voith.com

VOITH

Annual Report
2018

# Make the difference

# The Voith Group

**Group Division Digital Ventures**
Digital Ventures plays a central role in digital innovations and applications for new markets as well as the development and responsibility for digital venture activities.

**Group Division Turbo**
Turbo is a specialist for intelligent drive solutions, systems as well as comprehensive services for diverse mobility and energy industries.

**Voith Group**
The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper, raw materials & transport and automotive.

**Group Division Paper**
Paper is a leading full-line supplier as well as pioneer in the paper industry. Through constant innovations Voith is optimizing the paper manufacturing process and facilitating resource-conserving production.

**Group Division Hydro**
Hydro is a full-line supplier and trusted partner for equipping hydropower plants. The division develops solutions and services for large and small hydropower plants all over the world.

# Magazine

# Make the difference

# Financial Report

## Group



## Group Management Report



## Consolidated Financial Statements

# Voith at a Glance

| in € millions | 2016/17 | 2017/18 |
|---|---|---|
| Orders received[1] | 4,367 | 4,285 |
| Sales[1] | 4,224 | 4,209 |
| Profit from operations[1), 2)] | 254 | 211 |
| Profit from operations (core business)[2] | 304 | 267 |
| Return on sales in %[1] | 6.0 | 5.0 |
| Return on sales in % (core business) | 7.3 | 6.4 |
| EBIT[1] | 226 | 187 |
| EBIT (core business) | 276 | 243 |
| Result before taxes from continuing operations[1), 3)] | 694 | 152 |
| Net result[3] | 596 | 53 |
| Cash flow from operating activities | 135 | 31 |
| Total cash flow | -57 | -216 |
| Investments | 96 | 94 |
| Research and development[1] | 217 | 225 |
| in % of sales[1] | 5.1 | 5.4 |
| Equity | 1,366 | 1,340 |
| Equity ratio in % | 27.3 | 28.7 |
| Balance sheet total | 4,998 | 4,676 |
| Employees[1), 4)] | 18,957 | 19,535 |

1) Excluding the discontinued operations; previous year restated.
2) For more information, see section "Notes on segment reporting" in the notes to the financial statements.
3) Previous year including the result from the sale of the KUKA shares.
4) Full-time equivalents; without apprentices; as at September 30.

