took up our further training and education offerings, with 320,324 training hours (previous year: 244,604) completed. We aim to continuously improve our training offering, which is why we ask participants about their experiences after each training course, and provide the findings to the trainers and the HR area. In addition, the supervisor's assessment is obtained as an appropriate means to assess the success of a measure. This enables us to continuously improve our training programs, and see if their scope as well as the trainers are suitable.

We continually receive awards and quality seals that recognize us as an attractive and fair employer that offers its employees excellent training and development opportunities, and promotes a sound work-life balance. Among our recent awards, in the reporting year we received the Employer Excellence Award in China. We were also awarded the "Fair Company" seal by the initiative of the same name, which is committed to fostering a new ethic in the world of work. It was also the first time we had received a certificate from the DAPR (German Academy for Public Relations) for our training/volunteering program.

#### **Leadership at Voith – Focus on Development and Feedback**

The standards we set our executives are high. They are expected to lead their staff in a way that enables them to fulfill their responsibilities in meeting joint objectives. At the same time, they must give their staff the opportunity to allow their talents to unfold and develop further. Our annual Management Review enables us to analyze whether these requirements have been met. As part of this, we assess individual potentials to derive and agree on development measures. We also support employees through job rotation schemes or the offering of special orientation discussions if they are posted abroad, for example, or when finding their feet in a new management position.

To make the best possible use of the opportunities posed by digitization and to realize the development potentials for our company, in future our executives must be able to demonstrate new and advanced skills. This is the only way in which we will be able to develop an increasing number of solutions for the digital world. Connected thinking, agility, self-management, and the team spirit required for this will become ever more important in the course of digitization. Our executives must be able to create the right environment and appropriate frameworks. At the same time, working at Voith will be increasingly shaped by greater team self-management.

As such, we intend to encourage action on self-initiative and strengthen engagement. Through the restructuring and focusing of our values we created a key foundation for this and have adapted the scope of our executive development programs accordingly. For this purpose, we developed “Expected Behaviors” that are intended to guide executives and employees on which actions and behaviors are appropriate and rightful. We also offer professional development measures on design thinking and agile working methods to further promote self-management.

### Outlook

In coming years the digital transformation will increasingly take center stage, which is why we will offer an increasing number of training courses to enable our employees to easily find their footing in the digital world. Furthermore, digitization has impacts across the field of vocational training – a challenge we are meeting at various levels. Our restructuring of industrial metalworking and electrical professions in Germany is being accompanied by extensive expert work at a political level, extending right through to the legislative procedure. The trend towards digitization is also reflected in vocational training: The Voith Training Center in Heidenheim is already working on additive manufacturing processes, testing welding in an augmented reality environment, and using integrative training software. This is how we are already laying the basis today for our future success.

## 3.4 Occupational Health and Safety

By establishing our HSE (health, safety, environment) organization we have laid the basis for the best possible occupational safety and health protection at Voith. The precursor to this was to anchor the reduction of the frequency and severity of accidents in our corporate goals back in 2009. Since then, we have continually worked to ensure that accidents and work-related illnesses can be prevented to the greatest extent possible through optimized workplaces and processes. In the reporting year we achieved another record: With 1.4 occupational accidents per 1,000,000 working hours, we edged closer to reaching our objective of zero accidents. This places us among the best-performing companies in terms of occupational safety across all industries for the third year in a row.

We take a systematic regional approach to health protection. An occupational health analysis conducted in Germany, China, Brazil, and the USA in 2016 showed that differing legal frameworks as well as cultural differences call for different approaches. As a result of this, we have already devised basic strategies for health protection in the four regions.

In the reporting year we continued to work on focus areas, including the further improvement of activities regarding workplace ergonomics and offering of training at many locations. We also progressively integrated our Group Division Digital Solutions into our occupational health and safety model and structure. In parallel, we migrated it to our Group-wide ISO 14001- and OHSAS 18001-certified HSE matrix certification system, enabling us to benefit from stable and transferable processes in our HSE organization.

#### **High-performance HSE Organization**

Our Shared Services organizational structure enables us to achieve synergies in HSE. It makes processes much more transparent, allows information to be accessed within one system, and enables lessons learned to be transferred to other areas. Furthermore, the HSE organization offers largely seamless support.

A Group Directive sets out the requirements and responsibilities for occupational health and safety, and lays down binding minimum requirements and standards for the Group. It also includes all standard operating procedures (SOPs) on HSE at Voith. All occupational health and safety policies are, just like our environmental protection regulations, available via our Group-wide hse+ IT system. In the reporting year we consolidated and streamlined our existing policies, amended them in line with changes to the ISO 14001 standard, and prepared them for the migration from the OHSAS 18001 to the future ISO 45001 standard.

We use several communication channels to keep the organization updated on changes and developments. Besides fortnightly conference calls, the Safety Steering Team meets annually in two regions, ensuring thorough internal and external discussion takes place. Following this, meetings are held at a regional level to communicate the points discussed. In turn, this information is then shared with the individual locations in the monthly occupational safety working groups. Centrally produced publications, such as the regular HSE and EBM newsletters, complement our information offering.

#### **Matrix Certification Process Established**

We also use hse+ to control the matrix certification of our locations to the ISO 14001 and OHSAS 18001 standards – a process we established in 2016. At the end of the reporting year the matrix covered 99 Group companies (Group Holding and Corporate Central Functions). In the reporting year we included locations in South Africa and the UK as well as Voith Turbo's Mühlheim facility in the matrix.

In the reporting period Voith was also actively involved in drafting the new DIN EN 45001 standard, contributing through committee work from its position as a global

company. We place particular emphasis on ensuring the regulations are balanced, practical, and feasible, and consider the future equal weighting attached to risks and opportunities as helping to ultimately increase prevention. Indeed, within our company we have been strengthening the involvement of executives and their role for many years now out of conviction.

### Joining Forces with Employee Representatives

Efficient collaboration between Voith as an employer and our employees is crucial for the success of the occupational health and safety measures that we have taken. We recognized the essential role played by involving employee representatives in key decisions, and it is something that we do systematically as part of a fundamental collaborative approach. Company agreements on occupational health and safety, as well as on preventing addiction, complement the regulations embedded in our HSE Group Directive. A monthly Safety Committee meeting brings together all employee and employer representatives at each production location to develop the annual occupational safety program and implement it in monthly actions. In addition, we attach great importance to the early involvement of Data Protection Officers in all issues relating to HSE reporting, controlling, and communication.



Fact base  
Employee Representation  
in Committees

#### 3.4.1 Occupational Safety

The fundamental objective of our occupational safety program is to include every employee. Executives with supervisory roles have a particular responsibility in this regard, and have a clear duty to ensure that information and targets are cascaded as prescribed, right from the Board of Management level, through the respective executives, down to employee level. Executives are also responsible for employee training and the active communication of key developments. Employees must be given documented instruction at least once a year, with centrally prescribed training documents supporting this process.

Besides annual instruction, brief summaries are provided regularly, sometimes daily, on HSE issues – with information sheets available for selected topics. In the reporting year we put considerable effort into using our HSE software in online instruction. We see great potential here, especially for visitors and service employees, although this additional medium is by no means a replacement for face-to-face contact with the supervisor.

Executive training was one of the key occupational safety topics in the reporting period. We also involved service providers through our “Coordination of Visitors and Contractors” Occupational Safety Directive. Furthermore, short high-impact presentations on a daily or weekly basis serve to raise production employees’

awareness. Beyond the annual instruction we provide, these five- to ten-minute presentations on current topics keep the aspect of occupational safety firmly in employees' minds as they carry out their daily work. In some cases, employees are involved directly in these presentations, for instance if they are involved in a private or voluntary capacity in the fire service, meaning they are highly credible when presenting fire safety topics.

Hand injuries were the most common type of injury at Voith Hydro in the reporting period. Besides the short, high-impact presentations and related literature, this is why one of the focal points of our awareness-raising activities was on providing a newsletter on the topic of hand and finger injuries. In the 2016/17 fiscal year we will focus our activities on crane operation, as the large number of near-miss accidents in the previous fiscal year shows the need for a major information drive in this area.

At Voith we document instruction sessions required by law. Besides verbal or written instruction, we are increasingly providing online instruction after pilot projects in recent years were greeted so positively. We are now gradually offering such online instruction using our global hse+ IT tool, with our initial focus areas being decentralized organizations such as site construction, service and sales employees, and administration. Encouraged by the positive results of another successful pilot project, we will now offer this form of instruction in the areas of service and construction. In close collaboration with environmental protection colleagues from the USA, in the reporting year we also further developed our environmental risk assessment and tested it in pilot applications.



Fact base  
Occupational Safety Training

We place particular emphasis on the training of our experts in the regional HSE organization. They have already been fully trained on the use of hse+, which we have been using since the 2015/16 fiscal year to display information on audit planning and audit results globally in a standardized and transparent way, as well as key information on hazardous materials, compliance, and risk assessments.

### **Special Responsibility in Field Service**

When on construction sites or service calls, Voith field service employees take responsibility for HSE in a variety of ways – whether as a supervisor without authority over other service providers, right through to taking full construction site responsibility that includes authority over subcontractors.

A cross-divisional working group, “HSE in Field Service”, is responsible for analyzing related challenges and has the long-term goal of standardizing existing regulations. The working group was launched by the Group Divisions Voith Hydro and Voith Paper in the 2015/16 fiscal year. Since then, it has developed into an active network that has been able to leverage initial synergies and address topics such as customer



enquiries and supplier evaluations in a joint and coordinated manner. Ultimately, these activities will result in the creation of a uniform cross-division standard.

### **Documenting, Analyzing, and Preventing Accidents**

We record all accidents centrally to ensure that the direct supervisor is reliably informed and that the notification can be published on the intranet. This also ensures that the Corporate Board of Management is informed within 24 hours in the event of serious incidents. Investigation teams comprising stakeholders, supervisors, and safety experts review and document the accidents. Especially serious accidents are examined separately once again at our Center of Competence HSE. A detailed description of accident definitions is given in our Group Manual, and they are presented in a way that makes them comparable internationally with other companies.

Our eVAP app, which we developed ourselves, involves employees actively in accident prevention. After its first full year of operation, employees have responded very positively to the use of the app, which they feel is very user-friendly. It lets them log unsafe situations quickly and easily on the spot, and then sends this information to a central database. Clear icons facilitate the entire process of using the app. The data is analyzed automatically and then published in target group-specific media together with corresponding instructions. This allows us to raise our employees' awareness of unsafe actions and situations before accidents occur. In addition, increased data quality across sectors and countries makes even more targeted prevention work possible. The DEKRA Award 2016 in the "Safety at work" category underscores the success of Voith's innovative accident-prevention measures. In the reporting year we were additionally nominated for the Deutscher Arbeitsschutzpreis (German Occupational Safety Award) for developing this app.

Using accident analyses, audits, and other measures we are always up to date in terms of HSE, and can take immediate action in the event of serious accidents or a cluster of accident types. Our global HSE Flash News notice (information on the accident/incident focus areas in occupational health and safety) is a crucial asset in promptly informing all affected employees.


In the reporting year we produced and sent specific information on the handling of work equipment such as cranes. We have also addressed other topics such as hand injuries, and tackled them through a poster campaign.

Voith standards are implemented globally by our regional HSE organization. Twice a year, experience is shared locally among experts to ensure know-how is transferred as quickly as possible between locations. The experts are also responsible for translating the guidelines and standards into their respective languages.

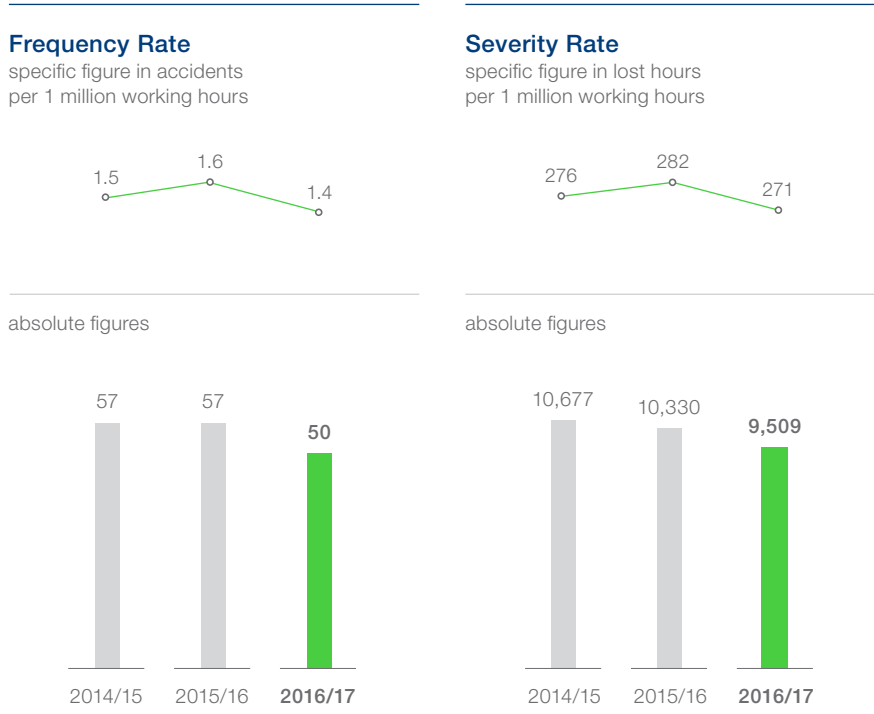
In 2016 the business partners at the Center of Competence HSE began to identify accident hot-spots and division-specific hazards by analyzing the distribution of accidents at each Group Division. One specific result of this is our hand-injury prevention program at Voith Hydro.

**Occupational Safety Benchmark**

Our global occupational safety program, which we rolled out back in 2009 across all production locations, is enabling us to steadily reduce the number and severity of accidents at our company. Thanks to this, Voith is now one of the world’s leading companies in the field of occupational safety. This is confirmed by the frequency rate (the number of accidents per 1 million working hours), which we calculate based on the international standard. It shows that we reduced the accident rate significantly from 12.6 in the 2008/9 fiscal year to 1.4 in the reporting year. This corresponds to 50 notifiable accidents (previous year: 57). In the reporting period we are pleased to announce that there were no fatalities as a result of occupational accidents. To put things in perspective, the average frequency rate of companies in the Professional Association of Plant and Mechanical Engineering is 22. We also achieved a significant improvement in the severity rate. With 271 working hours lost (previous year: 282) in the reporting year, alongside the absolute figure this shows that the severity of accidents has also decreased significantly.

 Fact base Occupational Accidents

We intend to maintain this high level of occupational safety going forward, with our hse+ IT platform playing a key role in this regard. It enables us to further improve



the transparency of our actions and derive measures in an even more targeted way. Moreover, through our eVAP occupational safety app, we can strengthen our employees' involvement in our activities.

### 3.4.2 Occupational Health

We focus particularly on prevention when it comes to our employees' health. As part of this, we pursue a regional approach to take into account the highly varied conditions at our locations all around the world. Regardless of where our employees work, we want them to stay fit for work and retire healthily at the end of their professional lives.

For the coming fiscal year we plan to run a pilot project on occupational health protection in at least one of our larger organizational units. In doing so, we will call upon the expertise of our works doctors and social workers as well as external experts where necessary. Our aim is to systematically record factors that negatively influence illness rates and then implement targeted improvement measures.

#### **Ergonomic and Safe Working Environment – Campaign in Brazil Yields Specific Improvements**

From 2013 to 2017 we ran an ergonomics campaign in Brazil and systematically evaluated the results. All workplace activities were evaluated through 1,170 individual assessments. In doing so, 985 ergonomic risks were identified, particularly in the foundry area. Following the completion of the systematic preventative evaluation in 2017, wherever losses occurred as a result of working conditions or an occupational accident they will be specifically reviewed by the respective works doctor. By the end of the reporting period, improvements implemented so far as part of the campaign have alone eliminated nearly half (46%) of these risks.

#### **Illness and Stress Support**

In the reporting period we achieved further improvements in occupational medical care at our German locations. As planned, we completed the roll-out of our standardized occupational-reintegration management system.

Thanks to our cooperation with an external service provider, our employees in Germany can obtain information and support relating to the care of family members and childcare. We are currently continuing to work on implementing robust illness and stress-support processes at our locations. Once this is done – as far as permissible under data-protection legislation – we will establish a central reporting system on this topic.



Online Driver Assistance

Voith System Know-how

Operating Data

# 4\_Products and Supply Chain

Voith is renowned for its safety, quality, and reliability. Sustainability is part of the ever-renewing commitment we make to our customers. This is why we attach great importance to the energy and resource efficiency of our products and ensure that we comply with all recognized environmental and social standards. We also place the highest requirements on our actions both within our sphere of influence and in all of our supply chains. In doing so, we live up to our responsibility towards the environment and society through each and every one of our products.

## 4\_Products and Supply Chain

### 4.1 Product Responsibility

#### 4.1.1 Management Approach

Voith products and industrial services serve five major markets around the world: Energy, Oil & Gas, Paper, Raw Materials, and Transport und Automotive. These markets impose wide-ranging requirements on our company, so we ensure our solutions are just as varied to meet them.

Voith Hydro is a manufacturer of generators, turbines, and pumps, as well as electrical and mechanical equipment for hydropower plants of all sizes. This broad offering means Voith supplies all key components for electricity generation and power storage. Voith Hydro's innovative service models also ensure a plant remains productive throughout its lifecycle. Integrated automation solutions ensure that hydropower plants with all their components and systems always remain fully operational with maximum availability.

Voith Paper supplies technologies, products, and services covering the entire paper production process. Its offering includes large industrial production lines for paper, tissue, and board production, system rebuilds and modernization measures, and corresponding services. This is complemented by consumables and replacement parts.

Voith Turbo technologies transmit and control energy under extreme conditions – safely and in a resource-efficient way. Voith Turbo's drive solutions, highly advanced technical components, and systems are used in a wide variety of industries wherever power needs to be converted into controlled movement.

Through Voith Digital Solutions we combine our long-standing automation and IT expertise with hydropower, paper machine, and drive technology know-how. Established the previous year, this Group Division develops innovative products and services together with existing and new customers to drive forward the Internet of Things and shape the digitization of mechanical and plant engineering.

#### **Our Responsibility – Our Fields of Action**

Owing to the diversity of our product portfolio and the very different market requirements we face, our Group Divisions are confronted with a range of challenges in terms of product responsibility. To gather data on these requirements systematically and evaluate them in terms of their materiality, we draw on the results of our stakeholder survey of early 2016. As part of a Master's thesis we also evaluated

external benchmarks, including those of the IÖW (Institute for Ecological Economy Research), and oekom research. In conjunction with our Group Divisions' evaluations and assessments, we defined the material fields of action for our company in relation to product responsibility:

- Quality and reliability of our products and services
- Guarantee of maximum product safety
- Long product service life
- Technological expertise and innovation
- Customer dialog and cooperation
- Product resource efficiency
- Minimizing products' environmental impacts.

### Challenges and Trends

To identify trends early on and take effective action to counter upcoming challenges, our Group Divisions employ their own market- and technology-specific methods and tools.

### Current Challenges

Hydropower competes globally with other forms of renewable energy. It is a challenge that Voith Hydro is meeting, and is continuously monitoring both legal changes and market trends. The Group Division also works tirelessly to improve the public image of hydropower as a renewable energy source such as by highlighting the economic and ecological advantages of pumped storage power plants compared to battery storage and other solutions. To do so, Voith Hydro employs various communication channels. It is active in political and scientific committees as well as in industry associations and is a member of the International Hydropower Association (IHA) and the European Association for Storage of Energy (EASE).

Voith Turbo is currently facing the dynamic electrification of its traditional markets. The Voith Turbo Division Mobility is addressing this challenge by developing hybrid transmissions and a fully electric drive. In the Voith Turbo Division Industry the new E-Vorecon hydrodynamic variable-speed planetary gear was launched in the reporting period: This gear is highly efficient and enables huge energy savings.

It is important that Voith Digital Solutions exploits the huge growth opportunities in the area of the Internet of Things (IoT) while at the same time meeting customers' exacting demands for safety and reliability. Cyber security in particular is one area in which it can differentiate itself significantly from the competition. In connection with this, in the reporting year Voith Digital Solutions began forming a dedicated IoT Security team which works closely with experts from Voith's subsidiary DITIS.

### Identifying Trends Early On and Exploiting Them

Voith Paper had already expanded its trend-gathering methodology comprehensively back in 2016. This is based on five pillars: Trend Analysis, Technology Outlook, Customer Perspective, Consumer Perspective, and Radical Technologies – technological changes that are radically altering the paper-production process and can affect the entire added value chain. Thanks to this methodology, Voith Paper identified the trend of water scarcity and the trend to increasingly harness alternative plant-based raw materials and utilize them in the papermaking process. This is enabling the Group Division to support its customers in using these new raw materials, and calibrating processes and machines accordingly. Voith Paper has been following the decarbonization trend since 2010 together with other CEPI (Confederation of European Paper Industries) members in development projects such as Provides.

At Voith Hydro and Voith Turbo, similar processes were rolled out in the 2016/17 fiscal year to address the sustainability of their own or customer-specific manufacturing processes either directly or indirectly through the identified trends. The required steps have already been introduced and the course set for successful implementation of the processes in the overall organization. This enables us to evaluate key megatrends at an early stage and use them for our customers' benefit. Our corporate structure also means that we are always agile in responding to new developments.

Through trend surveys, Voith Hydro identified the topic of water scarcity, among others, as relevant. Added to this are decarbonization in conjunction with a systematic pooling of various energy resources, and more general global climate change, urbanization, and electrification as well as increasing renewable energy generation and use. Another key trend is power-to-X (P2X), which refers to the use of technologies for energy storage and also for sector coupling. Voith Hydro continues to monitor the ongoing trend of 3D printing production. Once appropriate scales have been achieved it is expected that initial application areas in the spare parts business for small hydro and pilot machines will emerge.

For Voith Turbo, the trends of decarbonization and electromobility were identified as key. To tackle these, Voith Digital Solutions has already set up more extensive projects focusing on the digitization of the product portfolio in the areas of status monitoring, optimization, and modularization to enable resources to be used even more efficiently.



### Megatrend Digitization

Increasing digitization is a megatrend that spans all areas and activities.

For Voith Paper, the decline in graphic paper caused by digitization was significant; however, increased demand for packaging paper has been identified owing to strong growth in e-commerce. For Voith Hydro and Voith Turbo, digitization is important particularly in relation to condition monitoring in order to ensure that resources are used efficiently and that safety is maintained at all times.

Collaboration between Group Divisions, especially with Voith Digital Solutions, delivers numerous approaches for new products and services – some of which are already being implemented.

To give an example: Voith Paper and Voith Digital Solutions are working together to develop solutions that will enable the paper-production industry to respond to the volatile supply and price situation in the energy market by allowing production plants to be operated in a sustainable way through the use of new technological processes and algorithms. These range from allowing the use of cheaper energy periods, through to switching off individual process steps at periods when energy is scarce – without a significant impact on paper production.

Voith Paper and Voith Digital Solutions are also working together on developing predictive maintenance techniques as an additional service for customers. One example is the Talking Roll project, where, with the help of sensors, roller operating data is evaluated and the safe operating window in relation to predictive maintenance is then optimized using cloud-based data-analysis techniques.

Collaboration between Voith Hydro and Voith Digital Solutions unites extensive know-how in the hydro sector with software development and data analysis expertise. This allows the synergy effects from similar activities in all Group Divisions to be leveraged in the area of machine and plant monitoring. Through this, diagnostic methods can be specifically developed to provide customers with accurate availability guarantees along with a predictable level of risk. This offers real added value and opens up new business opportunities, particularly in the service and spare parts business.



Fact base  
R&D Expenditure

### Research & Development

Our success is based on our technological expertise and ability to continually apply our know-how to innovations that deliver added value to our customers. This is why we continue to invest, even in economically challenging times, in the research and development of new solutions. In the past five years alone we have invested around €1.1 billion in this area. In the 2016/17 fiscal year, our R&D expenditure totaled €224 million (previous year: €208 million; +8%). This increase is due to the new Group Division Voith Digital Solutions, where the merQbiz digital trading platform and Industry 4.0 solutions were developed. The Voith Group increased the share of its Group revenues dedicated to R&D to 5.3% (previous year: 4.9%). All of our Group Divisions involved in mechanical and plant engineering have a strong patent base. The Voith Group currently holds several thousand active patents, with many hundreds more added in the reporting year alone.



Fact base  
CTO Organization

Our Group Divisions perform the majority of our R&D activities. While our activities have an international focus, they are centered around Germany. Our centers in the Americas, Asia, and the rest of Europe provide valuable specialized R&D contributions in the relevant Group Divisions.

### Voith Technology Foresight Project Started

In 2017 the Foresight project was launched to enable us to respond to long-term trends in an even more structured way by utilizing a range of courses of action. All Group Divisions participate in the project via their Chief Technology Officers (CTOs). Unlike traditional trend research, which aims for shorter-term predictions of between two and three years, the Foresight project aims to provide long-term scenario analyses of possible changes in consumer behavior and corresponding impacts right up to 2040. We also cooperate with various Fraunhofer research institutes within the framework of the project – and plan to extend this to include further universities and partners. The project is expected to deliver its initial set of findings by the end of 2018. We will share these once the analyses are completed.

Last but not least, the Foresight project serves to identify new markets in industries that we have not previously addressed. For Voith Hydro these include the area of irrigation pumps, hybrid solutions, and symbiotic approaches. At Voith Turbo, the Foresight project helped in the development of scenarios in the area of mobility, environmental technologies, and water. Building on this, a range of design-thinking projects are planned for the 2017/18 fiscal year. Voith Turbo is also responsible for the two topics of mobility and environmental technology within the Foresight project. Voith Paper is currently still involved in preparatory work following the project's kick-off in December 2017.

### Current Developments in the Group Divisions

Voith Paper is still developing systems that use sensors to forecast the service life of products. This approach improves operational reliability, making sudden system failures virtually a thing of the past.

In the reporting period Voith Turbo continued to strengthen its collaboration with its partner Fuglesangs, with the aim of developing variable speed drives to operate multiphase pumps on the seabed. Numerous tests are planned for 2018 to obtain approval for underwater use. The project also serves as the basis for a potential expansion of the collaboration between Voith and Fuglesangs, with another joint converter development project starting shortly.

Voith Turbo sees good growth opportunities in coming years in the heavy goods vehicle (HGV) sector – the main market for Voith retarders. The Group Division is also gradually expanding its R&D activities in the field of electromobility, as a significant share of city buses will be battery-powered from 2025.

In the reporting period two focal points of Voith Hydro's R&D activities were:

- The use of sensors to communicate information on system operation, for instance, as a basic requirement for universal interconnection on the path to realizing an intelligent, digital power plant.
- The development of a new type of corona-protection technology for high-voltage bars to employ controlled voltage reduction to prevent partial discharges.

### Collaboration Projects with External Partners Deliver Important Insights

Voith's Group Divisions are market and technology leaders in many of their business segments. This is why they are also in constant dialog with research institutes, universities, associations, and other companies along the supply chain.

Among them, Voith Paper collaborates with a range of institutes and universities with clearly defined fields of action. The implementation phase of such initiatives is often relatively long, as the paper industry investment cycle may extend up to 20 years. To achieve the targeted 80% CO<sub>2</sub>e reduction between 2030 and 2050 as planned, Voith is already working actively on developing the technology to make it market-ready within the next decade. This is why the Group Division is actively involved in initiatives such as the industry-wide Fiber & Paper 2030 project and the EU-wide Provides project, which aims to achieve a drastic reduction in the CO<sub>2</sub>e footprint of cellulose and paper production.



Fact base  
Current Developments in the  
Group Divisions – Voith Paper



Fact base  
Current Developments in the  
Group Divisions – Voith Turbo



Fact base  
Current Developments in the  
Group Divisions – Voith Hydro



Annual Report, p. 84,  
Research and Development



Fact base  
Voith Paper Collaboration Projects



Fact base  
Voith Hydro Collaboration Projects

Also in the past, Voith Hydro continued its numerous activities with university research centers. In the reporting year the long-term collaboration with the University of Stuttgart achieved particular success: thanks to a highly precise, scale-resolving simulation of the transient flow of a complete Francis turbine, a highly advanced method for the detection of cavitation in hydropower machinery has been developed.



Fact base  
Voith Turbo Collaboration Projects

Voith Turbo is currently working on a research project that also involves DLR (the German Aerospace Center). In this project, composite-structure sensors are being developed for use in mobile applications such as for rail vehicles. Furthermore, Voith Turbo is involved in a research project funded by the German Federal Ministry for Economic Affairs and Energy which involves the development of train body parts that are not only lightweight but also contain sensors to detect damage at an early stage.

### Customer Dialog

Maintaining close customer relationships and a deep understanding of their needs has always been one of Voith's strengths. All divisions are in constant touch with their customers, and they are also included in Foresight-related activities and trend analyses. This contact also includes targeted surveys, for instance on customer satisfaction, or future requirements on our products' capabilities. At the same time, digitization is playing an increasingly important role in our Group Divisions' customer communication activities. In this regard, we aim to improve both our own and our customers' understanding of digitization in equal measure, and in doing so give customers the edge through increased connectedness and the intelligent combination of industry know-how with analysis and IT expertise.

Resource savings, be they in terms of fibers and other raw materials, water, wastewater, or energy, remain central topics for Voith Paper's customer dialog activities. An ever-increasing number of customers are also asking for detailed information such as on individual substances that have been used in the product manufacturing process. Environmentally friendly packaging, in which more paper is used than plastic, matters to more and more consumers, thereby influencing the requirements on paper production.



Fact base  
Customer Dialog

Customer dialog is an essential part of Voith Hydro's sales strategy, with customer feedback playing a key role in supplementing and enhancing this Group Division's product portfolio as well as in developing new processes. The global operating units hold customer satisfaction surveys on a regular basis. And as part of the Voith Sales Excellence program, in the reporting year the customer analysis process was reorganized and made even more comprehensive; initial findings are expected in the next fiscal year.

Voith Turbo identified close customer contact, a strong regional market presence, and world-class service as success factors for its customer focus. In this respect, the introduction of a product management team at the interface between sales and

key account management has proven itself. In the reporting year a project management team was also established to ensure continuous customer communication during the OTC (order to cash) project phase. In the reporting period, customer satisfaction surveys and customer training courses were used to gather customer experiences regarding the use of current products, and the development of new products was initiated together with them.

Central topics included electromobility and smart services, and in the reporting year a focus was placed on discussions with rail vehicle operators and manufacturers regarding market and technology developments as well as operational issues and the development of drive systems.



Fact base  
Responsible Marketing

#### 4.1.2 Reliable and Safe Products

Voith is renowned the world over for its safety, quality, and reliability. We are fully aware of the value of this important competitive advantage, so we have set out the principles of our quality and technical risk management processes in a Group Directive. Our Group Divisions and their companies then expand on these principles and supplement them accordingly.

We document and certify our activities according to the international ISO 9001, IATF 16949, and ISO/TS 22163 quality management standards, which we supplement with many of our own QM methods. Virtually all Voith locations are certified to these standards. With the help of clearly defined project scopes, a Group-wide Operational Excellence initiative places an even stronger focus on the quality of our products and processes. The aim in this regard is to continuously improve quality while reducing associated costs. To achieve this we focus on four core projects: quality cost transparency, problem-solving methods, continuous improvement processes, and quality in engineering. In the reporting year Voith Turbo already successfully reduced the number of customer complaints by 7%.

As part of the Voith 150+ Next Level program we are currently setting Group-wide KPIs to enable each Group Division to be benchmarked against each other as well as within their respective industrial sector.

Voith products always meet the statutory and regulatory requirements of the countries in which we supply. Our Group Divisions are responsible for implementation, while the relevant Quality Departments ensure process compliance. To achieve this, they rely on our Group-wide TRQM (Total Risk and Quality Management) system as well as division-specific regulations.



Fact base  
TRQM

We regularly train employees on how to handle regulations, and make these available to them via our Group-wide database and internal communication channels. In addition, we provide our customers with the relevant know-how through training courses held either at our training center or directly at the customer's location.



Fact base  
Quality Management in the  
Group Divisions

Fact base  
Voith HydroSchool

Right from the development stage we analyze and simulate the various operating states, perform computerized calculations, and conduct pilot tests on product performance and safety. We evaluate the effectiveness of our quality assurance measures in our respective Group Divisions using division-specific KPIs as well as internal and external audits. We also closely involve our suppliers in these activities.

A key quality of Voith machines and systems is their long service life, which is why Voith Turbo gear systems and Voith Hydro turbines are in reliable operation for decades. The same applies to our paper machines. Due to this, our Group Divisions are faced with the challenge of supplying spare parts even after many decades of operation, so the key requirement of ensuring that our products can be repaired is factored in right from the development stage. Furthermore, Voith engineers are constantly tasked with supplying spare parts for components – such as for transmission units produced by competitors who are no longer active in the market – to enable customers to continue operating a system.

#### **Product Impacts by Group Division**

By further developing our products, we work to make them more environmentally and resource-friendly throughout their lifecycle. In doing so, we meet our customers' demands, statutory requirements, and ultimately our own aspiration. The primary aim of all of our Group Divisions is therefore to conserve resources and to minimize the environmental impact of our products. To achieve this we follow a decentralized management approach.

We predominantly supply components that, as part of an overall system, have differing energy and material footprints. We employ a range of tools to gain an even more detailed picture of our products' energy and raw-material efficiency. Indeed, for many years now we have conducted Life Cycle Assessments (LCA) for selected products in compliance with ISO 14040 and 14044.

As our product portfolio is so broad and we are active in such a variety of markets, we constantly face the challenge of producing a balanced account of our activities in a uniform, standardized report that covers all Group Divisions. By way of example, in the following we have outlined the lifecycle of a main product of each Group Division that also shows its environmental and social impact.

As the Group Division Voith Digital Solutions is still being established, we plan to include it in our next report; however, this Group Division's services are already reflected in numerous collaboration projects with our other Group Divisions.

### Product Responsibility Outlook

We expect a further tightening of environmental protection legislation as well as a continual rise in customer demands regarding the environmental and resource efficiency of our products – something that affects all of our Group Divisions. The growing complexity of the challenges confronting many of our customers in their markets is increasingly leading them to opt to obtain solutions from a single supplier. In the coming years, we see Industry 4.0 opening up huge opportunities for all three Group Divisions involved in mechanical and plant engineering. In our new Group Division Digital Solutions we are bundling existing know-how in our Group, developing new digital business models, and will further strengthen our technological leadership in the years to come.

Solutions are increasingly being expected from a single source in Africa and Oceania, as well as in South America. Consequently, Voith's involvement in EPC (Engineering, Procurement, and Construction) and IPP (Independent Power Producer) projects is increasing, requiring Voith Hydro to provide technically optimized turnkey solutions.

Voith Hydro will expand its collaborations with major construction companies (EPC Contractor), and also explore new opportunities for cooperation.

In general Voith Turbo is also seeing a considerable increase in demand for energy-saving solutions in the power plant and raw materials segment, driven by various government incentives. There are also an increasing number of approaches to roll out systems and services that monitor and increase the efficiency of entire plants – an area in which Voith Turbo works closely together with Voith Digital Solutions.

In China, high-speed rail vehicles are increasing in importance. To meet this demand, Voith Turbo is developing reliable final-drive units and investing in the development of new smart couplings and entire front ends. These systems offer functionality, handling, and energy consumption benefits. In doing so we are meeting the need for the modularization and standardization of functions and interfaces.