# Shape the future

## Believing in sportsmanship

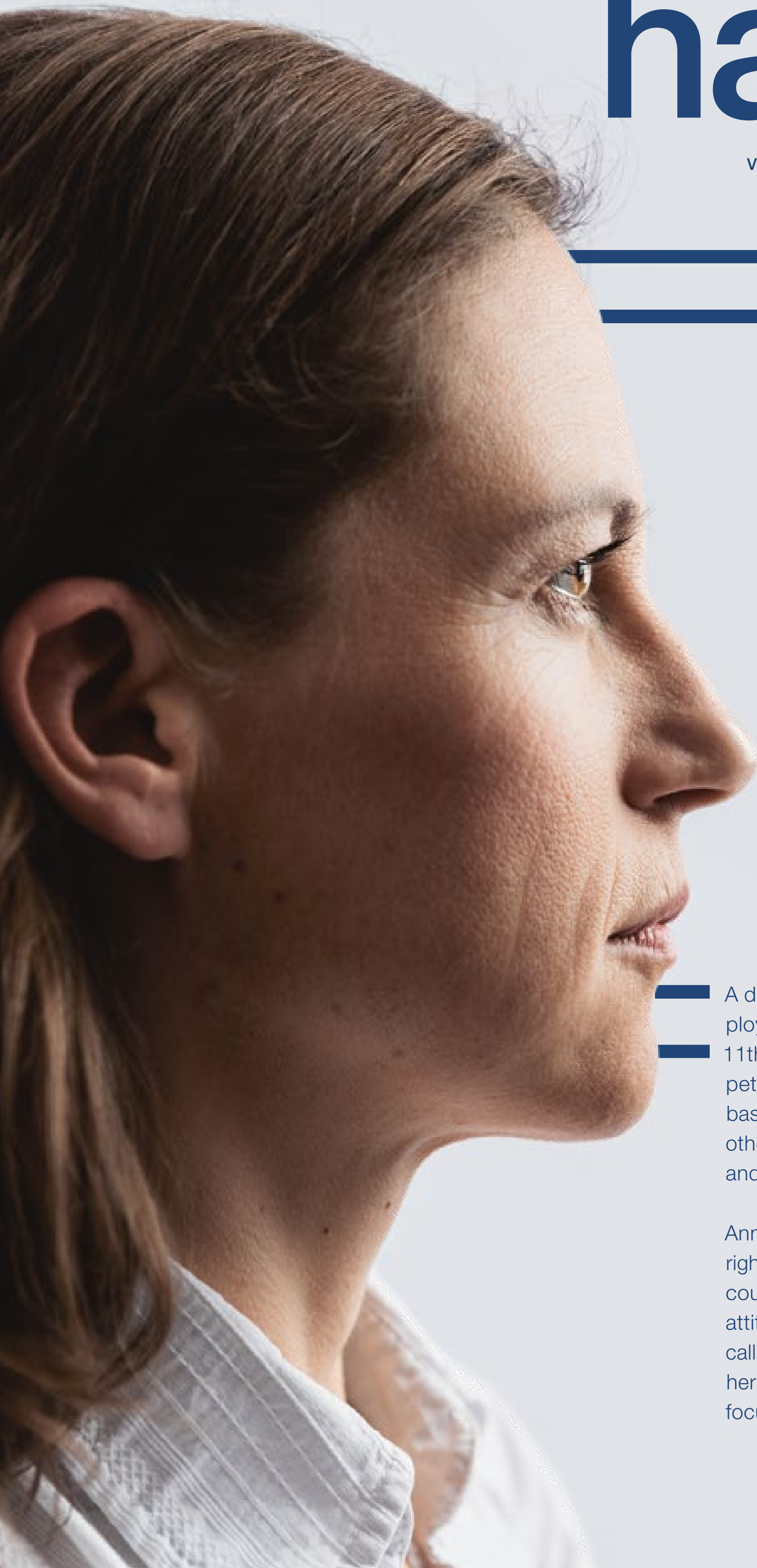
To constantly set new goals, respond to new conditions, show professionalism, open-mindedness, reliability and ambition, and to surpass oneself in decisive moments – the key to success in sports is also the key to success at Voith.

We know that a top-notch performance requires unwavering commitment and ambitious goals. It takes skill and endurance. Together with experienced coaches and partners, and with strong tactics, we face these challenges and implement projects that inspire and motivate.

In addition, unconditional determination, courage, a passion for performance and sometimes even a little bit of luck are always part of the game. At Voith, all of these factors come together. They make success and extraordinary achievements possible.

# Work hard,

Maria Knauer,
Vice President, Strategic Design



A duel between Maria Knauer, who has been a Voith employee for more than 14 years, and Anna Jonas, ranked 11th in Germany and among the 12 German fencers competing in the World Cup, would be an unequal matchup based on athletic abilities alone. But when they face each other on the fencing piste, they soon discover that sports and business have a lot in common.

Anna Jonas says that success in fencing depends on the right balance of many factors such as strength, endurance, courage, mental toughness – but above all on the right attitude, a healthy dose of self-confidence and what she calls the joy of the challenge. As soon as Anna Jonas puts her mask on her face shortly before the competition, she focuses, and forgets everything else around her.

Maria Knauer also loves challenges. During her time at Voith, she has put paper machines into operation all over the world, developed or marketed products and established new departments. She sees the connection between sports and career above all in the overarching importance of having the right attitude: “I can only work successfully if I always set new goals for myself and pursue them with passion.”