**Voith Paper**

**Paper Facility**

Sustainability aspects



Voith component lifecycle

**Voith Paper Machine**

Contribution to greater sustainability



	<b>Upstream/Supply Chain (Procurement of Materials and Services)</b>	<b>Creation (Paper Facility Construction Phase)</b>
	Potential risks: · Social & environmental impacts in the supply chain	Potential risks: · Land use · Loss of biodiversity · Emissions (air, wastewater, noise, goods transportation) · Occupational accidents
	· Reduction in supply chain risks through GPTs, CoC, and LSA · ISO 14001 and OSHAS 18001 matrix certification for production locations	· Planning services for entire paper facility · Ensuring the occupational health and safety of our employees when at the customer's location

Paper machines are in operation for many decades, also thanks to maintenance interval optimization, with an average operating period of around 40 years. Over this long period even small improvements can vastly improve a machine's efficiency. However, while the environmental impacts caused during the manufacturing of the machine are minor, the amount of energy required to operate a paper facility exceeds that which is required to manufacture the machine by a factor of 300. Steel, as well as materials for structural and civil engineering, account for the largest share of material types in the supply chain.

Voith Paper's strategies are strongly aligned with growing markets, whereby it adapts its product strategies according to the different requirements on paper types and regional aspects. One area is tissue, where demand is linked directly to the development of the world population and to economic growth in emerging countries.

Digitization of the highly complex paper production processes will determine competitiveness in the future. First and foremost the decisive factor will be the efficiency of the machines used, followed by the optimization of the paper-product processes through corresponding measures.

Voith Paper aims to produce the greatest added value for customers through operation that is as resource-friendly as it can be, and by designing machines as efficiently as possible. To Voith Paper, resource conservation means above all reducing the specific consumption of water as well as electrical and thermal energy



<b>Utilization Phase (Paper Production)</b>	<b>End-of-Life (Decommissioning of the Paper Facility)</b>
Potential risks: <ul style="list-style-type: none"> <li>· Unsustainable virgin fibers and fiber loss</li> <li>· Increased resource requirements</li> <li>· Use of chemicals and process residuals</li> </ul> Potential opportunities: <ul style="list-style-type: none"> <li>· Use of fibers from waste paper</li> <li>· Closing of cycles</li> </ul>	Potential risks: <ul style="list-style-type: none"> <li>· Process residuals, hydraulic oil</li> </ul> Potential opportunities: <ul style="list-style-type: none"> <li>· Recyclable materials such as metal, structural/civil engineering materials, plastics, oil</li> </ul>
Efficient paper machine technology helps reduce: <ul style="list-style-type: none"> <li>· Energy, water, and fiber consumption</li> <li>· Emissions</li> <li>· Use of chemicals</li> </ul>	Extension of the utilization phase through: <ul style="list-style-type: none"> <li>· Renewal of components</li> <li>· Modular design</li> <li>· Service offering</li> </ul>

per tonne of paper. Moreover, it also means reducing fiber loss and achieving time savings in paper production for customers by deploying the most efficient systems possible.

Voith Paper is using increasing amounts of renewable materials, and works tirelessly to close material, water, and auxiliary cycles. In doing so, we intend to further reduce the environmental impacts of paper production while increasing the cost-effectiveness of plants. In the reporting period Voith Paper made further progress in increasing the energy efficiency and reducing the environmental impacts of its products and services. Among their many outstanding features, over 70% of the 29 new products launched by Voith Paper are also more energy-efficient. Moreover, Voith Paper is always looking for opportunities to increase the recycling rate of its own production processes.

Over the coming years Voith Paper expects new emissions laws, which enter into force in the EU from mid-2018 onwards and in all signatory countries to the Kyoto Protocol, to provide considerable stimuli. As a consequence our customers are giving greater consideration to energy-saving projects. Our machines, products, and modification projects strongly support this focus.



Fact base  
Progress on Social and Environmental Impacts – Voith Paper

Fact base  
Recycling in Detail – Voith Paper

**Voith Hydro**

**Hydropower Plant**  
Sustainability aspects



Voith component lifecycle

**Complete Equipment from Voith**  
Contribution to greater sustainability



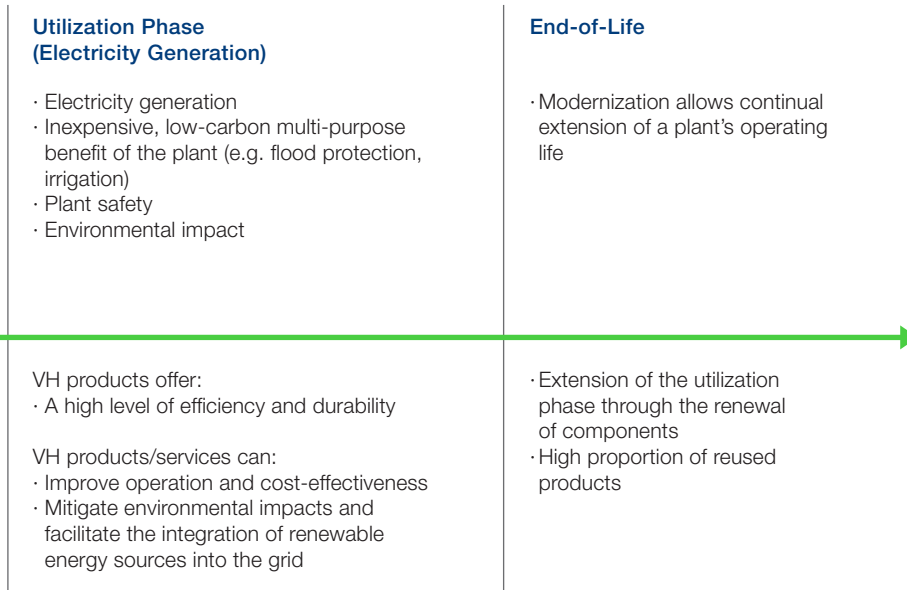
<p><b>Upstream/Supply Chain (Hydropower Plant Planning Phase)</b></p> <ul style="list-style-type: none"> <li>· Environmental &amp; social acceptability checks</li> <li>· Stakeholder engagement</li> </ul>	<p><b>Creation (Hydropower Plant Construction Phase)</b></p> <ul style="list-style-type: none"> <li>· Management of social and environmental aspects</li> <li>· Safe working conditions</li> </ul>
<ul style="list-style-type: none"> <li>· Reduction in supply chain risks through GPTs, CoC</li> <li>· ISO 9001, ISO 14001, and OSHAS 18001 matrix certification for production locations</li> </ul>	<ul style="list-style-type: none"> <li>· High global safety and quality standards</li> <li>· Technical customer training courses on optimal environmental and economic operation (HydroSchool)</li> </ul>

Hydropower is a renewable energy, yet despite its unavoidable impacts on nature it is an eco-friendly way to generate electricity. Voith technologies contribute to minimizing the environmental impact of hydropower plants – from improving water quality through aerating turbines and oil-free hubs which prevent water contamination to innovative fish-friendly runners that improve the fish passage. To further improve the fish passage of hydropower technologies Voith Hydro is participating in the EU-funded FIThydro working group.

Voith Hydro works tirelessly to minimize also the remaining environmental impacts, e.g. by reducing noise emissions produced by generators, turbines, and hydraulic auxiliary units in the hydropower plant. In addition, in the reporting year Voith Hydro filed a patent in the USA for its aerating runner – a technology that increases the level of dissolved oxygen in the water and has a minimal impact on energy conversion efficiency.

Owing to the long service life of hydropower plants – a service life of 70 years is not uncommon – our customers focus on their own energy requirements and material use during the utilization phase to optimize their operating costs, especially in the case of large systems and equipment.

To further limit environmental impacts, we aim to switch our production over to using environmentally friendly substances wherever this is technically possible. Voith Hydro also aims to install new hydropower plants at existing dams and weirs to generate renewable energy growth without having a further environmental impact. Another example includes small-scale hydropower plants based on the StreamDiver



at existing irrigation dams, which can be installed even where strict environmental regulations apply.

When forecasting and evaluating trends, Voith Hydro always needs to keep an eye on special regional aspects and their specific challenges in terms of quality, safety, and product responsibility. In China, for instance, there is a clear trend towards the strong expansion of pumped storage power plants and thus highly efficient machinery that is ideal for both pumping and turbine operation. Countries neighboring the Himalayas, such as Pakistan and India, continue to make significant use of hydropower; however, as the rivers are heavily contaminated by glacial sediment and suspended sand concentrations, this increases erosion of the components in contact with water in the power plant. Consequently, to improve these components' service life they need to be coated.

Models for the predictive maintenance as well as repair and overhaul of products throughout their lifecycle help to conserve resources while increasing efficiency. As an example, Voith Hydro modernized the generators for South Africa's second-largest pumped storage power plant, thereby significantly increasing the service life of the machines by reducing operating temperatures and vibration.

Another milestone for Voith Hydro in the reporting period was the successful commissioning of Europe's largest variable-speed pumped storage power plant, Frades II in Portugal. The power plant, which is considered to be a flagship project of international standing, makes a significant contribution to grid stabilization and the further expansion of renewable energy generation in Portugal.



Fact base  
Progress on Social and  
Environmental Impacts –  
Voith Hydro

**Voith Turbo**

**Bus**  
Sustainability aspects



Voith component lifecycle

**Voith Components**  
Contribution to greater sustainability



	<b>Upstream/Supply Chain (Procurement of Materials and Services)</b>	<b>Creation (System Construction Phase)</b>
Bus Sustainability aspects	Potential risks: · Social & environmental impacts in the supply chain	· Emissions (air, wastewater, noise, goods transportation) · Occupational accidents
Voith Components Contribution to greater sustainability	· Reduction in supply chain risks through GPTs, Code of Conduct, and LSA · ISO 14001 and OSHAS 18001 matrix certification for production locations	· Ensuring the occupational health and safety of our employees when integrating the transmission unit at the customer's location

Voith Turbo also follows the principle of offering increasingly energy-efficient and environmentally friendly product generations. It focuses on the impact of using Voith components on the total cost of ownership (TCO). By way of example, a 1% fuel saving with a standard bus brings the operator around €3,600 in operating-cost savings. This makes the topic of resource conservation through increased efficiency a key aspect of related customer discussions, whether during the tendering phase or on handover of the product. In this regard, Voith Turbo aims to adopt a continual process of improvement in which it also involves its customers.

Another of Voith Turbo's objectives is to play its part in increasing its sustainability performance in terms of the materials it uses, which is why it aims to ramp up the use of sustainable materials. At the same time, it will reduce its use of materials with a negative impact on human health or the environment to the minimum level necessary. The product development process already incorporates these aspects right from its early stages, with harmful substances replaced, where technically and economically feasible, by other substances as early as the engineering phase.

In the reporting period Voith Turbo achieved the following progress in terms of its energy efficiency and in reducing the environmental impacts of its products and services:

The newly designed VoreconNX is 7% more efficient than its predecessor, meaning the new VoreconNX saves energy, is more compact and lightweight, and increases process reliability in production thanks to its modular design. The product was launched in the reporting period.

<b>Utilization Phase (City and Overland Transportation)</b>	<b>End-of-Life</b>
<p>Potential risks:</p> <ul style="list-style-type: none"> <li>· Oil loss (30 liters of transmission oil)</li> <li>· CO<sub>2</sub> emissions and transportation noise</li> <li>· Noise emissions (transportation noise)</li> </ul> <p>Potential opportunities:</p> <ul style="list-style-type: none"> <li>· Emissions reduction in local public transport</li> </ul>	<p>Potential risks:</p> <ul style="list-style-type: none"> <li>· Operating fluids and interior fittings, etc.</li> </ul> <p>Potential opportunities:</p> <ul style="list-style-type: none"> <li>· Operating fluids and interior fittings, etc. Recyclable materials such as aluminum, copper, steel, less plastic</li> </ul>
<ul style="list-style-type: none"> <li>· Reducing emissions through acceleration and topography-based gear shifting and Smart Assist</li> <li>· Optimization of operating costs through Smart Maintenance and service friendliness</li> </ul>	<ul style="list-style-type: none"> <li>· Transmission Exchange Program (reconditioning of transmission units)</li> <li>· Correct handling and disposal</li> </ul>

In the reporting year Voith also presented the first member of a new product family in the field of speed control for compressors and pumps: the VECO-Drive. The assembly is over 97% efficient, saving energy and reducing operating costs.

Voith Turbo is also driving forward the development of Voith RailPacks to meet the more stringent rail emission regulations for railcars and locomotives that enter into force in 2021. Furthermore, in doing so this Group Division is also responding to the trend towards bi-mode rail vehicles that can be operated on non-electrified track sections using ultra-low emission diesel engines or batteries.

To minimize material costs and noise emissions in gear drives, the Voith Turbo Division Powertrain Technology developed bionic toothing, which is already being mass produced and used in rail-vehicle gear units.

Voith Turbo is one of only a handful of suppliers that can provide a complete powertrain for city buses from a single supplier. In the reporting year the presentation of the Voith E-Drive System for city buses marked a continuation of Voith Turbo's decades of activities in the field of hybrid and electric drive technology.



Fact base  
Progress on Social and Environmental Impacts – Voith Turbo

Fact base  
Challenge: Long Service Life

## 4.2 Responsibility in the Supply Chain

Resource conservation and social responsibility are anchored in our supply chains. Our stakeholders also considered this as material to the way we manage sustainability. In Purchasing, our Guiding Principles and the Voith Purchasing Manual set out specific requirements in this area.

Besides these aspects, Purchasing naturally focuses on price, quality, on-time delivery, compliance with health, safety, and environment legislation, as well as on upholding the ban on child and forced labor. Differing legislation and ever-growing demands for documentation, such as under the EU chemicals directive REACH and the Restriction of Hazardous Substances (RoHS) Directive, place high demands on our company.

In the reporting period, regulatory requirements on our Group continued to tighten through the UK Modern Slavery Act, for example, as well as through other laws for the protection of human rights. Please see the Voith website for our statement on these.

A further challenge is current legislation on conflict minerals in the USA and EU. In light of this, controlling complex, heterogeneous supply chains remains a core challenge for Voith Purchasing. We work tirelessly to increase transparency in our supply chain regarding the use of conflict minerals.



Fact base  
Use of Conflict Minerals

### High Purchasing Volume, Heterogeneous Product Range

In the 2016/17 fiscal year the value of our ordered goods and services stood at over €2.0 billion. As usual, the spectrum varied greatly, ranging from a 1 mm nut to a 100-tonne cast part, and from special customer-specific lacquering to electrical cable custom-made for Voith.

In terms of our invoicing volume, as in the previous year structural components accounted for the majority of our purchased product materials by value, followed by electricals/electronics, subcontracting, and cast parts.

### Fairness as a Fundamental Principle in an International Environment

As a global company, each year we work with over 20,000 active suppliers.

In principle we consistently strive for long-term business relationships, so we always focus on the economic feasibility of our requirements. We also believe firmly that treating each other fairly is the basis for a long-term partnership based on trust.

Supplier Days are special initiatives at which we get to engage in discussion with our business partners. In the reporting period, we held a successful Supplier Day for Voith Paper China and at Voith Turbo in Germany, with further Supplier Days planned.

### Clear Conditions Set the Framework

Our Code of Conduct and General Purchasing Conditions (GPCs) define our basic understanding of partnership, and provide the guidelines for questions regarding compliance as well as environmental and social standards. Both our Code of Conduct and GPCs are freely available on our website. Our GPCs form the basis for contractual agreements with our suppliers, and also ensure that their sub-suppliers abide by these requirements. The updating of our GPCs started in the previous year has now been completed, with virtually all paragraphs undergoing revision. This was due to revised export control regulations, which necessitated changes to our terms and conditions.

Country-specific versions ensure that local purchasing processes always take national aspects into account, for instance regarding payment terms, environmental standards, and customs requirements. As a result of this we produced additional country-specific versions in the reporting period for Poland, Chile, Argentina, Peru, and Colombia.

### Embedded in Our Organization

In Voith Purchasing, sustainability topics are assigned mainly to our Corporate Strategic Purchasing (CSP) Department, with a focus on setting sustainability goals for Purchasing, gathering data on KPIs, and reporting. In addition, CSP devotes itself to material sustainability issues such as the use of conflict minerals in the supply chain.

Relevant topics are identified internally within the Group, and the corresponding activities are agreed across Divisions and coordinated with the Purchasing committees.

Furthermore, in the reporting period the new analysis and controlling tool was rolled out in Purchasing. The tool offers greater transparency plus additional analysis options, and is significantly more user-friendly. The new tool is linked to all relevant ERP systems via a secure connection, ensuring the latest data is always available.

### Employees Receive Extensive Training

Our Purchasing Training Program, developed specifically for Purchasing, ensures that our employees around the world are always kept abreast of legal compliance issues, the use of IT tools, and supplier negotiations.



Fact base  
Procurement Markets



GPCs:  
[www.voith.com/corp-en/about-us/supplier-ecosystem.html](http://www.voith.com/corp-en/about-us/supplier-ecosystem.html)  
Code of Conduct:  
[voith.com/cn/coc-english.pdf](http://voith.com/cn/coc-english.pdf)



Fact base  
Country-specific GPCs



Fact base  
Scope of Training

All Purchasing employees either took part in face-to-face or e-learning training courses in the reporting year.

### **Supplier Self-Assessment and Evaluation**

To mitigate risks in the purchasing process we require our suppliers to provide regular self-assessments. In the 2016/17 fiscal year we rolled out a new supplier management system called SLM@Voith (Supplier Lifecycle Management): The roll-out of the new tool was also used to correct and clean up obsolete and redundant records. The new solution is not only more stable and technically better, but also includes more locations and is easier to use thanks to its clear layout. Accreditation and quality certificates as well as additional information to classify suppliers are also stored in the new system.

Despite the full technical migration and the associated six-month suspension, the system contained valid self-assessments for 2,547 suppliers in the reporting period.

As a result, we covered 55% of our invoicing volume with suppliers listed in our system as having a current and approved assessment. By maintaining centralized processing, we ensure that these assessments are gathered in a meaningful and coordinated way.

In addition to self-assessments, at least once a year employees from the departments as well as our buyers evaluate those suppliers with whom we place the largest order volumes. We use a standardized process based on transparent criteria, so results can be compared across the Group.

Due to the roll-out of the new supplier management system we were obliged to suspend our systematic evaluation process for six months; no new evaluations could be initiated during this period.

With the resumption of evaluations using the new system, an optimized evaluation logic was introduced that allows even more effective prioritization of the suppliers requiring evaluation.



Despite the migration to the new database, in the reporting period it held 710 valid evaluations on 566 different suppliers; we were able to transact 36% of our invoice volume with partners providing a valid supplier evaluation for the reporting period in our new database.

The supplier evaluation also encompasses sustainability criteria, which we use to calculate the sustainability ratio. It shows our employees' average subjective evaluation of our suppliers in relation to compliance with environmental and social standards. The partners we evaluated in the reporting period achieved an average sustainability ratio of 89.7%.

### Rigorous Action on Violations

If suppliers violate laws, the Voith Code of Conduct, or lose their creditworthiness, Purchasing is obliged to terminate the business relationship and block these suppliers centrally. Even violations of health, safety, and environment standards can lead to a Group-wide block under our Blocked Supplier Concept. In the 2016/17 fiscal year there were no new blocks due to a violation of social or environmental standards.

Suppliers can also report violations of sustainability standards in the supply chain on their own initiative. Just like our employees, our suppliers also have access to our anonymous Voith Compliance Helpdesk, which covers all countries and regions where Voith is active. Complaints can be submitted both in the local language and in English. We received no voluntary declarations, nor were we informed by suppliers of any violations by competitors or sub-suppliers in the reporting period.



Fact base  
Supplier Self-Assessments

Fact base  
Evaluations of Suppliers



Fact base  
Supplier Compliance

## The Report

Voith has published a Sustainability Report every year since 2009. This report describes the progress we made in the 2016/17 fiscal year, i.e. from October 1, 2016 to September 30, 2017. This report is supplemented by an online Fact Base. Furthermore, an accompanying highlight brochure is published every two years and will appear along with the Sustainability Report 2018.

In producing our report we followed the internationally recognized guidelines of the Global Reporting Initiative (GRI). Our report was not audited externally. In our assessment, the scope of our report meets the requirements of the Core option of the GRI Standards. To identify the material sustainability topics, in 2016 we developed our materiality analysis further, based on the results of a comprehensive stakeholder survey.

The most far-reaching change in the reporting period concerned the Group Division Voith Digital Solutions, which we will be covering extensively for the first time this year. Unless stated otherwise, the facts, figures and information provided in this report apply to the global Voith Group Divisions: Voith Hydro, Voith Paper, Voith Turbo, and Voith Digital Solutions. Please refer to the Voith Annual Report for the Group companies involved. The degree of consolidation comprises at least 80 % of the Voith Group by revenue and headcount, and includes all of our Group's major locations.

The information was requested electronically in writing, and the data was gathered using mainly division-specific software. In individual cases it is not currently possible to derive a three-year trend; however this is our objective for future reports. In a few cases, certain facts already reported and affecting previous periods have been corrected. We have marked this in the report at the appropriate points. Rounding differences may occur owing to the addition of data.

All forward-looking statements in this report are based on reasonable assumptions as at the deadline for content submission. Due to unknown risks, uncertainties, and other factors, the actual results, developments or performance of our company may deviate from our forecasts, estimations, and statements. For further information please see our Annual Report.

For improved readability we refrain from referring specifically to both genders in this report. This is not a value judgment, and all forms are to be understood as gender-neutral.

Further and more extensive information is provided at [www.voith.com](http://www.voith.com) and in our Annual Report. We currently expect to publish our next Sustainability Report in early 2019.

## Imprint and Contacts

### Project Management and Point of Contact for Content-related Questions

Corporate Sustainability

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### Further Information

This Sustainability Report is also available in German.

This German and English editions are available online at:

[www.voith.com/de/konzern/nachhaltigkeit](http://www.voith.com/de/konzern/nachhaltigkeit)

[www.voith.com/en/group/sustainability](http://www.voith.com/en/group/sustainability)

In addition to the Sustainability Report, Voith also publishes a comprehensive Annual Report at the end of the fiscal year.

It is available online at:

[www.voith.com/de/presse/](http://www.voith.com/de/presse/berichte-und-magazine-18929.html)

[berichte-und-magazine-18929.html](http://www.voith.com/de/presse/berichte-und-magazine-18929.html)

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Mark Elliott & Jim Blake

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## Environmentally Friendly Production

All CO<sub>2</sub> emissions produced during the course of printing and preparing the Voith Sustainability Report were determined. By making a proportionally equal investment in a Gold Standard climate project, the corresponding CO<sub>2</sub> emissions will be saved in the future and the Voith Sustainability Report will be CO<sub>2</sub>-compensated.



The recycled paper used for the Voith Sustainability Report 2017 is made from at least 60 % secondary fibers, and was produced using a Voith paper machine.



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**VOITH**  
Inspiring Technology  
for Generations

# GRI Index 2017

## Sustainability

# GRI Index

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102-9	Supply chain	86–87
102-10	Significant changes to the organization and its supply chain	12–14
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201-2	Financial implications and other risks and opportunities due to climate change		AR 2017: 175–184
201-4	Financial assistance received from government	No significant financial assistance in the reporting period.	27 • Employee Wages and Benefits • Employee Wages and Benefits
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103/205	Management Approach		22–25 <a href="http://voith.com/corp-en/coc-english.pdf">http://voith.com/corp-en/coc-english.pdf</a>
205-2	Communication and training about anti-corruption policies and procedures		23–25 Compliance Training
<b>Anti-competitive Behavior</b>			
103/206	Management Approach		22–25 <a href="http://voith.com/corp-en/coc-english.pdf">http://voith.com/corp-en/coc-english.pdf</a>
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	For reasons of confidentiality, the number and type of complaints is not communicated externally.	23–24, 89 • Violations of Compliance Provisions • Supplier Compliance
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<b>Materials</b>			
103/301	Management Approach		34–38
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301-2	Recycled input materials used		43 Materials Used



Indicators	Comment	Reference
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103/302	Management Approach	36–38
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302-2	Energy consumption outside of the organization	39–41 <ul style="list-style-type: none"> <li>• Energy Consumption: Total</li> <li>• Indirect Energy Consumption (Scope 3)</li> <li>• Proportion of Direct and Indirect Energy</li> </ul>
302-3	Energy intensity	39–41 Production-related Energy Consumption
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Indicators	Comment	Reference
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305-4	GHG emissions intensity	41–42 GHG Emissions: Specific (Scope 1 and 2)
305-5	Reduction of GHG emissions	41–42 GHG Emission Reduction Measures
305-6	Emissions of ozone-depleting substances (ODS)	Air Pollutants
305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	Air Pollutants
<b>Effluents and Waste</b>		
103/306	Management Approach	32–38
306-1	Water discharge by quality and destination	46–47 • Wastewater: By Method of Discharge • Wastewater: Quality
306-2	Waste by type and disposal method	43–45 • Volume of Waste • Waste Saving Measures and Further Potentialise • Waste Disposal
306-3	Significant spills	Voith is not aware of any significant incidents.
306-4	Transport of hazardous waste	43–45 Hazardous Waste
306-5	Water bodies affected by water discharges and/or runoff	46–47 Water and Neighboring Habitat Protection
<b>Environmental Compliance</b>		
103/307	Management Approach	22–25
307-1	Non-compliance with environmental laws and regulations	Voith is not aware of any significant incidents. Violations of Compliance Provisions

Indicators	Comment	Reference
<b>Supplier Environmental Assessment</b>		
103/308	Management Approach	86–89
308-1	New suppliers that were screened using environmental criteria	86–89 Supplier Self Assessment
<b>Social</b>		
<b>Employment</b>		
103/401	Management Approach	50–52
401-1	New employee hires and employee turnover	56–58 • Employment Length/ Workforce Fluctuation • New Hirings
401-3	Parental leave	55–56 Parental Leave
<b>Labor/Management Relations</b>		
103/402	Management Approach	50–52
402-1	Minimum notice periods regarding operational changes	Upholding Employee Rights
<b>Occupational Health and Safety</b>		
103/403	Management Approach	61–67
403-1	Workers representation in formal joint management worker health and safety committees	Employee Representation in Committees
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	66 Work accidents
403-3	Workers with high incidence or high risk of diseases related to their occupation	63–64 Work accidents
<b>Training and Education</b>		
103/404	Management Approach	51–61
404-1	Average hours of training per year per employee	59 Training and Education & Career Development
404-2	Programs for upgrading employee skills and transition assistance programs	58–60
404-3	Percentage of employees receiving regular performance and career development reviews	60–61 Training and Education & Career Development

Indicators		Comment	Reference
<b>Diversity and Equal Opportunity</b>			
103/405	Management Approach		53–56
405-1	Diversity of governance bodies and employees		53–56 • Employment Ratio of People with Disabilities • Diversity in the Management Team and in the Workforce • AR2017: 46 <a href="http://voith.com/corp-en/about-us/company/corporate-board-of-management.html">voith.com/corp-en/about-us/company/corporate-board-of-management.html</a>
<b>Non-discrimination</b>			
103/406	Management Approach		53–56
406-1	Incidents of discrimination and corrective actions taken		53–54
<b>Freedom of Association and Collective Bargaining</b>			
103/407	Management Approach		86–89 Upholding Employee Rights <a href="http://voith.com/corp-en/coc-english.pdf">voith.com/corp-en/coc-english.pdf</a>
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Voith is not aware of any significant incidents.	89 Upholding Employee Rights
<b>Child Labor</b>			
103/408	Management Approach		22–25 <a href="http://voith.com/corp-en/coc-english.pdf">voith.com/corp-en/coc-english.pdf</a> <a href="http://voith.com/de/brochures_modern_slavery_en.pdf">voith.com/de/brochures_modern_slavery_en.pdf</a>
408-1	Operations and suppliers at significant risk for incidents of child labor	Voith is not aware of any significant incidents.	89
<b>Forced or Compulsory Labor</b>			
103/409	Management Approach		22–25 <a href="http://voith.com/corp-en/coc-english.pdf">voith.com/corp-en/coc-english.pdf</a> <a href="http://voith.com/de/brochures_modern_slavery_en.pdf">voith.com/de/brochures_modern_slavery_en.pdf</a>
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Voith is not aware of any significant incidents.	89

Indicators	Comment	Reference
<b>Security Practices</b>		
103/410	Management Approach	voith.com/corp-en/coc-english.pdf voith.com/de/brochures_modern_slavery_en.pdf
410-1	Security personnel trained in human rights policies or procedures	Security service providers are obligated to support compliance with the Code of Conduct by suitable means. Voith does not currently have any data on training held by our service providers.
<b>Human Rights Assessment</b>		
103/412	Management Approach	22–25 voith.com/corp-en/coc-english.pdf
412-2	Employee training on human rights policies or procedures	23, 87–88 Compliance Training
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Global respect for basic human rights is enshrined in our Code of Conduct. All investment decisions are subject to this code.
<b>Supplier Social Assessment</b>		
103/414	Management Approach	22–25, 86–89
414-1	New suppliers that were screened using social criteria	86–89 Supplier Self Assessment
<b>Public Policy</b>		
103/415	Management Approach	22–25
415-1	Political contributions	27 Contributions to Political Actors

Indicators	Comment	Reference
<b>Customer Health Safety</b>		
103/416	Management Approach	77–78 Quality Management in Our Business Areas
416-1	Assessment of the health and safety impacts of product and service categories	77–78 Quality Management in Our Business Areas
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Voith did not receive reports of any significant incidents in the reporting period.
<b>Customer Privacy</b>		
103/418	Management Approach	25
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Voith did not receive reports of any significant incidents in the reporting period.
<b>Socioeconomic Compliance</b>		
103/419	Management Approach	22–25
419-1	Non-compliance with laws and regulations in the social and economic area	Voith did not receive reports of any significant incidents in the reporting period.

# Fact base 2017

## Sustainability

# Fact base

## 1. Bases for Our Actions

### 1.1 Our Profile

Key Economic Figures	Key Economic Figures in € millions	FY 2016/17	FY 2015/16	FY 2014/15
	Revenues	4,223	4,252	4,302
	Operating result before non-recurring items	241	275	270
	Income before taxes	682	140	-23
	<b>Direct Economic Value Generated and Distributed in € millions</b>			
	<b>Direct economic value generated (= revenues)</b>	4,223	4,252	4,302
	<b>Economic value distributed</b>			
	Operating costs	2,885	2,863	2,840
	Employee wages and benefits	1,415	1,401	1,434
	Payments to providers of capital	76	89	73
	Payments to government	82	51	48
	Community investments	n.d.	n.d.	n.d.
	Economic value retained	596	29	-93
	<b>Expenditures for Employees in € millions</b>			
	Wages and salaries	1,165	1,154	1,188
	Social security contributions, retirement pensions, and assistance	251	247	246
	<b>Business Area Portraits in € millions</b>			
	<b>Revenues</b>			
	Voith Hydro	1,381	1,388	1,313
	Voith Turbo	1,283	1,397	1,470
	Voith Paper	1,527	1,456	1,506
	Voith Digital Solutions*	13	-	-
	<b>Profit from operations</b>			
	Voith Hydro	106	105	101
	Voith Turbo	91	144	91
	Voith Paper	107	76	58
	Voith Digital Solutions*	-43	-	-
	<b>Taxes Paid by Region in € thousands</b>			
	Germany	26,873	34,561	40,478
	Europe excluding Germany	16,167	10,108	12,904
	Americas	29,187	17,302	21,766
	Asia	17,677	17,337	16,457
	Other	3,132	1,417	1,774
	<b>Total</b>	93,036	80,725	93,379

\* Independent segment only since 2016/17; previously in process of being established.



International Focus	↻ <b>Locations by Regional Distribution</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Sales Markets in %</b>			
	Germany	13	12	11
	Europe excluding Germany	26	28	27
	Americas	28	27	29
	Asia	27	27	28
	Other	6	6	5
Financial Assistance	↻ <b>Financial Assistance Received from Government</b>			
	Not recorded			

## 1.2 Strategy and Organization

HSE Data Recording	↻ We use our reporting tools to record information on health, safety, and environment, as well as to verify key performance indicators (KPIs) and monitor our goals on acting sustainably. To help us achieve this, we are guided by the international standards ISO 14001 and OHSAS 18001. In 2003 we set out binding Group-wide environmental standards that apply to all value-adding process levels. They form part of our Health, Safety, and Environment (HSE) Group Directive.			
EBM Data Recording	↻ We review our progress towards achieving all of our EBM (Ecological Business Management) measures through our integrated process of monitoring of measures and KPIs, something our Corporate Board of Management is also involved in as part of our quarterly reporting.			
Certifications	↻ <b>Existing Voith-location Certifications Number</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	ISO 14001	56	58	58
	ISO 9001	64	69	68
	OHSAS 18001	57	60	60
	<b>Degree of Coverage based on Employees in %</b>			
	ISO 14001	77.1	70.0	70.0
	ISO 9001	80.7	75.6	74.4
OHSAS 18001	78.0	71.4	71.1	

Memberships of Associations	<p>German Engineering Federation (VDMA) membership: Specialist area of hydropower and paper technology</p> <p>Voith association activities by substantial membership contributions:</p> <ul style="list-style-type: none"> <li>• VDMA – Verband Deutscher Maschinen- und Anlagenbauer e.V. (German Engineering Federation)</li> <li>• SWM – Südwestmetall Verband der Metall- und Elektroindustrie Baden-Württemberg e.V. (The Baden-Württemberg Employers' Association of the Metal and Electrical Industry)</li> <li>• FVA – Forschungsvereinigung Antriebstechnik e.V. (Research Association for Power Transmission Engineering)</li> <li>• Förderkreis der Deutschen Industrie e.V. (Society for the Advancement of German Industry)</li> <li>• DIN – Deutsches Institut für Normung e.V. (German Standards Institute)</li> <li>• MAI Carbon Cluster Management GmbH</li> <li>• IHA – International Hydropower Association</li> <li>• VDB – Verband der Bahnindustrie in Germany e.V. (German Railway Industry Association)</li> <li>• Paper Machine Clothing Association</li> <li>• UNIFE – Union des Industries Ferroviaires Européennes (Union of the European Railway Industries)</li> </ul> <p>Dialog with policy makers: Since February 2014 Dr. Lienhard has held the position of Chairman of the Asia-Pacific Committee of German Business.</p>
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### 1.3 Values and Compliance