Anna Jonas,
fencer, Heidenheimer
Sportbund,
11th place in the German
rankings

# play fair!

# Magazine contents





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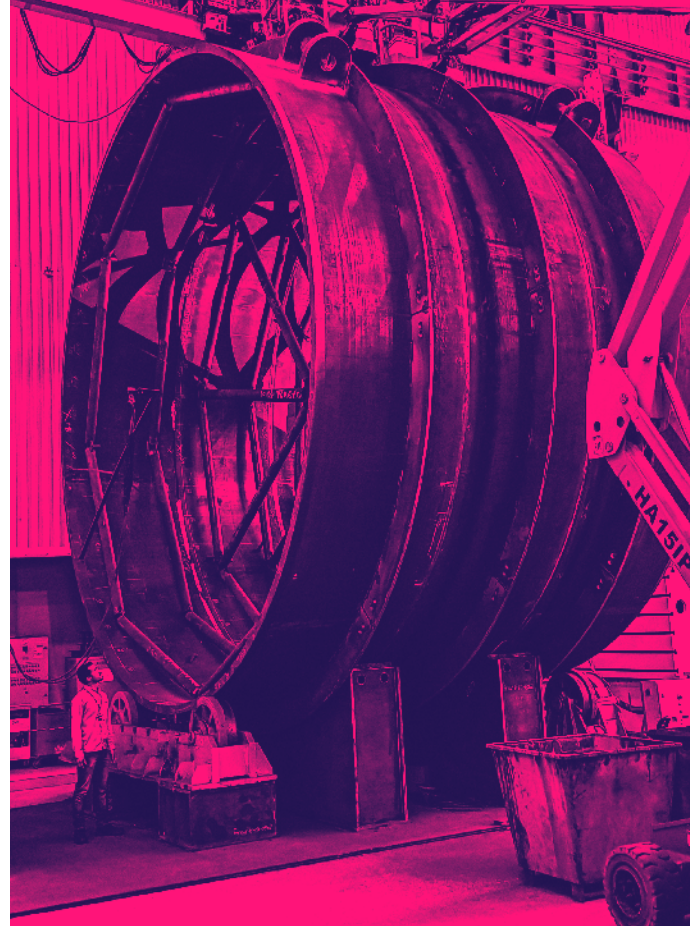


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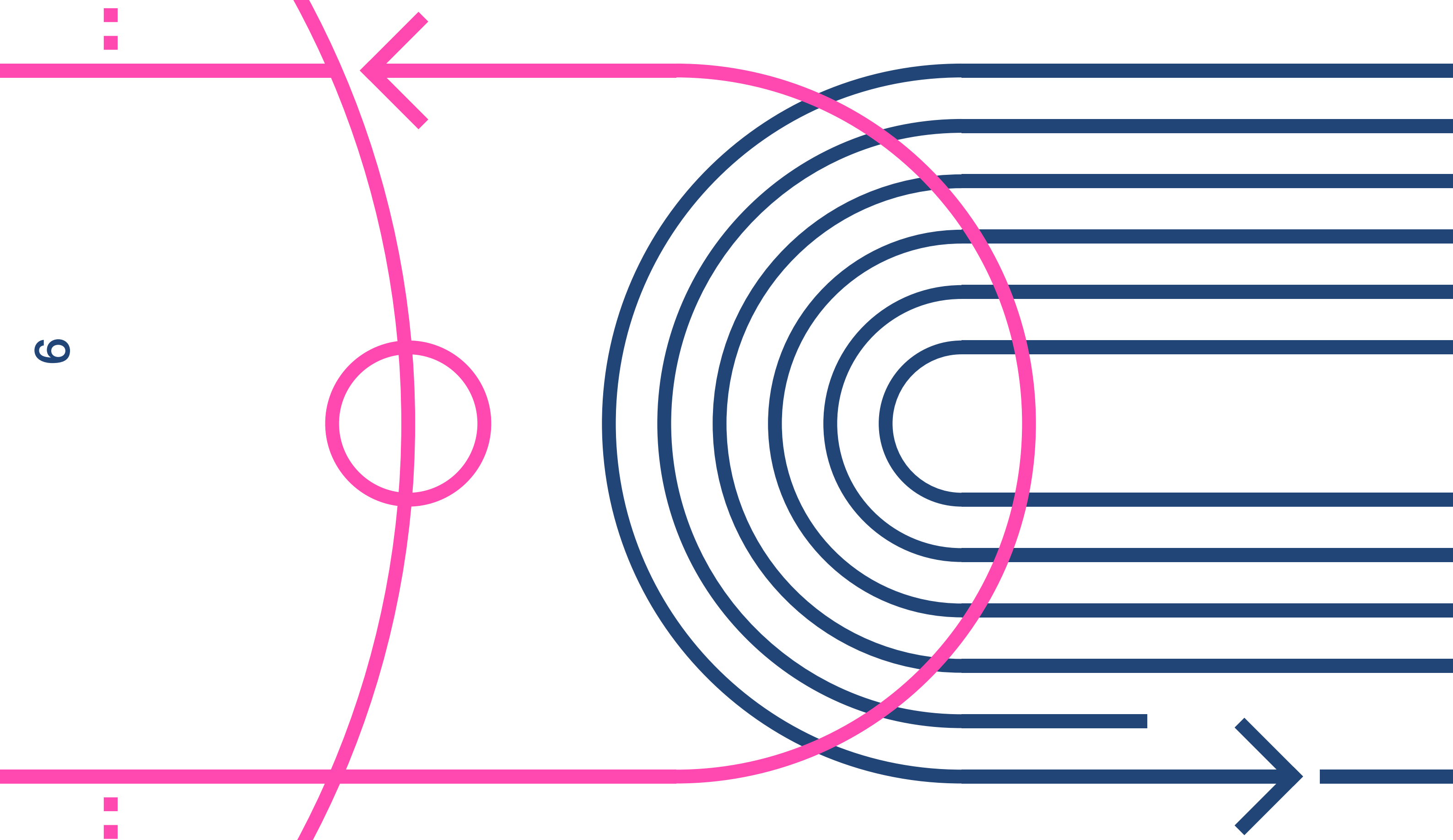
# Prepare the future