External Charters and Principles	<p>The Voith Group's Code of Conduct sets out clear standards, which are aligned with established external charters and principles.</p>																																												
Compliance Training	<p><b>Compliance Training</b></p> <table border="1"> <thead> <tr> <th>Number of employees who underwent further training</th> <th>FY 2016/17</th> <th>FY 2015/16</th> <th>FY 2014/15</th> </tr> </thead> <tbody> <tr> <td>Management from the upper four levels, new managers at the Voith Academy, Sales, Sourcing (1 day)</td> <td>542</td> <td>241</td> <td>391</td> </tr> <tr> <td>Decentralized training by compliance officer (1.5 hours)</td> <td>1,479</td> <td>904</td> <td>857</td> </tr> <tr> <td>Instruction by supervisor (0.5 hours)</td> <td>2,699</td> <td>2,710</td> <td>1,457</td> </tr> <tr> <td>Compliance officers (2 days)</td> <td>34</td> <td>30</td> <td>28</td> </tr> <tr> <td colspan="4"><b>Number of training sessions</b></td> </tr> <tr> <td>Management from the upper four levels, new managers at the Voith Academy, Sales, Sourcing (1 day)</td> <td>23</td> <td>12</td> <td>20</td> </tr> <tr> <td>Decentralized training by compliance officer (1.5 hours)</td> <td>n. r.</td> <td>n. r.</td> <td>n. r.</td> </tr> <tr> <td>Compliance officers (2.5 days)</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Employees trained in compliance in %</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>Managers trained in compliance in %</td> <td>100</td> <td>100</td> <td>100</td> </tr> </tbody> </table>	Number of employees who underwent further training	FY 2016/17	FY 2015/16	FY 2014/15	Management from the upper four levels, new managers at the Voith Academy, Sales, Sourcing (1 day)	542	241	391	Decentralized training by compliance officer (1.5 hours)	1,479	904	857	Instruction by supervisor (0.5 hours)	2,699	2,710	1,457	Compliance officers (2 days)	34	30	28	<b>Number of training sessions</b>				Management from the upper four levels, new managers at the Voith Academy, Sales, Sourcing (1 day)	23	12	20	Decentralized training by compliance officer (1.5 hours)	n. r.	n. r.	n. r.	Compliance officers (2.5 days)	2	2	2	Employees trained in compliance in %	100	100	100	Managers trained in compliance in %	100	100	100
Number of employees who underwent further training	FY 2016/17	FY 2015/16	FY 2014/15																																										
Management from the upper four levels, new managers at the Voith Academy, Sales, Sourcing (1 day)	542	241	391																																										
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Compliance officers (2.5 days)	2	2	2																																										
Employees trained in compliance in %	100	100	100																																										
Managers trained in compliance in %	100	100	100																																										
External Safety Personnel	<p>For cost reasons, Voith appoints external safety personnel at the majority of its locations and construction sites. Voith does not train these external safety personnel on the Voith Code of Conduct.</p>																																												

Violations of Compliance Provisions	↪ <b>Compliance Helpdesk Number</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Reports via the Compliance Helpdesk (complaints regarding suppliers)	0	0	0
	of which reported violations against environmental standards	0	0	0
	of which reported violations against social standards	0	0	0
<b>Comment:</b> The Voith Code of Conduct is an integral part of our compliance training.				
Escalation Paths	↪	<ul style="list-style-type: none"> <li>• Compliance Officer</li> <li>• GD Compliance Officer</li> <li>• Compliance Committee</li> <li>• Corporate Board of Management</li> <li>• Supervisory Board</li> </ul>		

## 1.4 Responsibility for Society

### Projects and Activities

Donations and Sponsorships	↪ <b>Donations and Sponsorships in € millions</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>	
	<b>Voith Group</b>	2.95	1.99	2.80	
	of which donations	1.91	0.80	0.87	
	of which sponsorships	1.04	1.19	1.93	
	<b>Sponsorship Aid by Project in %</b>				
	Education	54	29	26	
	Social affairs	9	8	5	
	Sport	32	57	65	
	Culture	3	7	4	
	<b>Sponsorship Aid by Region in %</b>				
	Germany	85.7	86.1	91.2	
	Europe excluding Germany	5.9	1.7	2.0	
	Americas	3.1	6.6	3.2	
	Asia	3.8	4.3	2.2	
	Other	1.5	1.3	1.3	
Contributions to Political Actors	↪ <b>Contributions to Political Actors in € thousands</b>				
	Germany	50	80	0	
	Europe excluding Germany	0	0	0	
	Americas	0	0	0	
	Asia	0	0	0	
	Other	0	0	0	
	<b>Total</b>	<b>50</b>	<b>80</b>	<b>0</b>	

Special Vocational College Hanns Voith	 The aim of the institution is to support special-needs youngsters in their development, to encourage them personally, and thus open up opportunities for training placements or work. The model is a success story: Over 90 percent of students are taken on after one year of vocational preparation, with over 70 percent of them going into a training scheme. And we are proud to say that since 1972 Voith has enabled 1,406 youngsters from the district to lead a structured life.
business@school Training Initiative	 In the 2016/17 fiscal year 17 Voith employees volunteered their services once again to support the initiative, providing the necessary practical link through their knowledge and experience. They supervised around 40 students in eight groups at two Heidenheim high schools.
University Engagement and Foundation Professorships	 At university level, we support young talents at the universities of Kempten, and Ulm as part of the German Germanystipendien scholarship scheme. In the reporting year we invested €9,000 in this area. Additionally, we provide endowments for professorships at several German universities. By doing so, we aim to contribute – without influencing the research content or teaching practices – to the training of new academic talent and promote research in scientific areas relevant to Voith.
International Education Projects	 Our long-standing cooperation with schools and universities has also proven its worth in Europe, the US, India, China, and Brazil. Our assistance in this area includes support for the Formare project of Fundação lochpe, the Educational Freedom project of Recreatur ResgataTUR, and collaboration with Escola Estadual Conjunto Habitacional Voith, the Friedrich von Voith school in São Paulo, Brazil, and the Ithembehle School, South Africa.
International Social Projects	 On the occasion of its 150th anniversary, Voith is donating €150,000 to the charity Theirworld to set up six new Voith Code Clubs in Tanzania. The Code Clubs help 720 girls and young women in Tanzania learn key communication and leadership and basic programming skills that qualify them for the growing technology industry in Africa. The clubs were opened in autumn of 2017.

## 2. Environment

### 2.1 Environmental Management Approach

#### 2.1.1 Operational Environmental Protection

##### Environmental Incident Reporting System

Noise Complaints We work tirelessly to minimize noise pollution at our locations and rigorously follow up on any information or complaints. In the reporting period we received no complaints concerning noise.

##### Hazardous Materials Management

Nano-technology Nanoparticles are embedded in the following products:
 

- Voith Turbo: cooling systems for monorails, locomotives, railcars, special vehicles and high-speed trains. The particular coating process is performed by a service provider, and currently less than 10 kg of material is in field use.
- Voith Paper: calendar and roll covers in the area of finishings. The NanoPearl coatings represent the latest in calendar cover technology thanks to an improved nanoparticle filler system. According to the manufacturer's statement, the quartz particles are produced in situ with the resin and never released at any stage of the manufacturing process. When rubbed during use, the particles are still surrounded by plastic, so pose no hazard. No particles are released in thermal processing either.

#### 2.1.2 Efficient Use of Resources

Environmental Goals	Environmental Goals in %	FY 2016/17	FY 2015/16	FY 2014/15
	Reduction in specific energy consumption compared to 2011/12	-14.8	-15.6	-9.7
	Reduction in specific freshwater consumption compared to 2011/12	-30.9	-30.8	-9.2
	Reduction in specific waste volume compared to 2011/12	-31.7	-18.2	-7.1

##### Green Controlling Provides an Objective Basis for Decision-making

Green Controlling/ Group-wide Data Recording When gathering data, we follow the definitions set out by the international GRI G4 sustainability standard, which also forms the basis for this report. Wherever an additional, directly measurable added value arises for Voith, we also go beyond meeting these requirements.

Almost 90 Voith locations globally record data on energy consumption every month, and data on waste and fresh water every quarter using our hse+ sustainability database. The EBM organizations in our Group Divisions and the central function Corporate Sustainability & HSE validate the data, and report it to the Corporate Board of Management on a quarterly basis. Besides data and KPIs, this report includes a listing of resource-conservation measures and their implementation status. Before a measure can be completed, its validity must be checked at the location in question and the result stored in the database.

The data is the basis for deriving our internal targets down to location level and is incorporated into our quarterly internal reporting.

EBM Experts The work of our EBM experts is underpinned by the legal requirements relating to energy and environment as well as the extensive experience they have gained since 2008 from EBM projects on energy and resource efficiency. Their activities include assessing the cost-effectiveness of measures using lifecycle costs.

##### Hot-spot Analyses Leverage Further Potential

Hot-spot Analysis Methodology When conducting a hot-spot analysis, the consumption of each control and analysis level (i.e. region, Group Division, location, system, process) is determined and displayed graphically. Data is prepared both according to physical consumption and by associated cost, bringing transparency to "hot-spots" with high consumption levels and costs. Based on this, we develop and approximately evaluate project ideas before gradually developing them further using a stage-gate process through to implementation. As part of this, we employ economic and ecological evaluation criteria, in accordance with our Green Controlling cycle. We regularly review the distribution of consumption based on changing patterns of consumption and general conditions (location activities, economic activity, changes to the fleet of machines and plant, etc.).

## 2.2. Performance in the Reporting Period

### 2.2.1 Energy Efficiency and Greenhouse Gas Emissions

#### Energy Consumption

Energy Consumption: Total	<b>Total Energy Consumption in MWh</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Total Energy Consumption</b>	641,736	635,647	706,416
	Production-related energy consumption	453,012	452,294	489,473
	Business travel	53,066	59,581	65,272
	Logistics	135,658	123,772	151,671
	<b>Total Energy Consumption in %</b>			
	Scope 1	25	26	25
	Scope 2	49	49	48
	Scope 3	26	25	27

**Data-gathering:** The required unit of data is gathered, validated, and evidenced centrally each month by means of a data-gathering process at the locations. The units are converted in the database.

Energy use (total, renewable, non-renewable); total biomass + renewable energy sources; total energy use for own fleet from non-renewable energy sources was 2,310,249 GJ.

Direct Energy Consumption (Scope 1)	<b>Direct Energy Consumption (Scope 1) in MWh</b>			
	<b>Direct energy consumption in production</b>	137,286	143,687	153,709
	<b>Direct energy consumption of the Voith vehicle fleet</b>	22,492	24,435	23,541
	Company cars*	5,295	5,432	5,412
	Logistics	17,197	19,003	18,129
	Natural gas in %	83	82	81
	Heating oil in %	4	4	3
	Diesel in %	6	6	6
	LPG in %	7	7	9
	Biomass/biogenic energy sources in %	–	–	–
	Other renewable energy sources and captive generation of renewable energy in %	< 1	< 1	< 1
	Others in %	0	0	0

**Data-gathering:** The required unit of data is gathered, validated, and evidenced centrally each month by means of a data-gathering process at the locations. The units are converted in the database.

Direct Energy Consumption (Scope 2)	<b>Direct Energy Consumption (Scope 2) in MWh</b>			
	<b>Indirect energy consumption</b> (purchased and captive, only if the fuels are not included above)	315,726	308,606	335,764
	Electricity	242,735	249,206	268,855
	Long-distance heating	63,774	58,305	66,058
	Steam	9,216	1,096	850
	<b>Energy sold</b>	125	242	343

\* Company cars do not include: taxis, employees' personal cars, rental cars.

Direct Energy Consumption (Scope 3)	<b>Direct Energy Consumption (Scope 3)</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Business travel</b> in MWh		47,771	54,149
Rail in %		< 1	< 1	< 1
Car (not belonging to the Voith fleet, e.g. rental cars) in %		7	6	6
Flight (short-distance) in %		2	3	2
Flight (long-distance) in %		90	91	91
<b>Logistics (upstream and downstream)</b> in MWh		118,461	104,769	133,542
Rail in %		< 1	< 1	< 1
Truck in %		14	11	9
Ship in %		6	4	5
Flight in %		80	85	86

Only the stated uses of energy and greenhouse gas emissions have as yet been able to be recorded with reference to Scope 3. We are working to include other significant uses of energy and sources of emissions in our calculations.

Energy-saving Measures and Further Potentials	<b>Reduction of Energy Consumption as a Direct Consequence of Conservation and Efficiency Drives</b> in MWh			
	<b>Reduction in energy consumption</b>		9,789	23,634
The following savings were achieved, among others, in the reporting period:				
1.3 GWh (925 t CO <sub>2</sub> e) through lighting projects in Heidenheim, Salzgitter, and Faridabad, India				
820 MWh (160 t CO <sub>2</sub> e) through process optimizations in generator production in São Paulo, Brazil				
440 GWh (100 t CO <sub>2</sub> e) through capacity adjustments in the decentralized process heat system at our Högsjö location, Sweden				
300 MWh (90 t CO <sub>2</sub> e) through demand control of pumps and cooling units at our Crailsheim location				
<b>Energy Saving Potential</b> in GWh				
<b>Energy saving potential since FY 2011/12</b>		123.7	107.0	90.1
of which achieved in the FY		9.8	23.6	25.4
savings already achieved since FY 2011/12		83.4	73.6	49.9
<b>Method:</b> The relevant Ecological Business Manager checks the effectiveness of measures recorded at location level. A special tool is used to check measures centrally.				

## Energy Mix Largely Unchanged

Renewable Energies	<b>Energy from Renewable and Non-renewable Resources</b> in %			
	Energy from renewable resources		18.2	14.8
Energy from non-renewable resources		81.8	85.2	84.4

Production-related Energy Consumption	↻ <b>Specific Production-related Energy Consumption (Scope 1 and 2)</b> in MWh/€ millions revenues	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Specific energy consumption/greenhouse gas emissions (Scope 1 and 2)	107.3	106.4	113.8
<b>Production-related Energy Consumption (Scope 1 and 2) by Region in MWh</b>				
<b>Total energy consumption/greenhouse gas emissions in MWh</b>		453,012	452,294	489,473
Germany in %		36	35	37
Europe excluding Germany in %		13	14	14
Americas in %		32	35	34
Asia in %		19	16	14
Other in %		< 1	< 1	< 1
<b>Reduction of Production-related Energy Consumption in %</b>				
Reduction in production-related energy consumption versus previous year		0.2	-7.6	-6.9
Reduction of direct energy consumption		-4.5	-6.5	-9.5
Reduction of indirect energy consumption		2.3	-8.1	-5.7
<b>Key Drivers of Energy Consumption in %</b>				
Heating and cooling energy		31.1	31.9	33.5
Paper machine clothing production		26.2	26.6	25.5
Machine tool operation		3.8	5.8	5.4
São Paulo foundry		5.8	5.0	5.5
Proportion of Direct and Indirect Energy	↻ <b>Direct and Indirect Energy in %</b>			
	Proportion of direct energy	30	32	31
	Proportion of indirect energy	70	68	69
<b>Electricity Consumption Continues to Fall</b>				
Electricity Mix	↻ <b>Electricity Mix in %</b>			
	Renewable resources	33.6	26.7	28.1
	Non-renewable resources	66.4	73.3	71.9



**Environmental Impacts of Buildings** ↻ Voith takes environmental aspects fully into consideration when we construct new plants or modify existing ones. In doing so, we involve environmental experts from the regional HSE service organization in the project right from the planning phase. They provide expert advice on minimizing environmental impacts and ensuring compliance with applicable legislative requirements, and assist with approval processes. When it comes to new plant constructions and modifications, our experts focus particularly on measures to improve the energy and water efficiency of the building. The procedure they follow is set out in an Environmental Group Directive, which is part of our HSE Group Directive. This also lays down energy and resource efficiency standards for the procurement of new or replacement production systems and their components.

Our actions here are also receiving external recognition: At our production facility in Kunshan, China, one production building and the new Training Center are certified to the LEED Gold Standard.

Implemented measures to increase building/infrastructure energy efficiency:

- Refurbishment/upgrading of multiple heating plants at the location of Heidenheim, reduction in circulation losses, savings of approx. 100 MWh/year
- Replacement of skylight windows in the production hall at our Garching location, improvement in the U-value, savings of approx. 427 MWh/year

Performing of energy audits in accordance with DIN EN 16247-1

- In all areas subject to statutory regulations
- Identification of building and infrastructure measures, including initial assessment of their effectiveness




## Greenhouse Gas Emissions

**GHG Emissions: Recording Methodology** ↻ We calculate our greenhouse gas emissions by energy source and based on specific CO<sub>2</sub>e factors. We derive these from a database as CO<sub>2</sub> equivalents.

Since the 2016/17 fiscal year our global locations have reported on and evidenced their location-specific CO<sub>2</sub> factor for power, replacing country- or region-specific factors. This allows us to achieve even greater accuracy. As part of this change, we also adjusted the factors for district heating and steam. This also gave rise to retroactive changes in previous years of approx. 6,000 tonnes. We now also gather data on the GHG effect of refrigerant emissions. Non-specific GHG factors are now taken from DEFRA or the GaBi database.

Recording emissions as CO<sub>2</sub> equivalents based on conversion factors also allows us to factor in the emission of other greenhouse gases such as CH<sub>4</sub>, N<sub>2</sub>O, HCF, PFC and SF<sub>6</sub>.

GHG Emissions: Total	<b>Greenhouse Gas Emissions in t CO<sub>2</sub>e</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Total Greenhouse Gas Emissions</b>	210,752	203,637	219,568
	Production-related energy consumption	158,876	153,168	159,924
	Business travel	14,397	16,308	17,896
	Logistics	37,480	34,161	41,748
	<b>Total Greenhouse Gas Emissions in %</b>			
	Scope 1	16	18	18
	Scope 2	62	60	58
	Scope 3	22	21	24
	<b>Production-related Greenhouse Gas Emissions (Scope 1 and 2) by Region</b>			
	<b>Total energy consumption in t CO<sub>2</sub>e</b>	158,876	153,168	159,924
	Germany in %	28	26	28
	Europe excluding Germany in %	5	7	7
	Americas in %	28	35	35
	Asia in %	39	33	30
	Other in %	0	0	0

GHG Emissions: Scope 1	 <b>Direct Greenhouse Gas Emissions (Scope 1)</b> in t CO <sub>2</sub> e	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Direct energy consumption in production</b>	26,442	30,554	32,728
	<b>Direct energy consumption of the Voith vehicle fleet</b>	6,095	6,869	6,613
	Company cars	1,312	1,463	1,465
	Logistics	4,783	5,406	5,148
	<b>Volatile greenhouse gas emissions</b>	1,928	n.v.	n.v.
	Natural gas in %	79	79	77
	Heating oil in %	6	5	5
	Diesel in %	7	8	8
	LPG in %	7	8	10
	Biomass/biogenic energy sources in %	–	–	–
	Other renewable energy sources and captive generation of renewable energy in %	<1	<1	<1
	Other in %	0	0	–
In FY 2016/17 volatile GHG emissions were recorded for the first time as production-related emissions.				
GHG Emissions: Scope 2	 <b>Indirect Greenhouse Gas Emissions (Scope 2)</b> in t CO <sub>2</sub> e			
	<b>Indirect energy consumption</b> (purchased and captive, only if the fuels are not included above)	130,506	122,614	127,196
	Electricity	108,541	107,228	111,017
	Long-distance heating	16,469	14,989	15,857
	Steam	5,495	397	323
	<b>Energy sold</b>	70	118	167
GHG Emissions: Scope 3	 <b>Indirect Greenhouse Gas Emissions (Scope 3)</b> in t CO <sub>2</sub> e			
	<b>Business travel</b>	13,084	14,845	16,417
	Rail in %	<1	<1	<1
	Car (not belonging to the Voith fleet, e.g. rental cars) in %	6	6	6
	Flight (short-distance) in %	2	3	2
	Flight (long-distance) in %	92	91	92
	<b>Logistics (upstream and downstream) in t CO<sub>2</sub>e</b>	32,697	28,755	36,575
	Rail in %	<1	<1	<1
	Truck in %	16	13	11
	Ship in %	6	4	5
	Flight in %	78	83	84
<b>Note:</b> Only the stated uses of energy and greenhouse gas emissions have as yet been able to be recorded with reference to Scope 3. We are working to include other significant uses of energy and sources of emissions in our calculations.				

\* Company cars do not include: taxis, employees' personal cars, rental cars.

GHG Emissions: Specific (Scope 1 and 2)	<b>Specific Production-related Greenhouse Gas Emissions (Scope 1 and 2) in t CO<sub>2</sub>e/€ millions revenues</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Specific greenhouse gas emissions (Scope 1 and 2)	37.2	36.0	37.2
Transport Emissions	<p><b>Business trips</b></p> <p>Wherever possible we avoid taking unnecessary business trips, which is why we are increasingly using video and telephone conferencing in our global organization to save on travel expenses and allow speedy coordination.</p> <p>Furthermore, every quote provided by our travel agency partner automatically shows the CO<sub>2</sub>e emissions generated by a particular means of transport, providing transparency to Voith travelers when choosing their means of transport in terms of CO<sub>2</sub>e emissions.</p> <p>In addition we predominantly lease the vehicles in our vehicle fleet, and we replace them every three years by the next generation of lower-emission vehicle.</p> <p><b>Logistics</b></p> <p>Our transport-related CO<sub>2</sub>e emissions – caused mainly by our external logistics service providers – rose year on year by 14% to 32,697 t (previous year: 28,755 t). This increase was due mainly to the significantly higher transport volumes, especially by ship; however, we reduced the share of emissions from airfreight.</p> <p>As part of our Group-wide program to improve operational excellence, we are also working on shortening delivery times and optimizing delivery costs.</p>			
GHG Emission Reduction Measures*	<b>Reduction in Energy Consumption as a Direct Consequence of Conservation and Efficiency Drives in t CO<sub>2</sub>e</b>			
	Reduction in GHG emissions	7.456	10.238	11.003
	<b>Reduction in production-related CO<sub>2</sub>e Emissions</b>			
	Reduction in production-related CO <sub>2</sub> e emissions versus previous year in %	1,9	-4,1	-6,1
	Reduction in direct CO <sub>2</sub> e emissions in %	-13,5	-6,6	-9,97
	Reduction in indirect CO <sub>2</sub> e emissions in %	5,7	-3,46	-5,05
Emissions Trading	<p>Voith does not participate in the European emissions trading scheme.</p>			

\* See energy consumption reduction measures.

Air Pollutants	Air Pollutants* A384 in t	FY 2016/17	FY 2015/16	FY 2014/15
	Chlorofluorocarbons (CFCs)**	< 1	< 1	< 1
	Hydrochlorofluorocarbons (HCFCs)**	< 1	< 1	< 1
	Halon**	n.s.	n.s.	n.s.
	Methyl bromide (CH <sub>3</sub> Br)**	n.s.	n.s.	n.s.
	Volatile organic compounds (VOC)	689	671	691
	Non-methane volatile organic compounds (NMVOCs)	135	149	153
	Persistent organic pollutants (POPs)	n.s.	n.s.	n.s.
	Hazardous air pollutants (HAPs)	27	26	26
	Dust emissions	197	171	166
	Respirable fraction	151	128	125
	Heavy metals	3	2	2
	Nitrogen oxides (NO <sub>x</sub> )	592	551	614
	Sulfur oxides (SO <sub>x</sub> )	490	449	479
	Sulfur hexafluoride (SF <sub>6</sub> )	< 1	< 1	< 1

The indicators of other air pollutants are calculated using LCI-based conversion factors from the reported energy consumption, logistics, and business travel data. In addition, we also measure emissions of refrigerants, solvents, heavy metals, and dust from non-energy based manufacturing processes.

In principle, other air pollutants from energy consumption are the dominant factor.

In terms of VOCs significant contributors include the transport of goods at 117 t (previous year 85 t) and business travel at 89 t (previous year 99 t). In terms of NMVOCs significant contributors include production-related VOC emissions of 50 t (previous year 70 t). For the latter, coating processes (resins for generator production and roll coating), lacquering processes, and cleaning processes (particularly surface cleaning) account for around a third each.

Nitrogen oxide (NO<sub>x</sub>) emissions are generated in significant quantities from goods transportation, at 206 t (previous year: 166 t).

Regarding dust emissions, our foundry in São Paulo, Brazil, is a significant individual emitter, generating 19 t (previous year: 17 t). Dust emissions originate mainly from steel reversion, which is unaffected by declines in local production.

\* Production-related energy consumption and product-related energy consumption were recorded as well as air pollutants from the transport of goods and business travel.

\*\* Ozone-degradable substances in t CFC-11e.

## 2.2.2 Material Efficiency and Waste

### Material Efficient Increased

Materials Used	Materials Used by Weight in t	FY 2016/17	FY 2015/16	FY 2014/15
	<b>Total materials/raw materials used</b>	220,001	186,000	161,739
	Raw material	57,305	55,256	55,645
	Semifinished products	143,147	109,647	89,352
	Packaging	14,437	16,155	12,555
	Auxiliaries	5,111	4,941	4,186
	Renewable materials in %	6	9	10
	Secondary Raw Materials in %	38	41	50

Voith employs country-specific recycling factors to calculate the proportion of secondary raw materials in terms of the overall amount of materials used. The lower share compared to the previous year of secondary raw materials in terms of the overall amount of materials used is due to regional changes in materials procurement, whereby the recycling factors used have changed.

### Waste Volume Reduced



Volume of Waste	Waste by Region in %			
	Germany	39	37	37
	Europe excluding Germany	7	7	8
	Americas	32	35	38
	Asia	23	20	17
	Other	< 1	< 1	< 1
	<b>Reclaimed and Removed Waste by Method in t</b>			
	<b>Reclaimed waste</b>	20,890	24,951	27,709
	Reused	122	213	217
	Recycled	15,761	18,824	21,458
	Composted	185	176	179
	Recovered	4,230	4,927	4,487
	Other reclamation	592	810	1,368
	<b>Removed waste</b>	9,896	12,038	14,925
	Incinerated	2,885	2,467	2,610
	Dumped at an external site*	7,011	9,571	12,316
	Dumped at a company site	–	0	–
	Other removal	–	0	–
	<b>Total waste</b>	30,786	36,989	42,635

\* Alongside the type of waste, the locations also enter the manner of disposal in our database.

Waste Reduction Measures and Further Potentials	↻	<b>Reduction in Specific Waste Quantities</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>	
		Reduction in specific waste quantities in %	-16.3	-12.2	-9.1	
		<b>Specific Waste Weight</b>				
		Specific waste weight in t/€ millions revenues	7.3	8.7	9.9	
		In the reporting period numerous Voith locations also developed specific solutions to local waste challenges. Voith considers the most significant measures for this reporting year to include:				
		<ul style="list-style-type: none"> <li>• 420 t less waste by optimizing molds at our São Paulo, Brazil location</li> <li>• 180 t less hazardous waste thanks to improved coolant lubricant management in Wimpassing, Austria and Crailsheim</li> <li>• 90 t less waste by reducing the use of cleaning sprays at our Heidenheim location</li> </ul>				
		<b>Material Efficiency Potential in t</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>	
		<b>Efficiency Potential Since FY 2011/12</b>	6,044	5,975	8,661	
		of which achieved in the FY	640	2,383	1,073	
		savings already achieved since FY 2011/12	4,423	3,782	1,399	
<b>Reduction in Hazardous and Non-hazardous Waste</b>						
Hazardous Waste	↻	<b>Hazardous and Non-hazardous Waste in t</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>	
		Hazardous waste	5,816	6,898	8,652	
		transported hazardous waste	5,816	6,898	8,652	
		imported hazardous waste	-	-	-	
		exported hazardous waste	-	-	-	
		waste transported nationally and internationally between Voith locations	-	-	-	
		<b>Non-hazardous waste</b>	24,970	30,091	33,980	
		<b>Total waste</b>	30,786	36,989	42,632	
Waste Disposal	↻	The collection of hazardous waste at Voith is governed by internal regulations. Only qualified specialist waste disposal companies that adhere strictly to our regulations are permitted to dispose of our waste. Any violations are rigorously pursued and lead to the termination of the business relationship. To check this, we regularly audit the waste disposal companies we use. The scope of these audits includes inspections of the waste disposal companies' sites and related plants, as well as the collection and documentation of proof of disposal.				

## 2.2.3 Water

### Significant Drop in Freshwater Consumption

Water Consumption	 <b>Water Consumption by Source</b> in m <sup>3</sup>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	<b>Total water consumption</b>	1,042,539	1,057,398	1,406,104
	Surface water	1,572	10,486	12,465
	Groundwater	–	–	–
	<b>Freshwater</b>	1,040,967	1,046,912	1,393,639
	Surface water	67,507	79,932	90,431
	Groundwater	442,722	487,675	817,995
	Municipal water utility	530,738	479,306	485,213
	<b>Data-gathering:</b> Categories are gathered centrally each quarter by means of a data-gathering process at the locations.			
	<b>Water Consumption by Region</b> in %			
	Germany	39	41	55
	Europe excluding Germany	11	13	10
	Americas	20	21	18
	Asia	29	25	17
	Other	<1	<1	<1
	<b>Percentage and Total Volume of Reused Water</b>			
	Reused water in m <sup>3</sup>	104.2	116.1	131
	<b>Total water withdrawal</b>			
	Reused water in %	<1	<1	<1
	<b>Data-gathering:</b> Categories are gathered centrally by means of a data-gathering process at the locations.			
Freshwater Savings Measures and Further Potentials	 <b>Specific Freshwater Consumption</b> in m <sup>3</sup> /€ thousands revenues			
	Specific freshwater consumption	0.25	0.25	0.32
	The following savings were achieved, among others, in the reporting period:			
	<ul style="list-style-type: none"> <li>• Approx. 45,000 m<sup>3</sup> less freshwater consumed thanks to the optimization of a remanufacturing cleaning process at our Munich location</li> <li>• Approx. 25,000 m<sup>3</sup> less freshwater consumed thanks to the reuse of vacuum evaporation distillate for cleaning processes at our Kunshan, China location</li> <li>• 10,000 m<sup>3</sup> less cooling water use by optimizing a heat exchanger at our São Paulo, Brazil location</li> </ul>			
	<b>Freshwater Efficiency Potential</b> in 1,000 m <sup>3</sup>			
	Efficiency potential in planning since FY 2011/12	817	743	695
	of which additionally achieved in the FY	83	78	326
	savings already achieved since FY 2011/12	789	706	627
	<b>Note:</b> The savings achieved so far since FY 2011/12 are already above the volume of savings which Voith anticipates it needs to make to achieve its reduction goal in FY 2017/18.			

## Less Wastewater

Wastewater: By Method of Discharge	Wastewater by Method of Discharge	FY 2016/17	FY 2015/16	FY 2014/15
	<b>Total wastewater</b> in m <sup>3</sup>	914,569	985,880	1,212,974
	Discharged into the public sewage system in %	59	49	44
	Discharged into surface water in %	31	39	27
	Discharged into groundwater in %	10	13	29
	Reused at another company in %	< 1	< 1	< 1
	<b>Total treated wastewater</b> in m <sup>3</sup>	156,192	116,342	99,576
	Discharged into the public sewage system in %	69	59	59
	Discharged into surface water in %	30	37	37
	Discharged into groundwater in %	1	4	5
	Reused at another company in %	0	0	0
	<b>Total untreated wastewater</b> in m <sup>3</sup>	758,377	869,539	1,113,398
	Discharged into the public sewage system in %	57	47	43
	Discharged into surface water in %	31	39	26
	Discharged into groundwater in %	11	14	31
	Reused at another company in %	<1	0	0

Wastewater: Quality	Wastewater Quality* in t	FY 2016/17	FY 2015/16	FY 2014/15
	Biological oxygen demand (BOD)	7	25	13
	Chemical oxygen demand (COD)	20	37	40
	Total suspended matter content	7	6	8
	Heavy metals	< 1	< 1	< 1
	Nitrogen	2	< 1	< 1
	Phosphorus	< 1	< 1	< 1

Due in part to very long measurement intervals, there are significant fluctuations in the total footprint over the years. There were no notifiable limit violations in the reporting year.

\* The emissions in wastewater are based on the volume of wastewater streams from Voith locations subject to monitoring and the respective average of the measured concentrations.



Water and Neighboring Habitat Protection	Significant* Direct Wastewater Discharge in 2016/2017 in %	Location	Destination	Protection Status
	54% of wastewater is returned to the natural water cycle. The water was previously used for cooling purposes. The discharged water is subject to strict observation, as the location is in a water protection zone.	Heidenheim	River Brenz	Water protection area acc. to WRRL, WHG (§§ 50–53), Zone III/IIIA (Zone II/IIA TB Mergelstetten, not yet final)
	11% of wastewater is returned to the natural water cycle.	Garching	Groundwater	–
	95% of wastewater is returned to the natural water cycle. The water was previously used for cooling purposes.	Högsjö (Sweden)	Lake Högsjö	–
	100% of wastewater is returned to the natural water cycle.	Noida (India)	Yamuna River	–
	100% of wastewater is returned to the natural water cycle. We have purification equipment locally with which the water is treated for discharge. The location is adjacent to a water protection zone.	São Paulo (Brazil)	Perus River	Permanent Protection Area (APP), national law (Brazil)
	39% of cooling water is returned to the Schwarza.	Wimpassing (Austria)	River Schwarza	–

Sealing of Soil Surfaces	To counter the progressive sealing of soil surfaces we pay particular attention to this development in our sphere of influence.
	Annual reporting from location through to Group level on sealed soil surfaces vs. overall surface area showed no change in the reporting year at 50% (based on the total area of Voith locations).

Environmental Incidents	Environmental Incidents (Pollution of Soil, Water, etc.) Number	FY 2016/17	FY 2015/16	FY 2014/15
	Product and warehousing incidents	38	40	36
	Transport accidents: road, rail, inland waterway, sea	n.r.	n.r.	n.r.

\* "Significant" is considered to be wastewater discharged to surface water and to groundwater that exceeds 5% of the total wastewater volume of the observed unit.

## 3 Employees

### 3.1 Our Aspiration – Our Responsibility

Workforce Structure	Consolidation Scope for Employee Numbers* Number	FY 2016/17	FY 2015/16	FY 2014/15
	Employees Group-wide in FTE	19,045	19,098	20,223
	Employees Group-wide as a headcount	19,267	19,494	20,981
	Employees included in data analysis	19,267	19,494	20,981
	<b>Employees by Gender, Age Group, and Region** Number</b>			
	<b>Voith Group</b>	19,267	19,494	20,981
	<b>Gender</b>			
	Women	3,415	3,388	3,680
	Men	15,852	16,106	17,301
	<b>Age</b>			
	< 30 years	2,517	2,689	3,142
	30–50 years	10,714	10,948	11,599
	> 50 years	6,036	5,857	6,240
	<b>Origin</b>			
	German	7,306	7,240	n.d.
	non-German	11,961	12,254	n.d.
	<b>Regions</b>			
	Germany	7,669	7,563	8,335
	Europe excluding Germany	2,879	2,921	3,221
	Americas	4,748	5,050	5,243
	Asia	3,286	3,269	3,484
	Other	685	691	698

\* Unlike in the Annual Report, employee figures in the Sustainability Report are represented by headcount, rather than by FTEs (full-time equivalents). The Group companies, as per the Annual Report, are reported on in FY 2016/17.

\*\* Due to part-time work the regional distribution in headcount and FTE (full time equivalents) is different to the Annual Report.

Workforce by Employment Type	↻	Full-time and Part-time Employees by Age and Gender Number			
		FY 2016/17	FY 2015/16	FY 2014/15	
		<b>Full-time</b>	18,323	18,330	19,662
		Women	2,748	2,686	2,888
		Men	15,575	15,644	16,774
		< 30 years	2,456	2,580	2,996
		30–50 years	10,199	10,279	10,846
		> 50 years	5,668	5,471	5,820
		<b>Part-time</b>	944	1,164	1,319
		Women	667	702	792
		Men	277	462	527
		< 30 years	61	109	146
		30–50 years	515	669	753
		> 50 years	368	386	420
		<b>Employees with Temporary and Permanent Employment Contracts by Gender Number</b>			
		<b>Permanent employment contract</b>	17,360	17,507	18,506
		Women	2,977	2,963	3,154
		Men	14,383	14,544	15,352
		<b>Temporary employment contract</b>	1,907	1,987	2,475
		Women	438	425	526
		Men	1,469	1,562	1,949
		<b>Temporary employees</b>	949	847	776
		Women	176	157	127
		Men	773	690	649
		<b>Total Workforce by Employees and Supervised Workers by Gender Number</b>			
		<b>Employees/workers</b>	19,267	19,494	20,981
		Women	3,415	3,388	3,680
		Men	15,852	16,106	17,301
		<b>Supervised workers</b>	949	847	776
		Women	176	157	127
		Men	773	690	649

To respond quickly and flexibly in our somewhat volatile markets, Voith also utilizes fixed-term or temporary employment contracts. In the reporting year Voith employed 949 staff through recruitment agencies. In the reporting year, the number of fixed-term employment contracts decreased by 4% to 1,907.

### 3.2 Attractive Employer

Rankings and Ratings ↪ In autumn 2017 Voith performed impressively in the DEUTSCHLAND TEST, trendence studies, and the Universum-Institut studies as an employer that offers outstanding career opportunities.

- DEUTSCHLAND TEST: In the study, which comprises 2,000 companies from 59 industries, Voith received the Top Career Opportunities award in the mechanical engineering category.
- trendence Institute: Voith featured in two categories at the same time in the trendence study of Germany's top 100 companies. In the Young Professionals Barometer, a survey of young professionals with up to a decade of professional experience, Voith secured 64th place. In the trendence Graduate Barometer, Voith ranked 91st in the Engineering category, once again making us one of the industry's most attractive employers.
- This ranking includes the results of a survey of 24,000 engineering students from 107 German universities. In 2017 Voith was ranked 77th among all German employers mentioned.

Employee Wages and Benefits	Employee Wages and Benefits in € millions	FY 2016/17	FY 2015/16	FY 2014/15
	Wages and salaries	1,165	1,154	1,188
	Social security contributions, retirement pensions, and benefits	250.6	246.8	245.7
	Remuneration of the Corporate Board of Management	n.d.	n.d.	n.d.

Please see the chapter "Remuneration of governing bodies" in our latest Annual Report for information on the compensation of our Corporate Board of Management.

#### Upholding Employee Rights Globally

Collective Bargaining Agreements	Collective Bargaining Agreements in %			
	Number of employees covered by collective bargaining agreements	77	77	74
	In Germany	100	100	97

Upholding Employee Rights ↪ Local employee representatives are involved in discussions between Group management, employees, and local HR departments. Within the individual countries, relationships are structured in accordance with national laws, collective wage agreements and company agreements. Our compliance processes ensure that agreements are also upheld. Our Corporate Board of Management or the local management team communicate fundamental changes to employees at all our sites in a timely manner. Within this, we strive to inform employees as early as possible via a number of communication channels, especially the intranet, video and telephone conferencing, notice boards, employee magazines, and other employee media.

In Germany, the decision-making process is subject to co-determination if fundamental changes are made to the company. Implementation of the measures that have been taken is supported by the respective locations' Works Councils.

#### Diversity and Equal Opportunities

Employment Ratio of People with Disabilities	Employment Ratio of People with Disabilities in %			
	Employment ratio of people with disabilities	3.4	3.3	3.8

Diversity in the Management Team and in the Workforce	<b>Diversity in Senior Management Circle</b> Number	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Senior Management Circle*	77	76	82
	Proportion of women in %	5.2	6.6	7.3
	Non-German members in %	35.1	35.5	31.7
	<b>Distribution of Women and Men at Management Levels</b> Number			
	<b>Corporate Board of Management, Executive Team, Senior Management Circle*</b>	84	82	88
	Proportion of women in %	4.8	6.1	6.8
	Non-German members in %	33.3	34.1	29.5
	<b>Regional directors/chairpersons, Management Board of operating units, heads of product groups, managers in Group management functions**</b>	367	361	372
	Proportion of women in %	7.6	8.9	8.1
	Non-German members in %	50.7	51.8	53.5
	<b>Mid- and lower-level management***</b>	715	711	763
	Proportion of women in %	10.6	10.1	10.4
	Non-German members in %	60.1	60.1	58.8
	<b>Total (across all management levels)</b>	1,166	1,154	1,223
	Proportion of women in %	9.3	9.4	9.4
	Non-German members in %	55.2	55.6	55.1
	Various nationalities	88	91	96

## Bringing Balance to Work and Family Life


Flexible Working Time Models	<b>Flexible Working Time Models</b>			
	<b>Availability of Flexible Working Time Models</b> Number			
	<b>Definition/Explanation:</b> Share of employees to whom variable working time models are available (e.g. flexitime, bank or reduce accrued overtime, sabbatical)			
	<b>Voith Group</b>	7,669	7,563	n.r.
	Women	1,383	1,326	n.r.
	Men	6,286	6,237	n.r.
	< 30 years	916	888	n.r.
	30–50 years	3,909	3,918	n.r.
	> 50 years	2,844	2,757	n.r.

This data relates to Germany; at Voith it is possible to arrange individual working time models with one's supervisor. This also applies to sabbaticals.

\* management levels 1 + 2

\*\* management levels 3 + 4

\*\*\* management level 5

Parental Leave 	Parental Leave Number	FY 2016/17	FY 2015/16	FY 2014/15
<b>Employees Entitled to Parental Leave</b>				
<b>Voith Group</b>		19,074	19,184	17,231
Women		3,390	3,312	2,825
Men		15,684	15,872	14,406
<b>Total Parental Leave Take-up</b>				
<b>Voith Group</b>		668	731	304
Women		139	151	61
Men		529	580	243
Germany		436	429	284
Europe excluding Germany		39	52	16
Americas		190	247	3
Asia		3	1	1
Other		0	2	0
<b>Employees Who Returned to Voith After Parental Leave</b>				
<b>Voith Group</b>		578	565	299
Women		112	91	57
Men		466	474	242
<b>Employees Who Returned to Voith After Parental Leave Who Are Still at Voith 12 Months after Returning</b>				
<b>Voith Group</b>		351	396	214
Women		63	77	38
Men		288	319	176
<b>Return-to-work Rate in %</b>				
<b>Voith Group</b>		79.1	77	98
Women		74.2	60	93
Men		80.3	82	100
<b>Retention Rate Among Employees Who Took Parental Leave in %</b>				
<b>Voith Group</b>		62.1	70	72
Women		69.2	85	67
Men		60.8	67	73

Employee Satisfaction

Employment Length	Average Employment Length by Region in years	FY 2016/17	FY 2015/16	FY 2014/15
	<b>Voith Group</b>	12.39	12.18	12.47
	Germany	16.19	16.22	16.66
	Europe excluding Germany	12.41	11.96	12.49
	Americas	10.35	10.15	10.49
	Asia	7.27	6.93	6.52
	Other	8.33	8.58	8.24
	<b>New Employee Hires Who Left Voith within Twelve Months by Gender, Age Group, and Region Number</b>			
	<b>Voith Group</b>	305	326	386
	Women	57	72	73
	Men	248	254	313
	< 30 years	120	132	182
	30–50 years	147	152	157
	> 50 years	38	42	47
	Germany	36	71	39
	Europe excluding Germany	36	43	30
	Americas	165	142	219
	Asia	61	66	97
	Other	7	4	1

Workforce  
Fluctuation



**Employees Who Left the Company by Gender, Age Group, and Region (Workforce Fluctuation) Number**

**FY 2016/17      FY 2015/16      FY 2014/15**

<b>Voith Group</b>	2,127	2,665	2,655
Women	324	524	505
Men	1,803	2,141	2,150
< 30 years	454	504	638
30–50 years	1,051	1,233	1,230
> 50 years	622	928	787
Germany	393	933	684
Europe excluding Germany	250	433	398
Americas	1,079	784	1,015
Asia	328	446	500
Other	77	69	58

**Employees Who Left the Company by Gender, Age Group, and Region (Workforce Fluctuation) in %**

<b>Voith Group</b>	11.0	13.2	12.5
Women	9.5	14.9	13.1
Men	11.4	12.9	12.4
< 30 years	17.7	17.3	19.3
30–50 years	9.7	11.0	10.3
> 50 years	10.5	15.4	13.0
Germany	5.2	11.9	8.1
Europe excluding Germany	8.6	14.3	11.3
Americas	22.4	15.0	18.7
Asia	10.0	13.3	15.2
Other	11.3	9.9	8.2

**Employees who Left the Company on Own Initiative\* in %**

<b>Voith Group</b>	11.0	13.2	12.5
At the employee's initiative	6.3	3.5	4.0
At the employer's initiative	3.7	7.2	7.0
Other	1.1	2.5	1.5

\* FY 2014/15 adjusted: Consolidated companies only.



## 3.3 Attracting and Promoting Talent

New Hirings		FY 2016/17	FY 2015/16	FY 2014/15
	<b>New Employee Hires by Gender, Age Group, and Region Number</b>			
	<b>Voith Group</b>	1,603	1,287	1,544
	Women	283	264	279
	Men	1,320	1,023	1,265
	< 30 years	537	481	619
	30–50 years	813	650	731
	> 50 years	253	156	194
	Germany	283	166	229
	Europe excluding Germany	174	175	205
	Americas	758	657	683
	Asia	324	226	384
	Other	64	63	43
	<b>New Employee Hires by Gender, Age Group, and Region in %</b>			
	<b>Voith Group</b>	8.3	6.6	7.4
	Women	8.3	7.8	7.6
	Men	8.3	6.4	7.3
	< 30 years	21.3	17.9	19.7
	30–50 years	7.6	5.9	6.3
	> 50 years	4.2	2.7	3.1
	Germany	3.7	2.2	2.7
	Europe excluding Germany	6.0	6.0	6.4
	Americas	16.0	13.0	13.0
	Asia	9.9	6.9	11.0
	Other	9.3	9.1	6.2
Apprentice- ships and Opportunities	<b>Vocational Training Number</b>			
	Apprentices and students at cooperative universities	959	1,012	889
	in Germany	599	606	827
	at our Heidenheim location	360	358	406
	In the 2016/17 fiscal year, several of our apprentices completed an Energy Scout training course at the Chamber of Industry and Commerce IHK Ostwürttemberg.			
	In the 2016/17 fiscal year we launched the Social Internship – a new element of our vocational training activities, where all apprentices in their second year of training spend one week working at a sheltered workshop for the disabled.			

Training and Education & Career Development	↻	<b>Training and Education Expenditure</b>			
		Number	FY 2016/17	FY 2015/16	FY 2014/15
		Training and Further Education Hours	320,324	244,604	171,991
		Women	63,150	41,243	27,163
		Men	257,174	203,361	144,828
		< 30 years	48,296	61,118	n.d.
		30–50 years	206,913	154,598	n.d.
		> 50 years	65,115	28,888	n.d.
		The Corporate Board of Management, Executive Team, Senior Management Circle; Regional Directors/Chairpersons, Board of Management of operating units, heads of product groups, managers in Group management functions	14,335	11,326	9,728
		Mid- and lower-level management	34,107	18,720	19,384
		All other employees	271,882	214,557	142,879
		<b>Hours of Further Education by Employee</b>			
		<b>Voith Group</b>	16.6	12.5	8.2
		Women	18.5	12.2	7.4
		Men	16.2	12.6	8.4
		<b>Employees Who Underwent Further Training</b> Number			
		<b>Voith Group</b>	15,645	15,829	14,505
		<b>Total Expenditure in €</b>			
		Voith Group	5,723,508	4,413,721	2,998,737
		<b>Employees Who Received Performance and Career Development Reviews* in %</b>			
		<b>Voith Group</b>	82.7	86.9	82.9
		Women	83.1	83.9	79.6
		Men	82.6	87.6	83.6
		The Corporate Board of Management, Executive Team, Senior Management Circle; Regional Directors/Chairpersons, Board of Management of operating units, heads of product groups, managers in Group management functions	84.5	83.5	96.2
		Mid- and lower-level management	87.7	86.2	96.1
		All other employees	82.4	87.2	82.0

## 3.4 Occupational Health and Safety

Employee Representation in Committees	Total Number of Employees* Represented on Health and Safety Management Worker Committees* in %	FY 2016/17	FY 2015/16	FY 2014/15
	<b>Voith Group</b>	75	75	75

### 3.4.1 Occupational Safety

Training Courses in Occupational Safety	Training Courses in Occupational Safety in %			
	Operations managers	approx. 100	approx. 100	approx. 100
	Administrative managers	80	80	80
	Trained service providers	n.r.	n.r.	n.r.

### Documenting, Analyzing and Preventing Accidents

Work accidents	Work Accidents Number			
	<b>Voith Group</b>	50	57	57
	Germany	37	37	30
	Europe excluding Germany	6	12	7
	Americas	7	1	14
	Asia	0	6	6
	Other	0	1	0

#### Occupational Accidents Resulting in Fatalities

Work accidents resulting in fatalities	0	0	0
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#### Frequency Rate

**Definition/Explanation:** Number of occupational accidents resulting in downtime (1 day or more) per 1 million working hours

<b>Voith Group</b>	1.4	1.6	1.5
Germany	2.4	2.6	1.8
Europe excluding Germany	1.3	2.4	1.4
Americas	0.8	0.1	1.4
Asia	0.0	0.8	0.7
Other	0.0	3.5	0.0

#### Severity Rate

**Definition/Explanation:** Hours lost per 1 million working hours

<b>Voith Group</b>	271.2	282.4	275.7
Germany	306.3	349.1	156.8
Europe excluding Germany	217.0	479.2	390.6
Americas	159.5	0.8	285.4
Asia	391.9	396.7	397.1
Other	0.0	42.1	0.0

\* Based on headcount

Work accidents  
(continued)

**Absence Rate in %**

**Definition/Explanation:** Refers to the actual days of employee absence, expressed as a percentage of the overall scheduled working days for the workforce over the same period.

<b>Voith Group</b>	2.5	3.1	3.0
Germany	3.8	4.9	4.2
Europe excluding Germany	3.2	3.1	3.4
Americas	1.6	2.2	2.4
Asia	1.1	1.2	1.0
Other	1.2	1.6	1.4

## 4 Responsibility for Products and Supply Chains

### 4.1 Product Responsibility

#### 4.1.1 Management Approach

##### Research & Development

Research & Development Expenditure	Research & Development in € millions	FY 2016/17	FY 2015/16	FY 2014/15
	R&D Expenditure	224	208	210
	Revenues Dedicated to R&D in %	5.3	4.9	4.9

**CTO Organization** ↻ We established the function of Chief Technology Officer in each of our divisions back in the 2014/15 fiscal year. Since then, the CTOs have regularly compared their divisions' technological development roadmaps within the CTO Council to leverage synergies. By doing so, we intend to achieve positive economies of scale as well as create knowledge in a more structured way, and distribute it within our Group, particularly in the case of technologies and processes that can be implemented universally, such as in the area of materials use.

##### Current Developments in the Group Divisions

**Voith Paper** ↻ Voith Paper already offers automated monitoring systems with its OnCare product family, which it is expanding constantly. In doing so Voith Paper follows two approaches: On the one hand it focuses on developing sensors that record operating data directly, enabling the condition of components or the entire product to be evaluated. On the other hand, Big Data management, meaning the targeted analysis of the data obtained, provides another approach to assess the condition. This involves assigning components to a process application and saving operating data in a database. By linking a wide variety of data sets a report can be given on the product condition, triggering the momentum to find a potential solution to the problem.

**Voith Turbo** ↻ Together with Fuglesangs, Voith Turbo is working on developing speed-controllable drives to operate sea-floor multiphase pumps. This dispenses with the need for a frequency converter to control the speed, which would otherwise take up a lot of space on the supply ship. The technology is making a considerable contribution to exploration for raw materials beneath the sea floor.

Voith Turbo sees good growth opportunities for the coming years in the heavy goods vehicle (HGV) sector – the main market for Voith retarders. While the switchover to electric powertrains is not expected to cause a significant change in the retarder business from 2030 onwards, some form of independent retarder will still be necessary.

A significant proportion of city buses will be battery-powered from 2025, so Voith Turbo is gradually expanding its R&D activities in the direction of electromobility. Bridging technologies such as DIWA E-Volution with crankshaft starter generators will be essential. Diesel engines will continue to play a significant role, in conjunction with alternative fuels and downsizing. In this regard Voith is well equipped to face coming combustion engine developments with its new generation of transmissions and their mild hybridization.

**Voith Hydro** ↻ The development of sensors is seen as a prerequisite for further networking. This results in opportunities to learn and respond faster and also achieves the aim of realizing an intelligent digital power plant. Through this, customers enjoy specific advantages such as even safer operation in a broader operating spectrum as well as condition-based maintenance and, as a result, higher electricity production availability.

The new corona-shielding technology process for high-voltage bars allows application of the entire insulation system even before impregnation and curing, increasing robustness in production. This technology was designed for generator voltages up to 25 kV, and will be used as standard for other major projects.

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## Collaborations Deliver Key Findings on Future Viability

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### Voith Paper Collaborative Projects

Since its launch in 2015, Voith Paper has been involved in the industry-wide “Fibres & Paper 2030 – Shaping a Sustainable Future” project, which is coordinated by the German paper-technology foundation PTS. During the project’s 15-month timeframe, a scenario analysis was produced which addressed future business fields and customer requirements for fiber-based materials.

Furthermore, Voith Paper, together with some 30 other paper-industry customers and suppliers, is part of a pre-competitive cluster being developed by the CEPI (Confederation of European Paper Industries). The project centers around the use of DES (deep eutectic solvents), which are used to dissolve fibrous materials to produce pulp with minimal energy, emissions, and residues. In accordance with the CEPI roadmap, the aim is to achieve an 80% reduction in CO<sub>2</sub> emissions and increase value in the sector by 50%.

As part of the Provides project, Voith Paper is currently conducting a preliminary study on the construction of a pilot system. The plan is to operate this system at the CTP (Pulp and Paper Research & Technical Center) in Grenoble and further develop the technology there as part of a follow-on project. At the end of the 2016/17 fiscal year the research partners made significant progress in developing the technology.

The publicly funded Copernicus program was launched on September 1, 2016, with the aim of making better use of fluctuations in the availability and price of electrical energy as part of the expansion of renewable electricity generation in Germany and Europe. In collaboration with several key customers, Voith Paper assessed the potentials in this area, and initial product ideas have already been derived for load control and distribution that will be further developed together with the customers.

### Voith Hydro Collaborative Projects

Voith Hydro and the China Three Gorges Corporation signed a strategic cooperation agreement in the reporting year. This agreement covers the continuation and strengthening of cooperation between the two companies in Africa, and describes the plan to jointly promote the strategy of sustainable hydropower development, economic growth, and social progress.

The Hyperbole research project was completed successfully. This resulted in a unique comparison of measurement data from the dynamic behavior of the Francis turbine on the detailed prototype, reduced-scale physical model, and numerical dynamic models for different operating regimes. The insights gained will contribute to optimizing the design of turbines with an extended operating range (<https://hyperbole.epfl.ch>).

Voith Hydro and the University of Stuttgart are collaborating in a variety of ways including to improve numerical methods for the calculation of flow in water turbines, and to develop cutting-edge methods to detect cavitation in hydropower machinery.



### Voith Turbo Collaborative Projects

The research project on sensors for composites focuses on gathering data on vehicle damage resulting from external influences and/or material fatigue, with the aim of increasing operational safety as well as reducing construction weight.

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## Customer Dialog

Customer Dialog	 <p>Good ideas are no coincidence. That is why the newly founded Voith Innovation Lab, together with the Group Divisions, is driving innovation and new business opportunities. For this purpose, the center relies on creative methods such as design thinking and also offers corresponding training for employees from all hierarchical levels. Over the current financial year, more than 200 employees will be trained in the method and learn how to use design thinking in their daily work. The aim is to understand problems from the customer's point of view, to focus clearly and to reach customer-oriented solutions more quickly and purposefully.</p>
Voith Paper	<p>Voith Paper employs the Net Promoter Score (NPS) methodology to measure customer satisfaction. Customer feedback is gathered at various fixed times during the course of project implementation, whereby specific questions are asked about the phases of development, which take into account both emotive and rational evaluation criteria. Measures to improve internal procedures are then derived from this customer feedback.</p>
Voith Hydro	<p>Voith Hydro's customer requirements are often reflected in great detail in individual tenders. Furthermore, in the subsequent negotiations the technical as well as new or further optimized solutions are discussed at length. Last but not least, the Product Management team holds discussions with customers and associations to examine further improvements.</p> <p>The aim is to maintain constant dialog with customers regarding developments in the business environments to develop new business opportunities as and when necessary. For example, in the reporting year plant reliability was further increased thanks to a modified maintenance strategy that is integrated optimally into the customer's business environment. Through Remote Diagnostics &amp; Collaboration Voith Hydro can also access the hydropower plant's automation and control system, enabling it – with the customer's consent – to resolve issues quickly and directly without needing to go through the costly and time-consuming process of deploying a service engineer on site.</p> <p>Last but not least, by engaging in dialog with customers Voith Hydro has realized that the increased use of wind farms and solar power plants is making electricity generation more volatile. This opens up possibilities for hydropower plants to be additionally used to stabilize the grid. Optimization of the automatic start-up system by Voith Hydro allows a hydropower plant to feed all of its power to the grid within a much shorter time than is normally possible.</p>
Responsible Marketing	 <p>Corporate Marketing and our Code of Conduct, which every Voith employee abides by, ensure Voith products are presented to customers truthfully and transparently. The actions of each and every Voith employee are bound by the unwavering principle that information should be presented fairly and truthfully. We provide regular instruction on the scope of our Code of Conduct through online training sessions (including compliance training sessions) and in employee appraisals.</p> <p>Moreover, Voith Paper's marketing approach ensures that technically complex solutions are presented by selected experts from our R&amp;D centers (York, Heidenheim, Västerås, Shanghai), and discussed with customers. If necessary, the marketing activity is supported by the Group Division's, or even the holding's, top management team. Internal coordination meetings ensure that global knowledge is bundled in relevant projects.</p>

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#### 4.1.2 Reliable and Safe Products

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TRQM	 Our TRQM system also defines how to fulfill the respective statutory product documentation requirements, and how products are to be labeled. Besides internal technical documentation, operating instructions provide information on the intended use of our products as well as on how to handle them in a technically and environmentally safe way. Our TRQM system also outlines procedures for decisions that entail risks.
Quality Management in Our Business Areas	 <p>Through its internal management system, Voith Hydro ensures that quality standards and certificates are uniform for all units globally. All of Voith Hydro's locations are certified according to the ISO 9001 international quality management standard. Regardless of the operating location, the European standard applies at all times as the minimum standard for machine and plant safety. Through active product monitoring of the installed machines, Voith Hydro also ensures that new findings gained from operation are incorporated into machine optimization.</p> <p>With its EPEX (Excellence in Project Execution) project, since the 2014/15 fiscal year Voith Hydro has aimed to achieve excellence in executing projects. EPEX focuses on process and product standardization as well as on strengthening customer focus.</p> <p>As KPIs Voith Hydro uses our internal GPS Standards for turbines and generators and their auxiliary systems, which we developed internally and which are based on our own extensive experience as well as harmonized standards.</p> <p>In the reporting year the Owner Quality module was established as part of the project. All internal and external inspection and test plans have been revised, and now reflect current market requirements.</p> <p>Moreover, several major successes have been achieved during project implementation in the reporting period. Among them, many pilot projects are already up and running according to the new standards. Furthermore, numerous employees have been trained in accordance with the train-the-trainer model.</p> <p>In addition, as part of the continual development of Voith Hydro's quality management system, a special fault-classification code was developed and implemented in the SAP fault documentation system in the reporting year. Now, according to the Pareto principle, fault clusters can be calculated and displayed at the press of a button. On the basis of this, the various functional units in the company are now regularly asked to initiate targeted improvement measures.</p> <p>Voith Paper sees quality as a key differentiator that distinguishes it from the competition, and has anchored the subject at the top management level. The bases of the Voith Paper quality management system are set out in Group Directives, process descriptions, and work instructions. Necessary reviews and corresponding documentation are controlled mainly via the internal ERP (enterprise resource planning) systems. Potential health, safety, and environment impacts are taken fully into consideration. To continuously improve the processes, Voith Paper uses various tools such as Ishikawa, FMEA (failure mode effect analysis), and 8D reports.</p> <p>Voith Turbo maintains a uniform and comprehensive quality management system, which is also certified to ISO 9001. All employees are trained on quality issues and consistently implement this system. Several quality programs are currently running at Voith Turbo to increase the reliability of its products even further. At the same time, Voith Turbo seeks a close relationship with customers to allow their experience of daily system operation to be incorporated into further product development.</p>
Voith HydroSchool	 Voith Hydro is faced with a particular challenge, as the long operating life of hydroelectric power plants requires several generations of employees to be trained on existing technology to ensure optimal operation and maintenance of the plants. The Voith HydroSchool takes these requirements into account through targeted training courses.

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## Voith Paper

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Progress  
Regarding  
Social and  
Environmental  
Impacts

↪ With the progressive digitization of the manufacturing processes involved in paper production, through Papermaking 4.0 Voith Paper offers next-level solutions that are perfectly tailored to address customers' biggest issues. Here, agile methods are used to offer compelling solutions quickly. As part of Papermaking 4.0, in the reporting year two customers installed special rollers that allow condition and process measurement data to be gathered directly and used for a range of purposes including for maintenance.

In addition, Voith Paper developed the first VR applications for customer training and support. Based on the standardized installation space models, Voith Paper developed initial prototypes that are now being further developed with customers. These pioneering technologies allow products and machinery to be experienced in a completely new way – even before a machine has been built.

Refiner fillings made of a special steel alloy are used in fiber treatment. As these are consumables, Voith Paper customers can return the fillings, which are then reused in a further stage of casting production – thereby closing the recycling loop. Voith Paper Fabric & Roll Systems has extensively tested and investigated the recycling of PPS-based clothing used in paper machines. However, as this is currently not feasible owing to the current cost situation and technically uncontrollable ancillary constraints, the focus was shifted to the recycling of other plastic-based production waste. The options here are currently being examined extensively.

Significant effort particularly in China is being put into improving the cleaning of wastewater from paper factories. Together with the Voith subsidiary Meri Environmental Solutions, Voith has won multiple orders for water treatment plants in China, enabling it to gain a foothold in China with Meri and successfully provide Smart Loop technology to treat water.

Recycling in  
Detail

↪ The loss of large amounts of graphic paper such as newspapers and magazines means that fewer fibers, which are often only used once, are introduced into the recycling loop. In turn, this reduces the strength potential of the used-paper mix. This relationship represents a specific challenge for Voith Paper, so it is working on new solutions to improve the strength potential of fibers before further processing. This is an important contribution to maintaining the recycling loop.

As a specific example of this, in felt production pure polyamide fibers are reused as standard in the production process. In the Business Line Fabric & Roll Systems, polyphenylene sulfide (PPS) is recycled and used to produce PPS yarns. The plastic is produced as a byproduct of dryer fabric production.

At Voith, we use KPIs to depict and monitor the recycling rate: The percentage share of recycled PPS yarn and recycled internal waste in relation to total waste represent two important KPIs in this regard.

The further development of sorter screen baskets has optimized fiber fractionation, enabling long and short fiber flows to be selectively separated and the final strength of the paper web to be controlled in a targeted manner by adjusting the fraction mixing ratio.

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## Voith Hydro

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Progress  
Regarding  
Social and  
Environmental  
Impacts

↻ In the reporting period Voith Hydro began development, planning, and construction work on the refurbishment of the pumped storage power plant in Ffestiniog, North Wales. Once completed at the start of 2020, the complex will be able to respond more quickly to grid power demand and operate across a greater range. In addition, as the initial machine units are being refurbished mid-life this will extend their operational lifespan for at least a further 20 years. Ffestiniog's four generating units will achieve a combined output of 360 MW of electricity – enough to cover all of North Wales' electricity needs for several hours.

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As part of tendering for the Chang Long Shan pumped storage power plant in China, we successfully developed machine units that combine high capacity (357 MW) with a fast rotational speed (600 rpm) in the smallest of spaces. Compared to competitors' offerings, the machines we developed offer not only higher hydraulic efficiency but also a smaller diameter – representing better value for money.

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In the reporting period the Mount Coffee hydropower plant in Liberia resumed operation after extensive refurbishment. For the power plant, which has an installed capacity of 88 MW and supplies clean electricity to over a million people, Voith Hydro supplied new Francis turbines, generators, the control technology, and the electrical and mechanical power plant equipment. In doing so, Voith Hydro has made a significant contribution to ensuring the population and industry receive a reliable and stable electricity supply – a key prerequisite for improving living conditions.

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In collaboration with the Technical University of Munich, Voith Hydro developed an eco-friendly solution for the "Alte Bleiche" small hydropower plant. It takes the form of a shaft power plant, where a StreamDiver turbine-generator unit is installed in a concrete chamber in the riverbed. The power plant, which was constructed on our factory premises in Heidenheim, generates no noise emissions and has minimum impact on the landscape. As a compact, oil-free submersible turbine, the StreamDiver makes it possible to achieve a standardized, cost-efficient plant design that minimizes environmental impacts during the installation phase.

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## Voith Turbo

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Progress  
Regarding  
Social and  
Environmental  
Impacts



### VoreconNX

In the redesigned VoreconNX a new transformer in the power splitter allows the second planetary gear to be replaced by a single gear stage, enabling the Vorecon to be designed in a modular way. The advanced design of the remaining planetary gear offers a very high power density, making it around 7% more efficient across the complete operating range than its predecessor. This means the new VoreconNX saves energy, is more compact and lightweight, and increases process reliability in production thanks to its modular design. The product was launched in the reporting period.

### VECO-Drive

The VECO-Drive is an electrical superimposing gear based on the tried-and-tested principle of the Voith VoreconNX variable speed planetary gear that has proven itself in over 600 installations. The VECO-Drive combines a mechanical planetary gear with frequency-controlled servo motors. The electrical superimposing gear is the most efficient way to make speed variable, with servo motors driving a planetary gear. Since only a small amount of rated power is needed, an overall component efficiency of greater than 97 percent is achieved, saving valuable energy and reducing operating expenditure – day after day.

### RailPack

The diesel-electric RailPack for rail vehicles increases resource utilization and passenger transportation efficiency. In addition to the power supply via the overhead lines, the RailPack is integrated into the vehicle allowing trains to be operated on rail networks which include electrified, partly electrified, and non-electrified track sections. This means there is no need to operate a diesel locomotive to serve non-electrified sections, dispensing with the time-consuming process of uncoupling and recoupling wagons. Passengers also benefit as they no longer need to change trains or wait for the switchover from the electrified to the non-electrified sections.

### City Buses

Thanks to our collaboration with selected partners, our own know-how, and manufacturing capabilities for traction and auxiliary converters as well as ancillary components such as compressors, we are able to supply a complete powertrain for city buses from a single source.

The presentation of the Voith E-Drive System for city buses marked a continuation of Voith Turbo's decades of activities in the field of hybrid and electric drive technology. The operating data and immense experience gained from DIWA bus transmissions and retarders play a key role in this regard. Voith Digital Solutions is driving forward digitization and connectivity, with fleet management and predictive maintenance tools increasingly finding their way into Voith products thereby constantly enhancing them. This enables us to offer the best drive solution to each customer.

Challenge:  
Long Service  
Life



In the reporting period Voith Turbo developed an obsolescence management system, which identifies, manages, and controls the natural and artificial aging or non-availability of a product, not least from an innovation viewpoint. To give an example, Voith Turbo offers a system for use in buses that allows driveline monitoring over the entire lifecycle. The bus operator is informed automatically of any impending malfunctions, which in turn improves operational reliability and almost completely rules out spontaneous vehicle failures.

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## 4.2 Responsibility for Supply Chains

### Capable Organization

Use of Conflict Minerals	<p>The EU has still not clearly defined its position on the US's Dodd-Frank Act concerning the use of conflict minerals. In addition to a current amendment to EU legislation, it remains to be seen whether the US government, which has been in office since 2017, will revise or abolish the Dodd-Frank Act. To prepare in good time for the new regulations, in the 2013/14 fiscal year we established a working group consisting of representatives from Purchasing, the Legal Department, and the central function Corporate Sustainability. The aim is to record and evaluate all information centrally, including related customer inquiries, and prepare action recommendations for Voith.</p> <p>In the reporting period at Voith Turbo a Quality team responsible for material compliance started its work. Its duties also include the use and recording of conflict minerals in our products.</p>
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### International Environment with Fairness as the Guiding Principle

Procurement Markets	<b>Regional distribution in % of Invoice Volume</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Europe	56	61	62
	Americas	23	23	22
	Asia	20	15	15
	Other	1	1	1

### Clear Conditions Set the Framework

Country-specific GPCs	<b>Country-specific GPCs</b>			
	Country-specific GPCs	26	21	21
	of which new	5	none	3
	of which updated	all	none	none

### Employees Receive Extensive Training

Scope of Training	<b>Training of Purchasing employees globally</b> Number			
	Purchasing employees globally	528	520	n.d.
	Trained Purchasing employees globally	528	520	n.d.
	Hours of training of Purchasing employees (Purchasing Training Program)	3,629	5,128	n.d.
	Hours of training of Purchasing employees	12,022	n.d.	n.d.

### Supplier Self-assessment and Evaluation

Supplier Self-Assessment	<b>Suppliers Who Have Filled Out a Self-assessment*</b> Number			
	Compliance & Sustainability Check out of Initial Supplier Self-assessment	2,547	n.d.	n.d.
	Initial Supplier Self-assessment	n.d.	2,430	2,156
	Share of the invoice volume obtained from suppliers for whom there is a valid Compliance & Sustainability Check available in %	55.0	n.d.	n.d.
	Supplier Self-assessment Ratio (share of the invoice volume obtained from suppliers for whom there is a valid Self-assessment) in %	n.d.	59.2	61.7

\* Owing to the system migration, in FY 2016/17 no new assessments were able to be gathered for six months. In addition, questions regarding compliance and sustainability were detached from the Initial Supplier Self-assessment and can now be requested on their own as a Compliance & Sustainability Check by suppliers as an individual questionnaire.

Supplier Evaluations	↶ <b>Evaluations of Existing Suppliers*</b>	<b>FY 2016/17</b>	<b>FY 2015/16</b>	<b>FY 2014/15</b>
	Evaluations (individual processes) Number	710	2,441	4,655
	Suppliers evaluated Number	566	1,956	3,814
	Suppliers audited Number	n.d.	n.d.	n.d.
	Sustainability ratio in %	89.7	85.4	84.0
	Share of invoice volume placed with evaluated suppliers in %	36.0	68.0	62.0
	<b>Invoice volume in € millions</b>			
	Invoice volume with suppliers for whom an up-to-date, approved Supplier Evaluation was available	705	1,274	947
<b>Rigorous Action on Violations</b>				
Compliance at Suppliers	↶ <b>Compliance at Suppliers</b>			
	Reports regarding suppliers via the Compliance Helpdesk	0	0	0
	of which reported violations against environmental standards	0	0	0
	of which reported violations against social standards	0	0	0
	Blocked suppliers*	13	10	7

\* Due to a system migration, systematic Supplier Self-assessments and Supplier Evaluations were suspended for six months during the reporting period.

\*\* Only includes blocks due to violations of compliance and/or sustainability guidelines; excludes blocks owing to bankruptcy or technical quality issues.

n.s. = not significant; n.a. = not available

n.d. = no data; n.r. = not recorded