## “We live in exciting times”

Dr. Toralf Haag,
President & CEO of Voith, talks about agility, values and the founders’ formulas, which are still forward-looking today.

# Facts & Figures

**340**

new patents finalized
worldwide by Voith
in the fiscal year 2017/18

**11 million**

euros is the savings potential per year that Voith has been able to tap over the past five years in the areas of energy, waste and wastewater alone



**795**

trainees and students are employed by the Company

**19,535**

Voith employees
as of September 30, 2018

**Dr. Haag, you joined Voith in 2016 as the new Chief Financial Officer. After a good two years, you have now been appointed to the position of the President & CEO. How has your work changed?**

Dr. Toralf Haag: Of course, I've gotten to know Voith, our customers and employees very well by now. This new role, however, brings a different perspective on the Company with it. That's why I've decided to talk to a lot of employees. If you want to understand a company, you have to listen to the people who work there.

**Before you became President & CEO, you were responsible for the Company's finances. Where does Voith stand from a financial perspective?**

Voith is a "Swabian family business" in the best sense of the word. All-around conservatively financed with a very solid balance sheet. Our financial position is good, we have a net liquidity of more than half a billion euros and we're investing in our locations and employees. Taken together, these are important prerequisites for future growth. Our results are currently impacted by our significant investments in digital businesses, but I am confident that this will pay off. We want to grow with these areas. One of Voith's fundamental strengths is its structure of Group Divisions, which operate in very different industries and markets. If one market isn't performing well, the other Divisions can usually compensate. Our broad positioning is our insurance. The goal is clear: we want to grow profitably.

**How do you plan to achieve that?**

We want to grow organically and through acquisitions. We have plenty of opportunities for organic growth. For example, there is still a great deal of potential in the service business for our products and systems. In addition, we have a number of innovative ideas for our core businesses, some of which have already been launched and have generated positive feedback – such as our electric drive system for city buses. Digital transformation also offers many opportunities for organic growth. And we still have some regions in the world where there is a lot of potential: the keyword here is Africa. We have already established representative offices and are optimistic that we can help shape the continent's growth from the very beginning.

**The economy, technologies and markets are rapidly changing. If Voith wants to be successful in the future, important strategic decisions have to be made, goals have to be defined and first steps must be initiated in the present. What are the overarching issues on your agenda?**

Agility is an important concept, and we want to make it Voith's guiding principle. By the way, our founder, Friedrich Voith, exemplified this concept long before it even had a name. The rapid adaptation of change processes, the adoption of technological developments and the ability to learn have always been important aspects, not only today. This is the root of Voith's growth. In the present, we want to make it our guiding principle, with the latest instruments and processes throughout the Company.

→

**90**

nations are represented at Voith

**4,487**

active patents held by Voith in the fiscal year 2017/18

**20%**

The independent rating agency ISS-oekom awarded Prime status to Voith's sustainability performance. This ranks Voith in the top 20% of the 172 companies rated

**And how will that succeed?**
Foremost by strengthening our culture of cooperation. Our employees need feedback and recognition, but we also have to resolve conflicts and always fight for the best solution. I like to talk about entrepreneurship within the Company, personal responsibility and freedom for each individual employee. We want to promote the joy of experimentation. There is a beautiful phrase – "fail forward" – that describes it well. With the courage to innovate and a culture that addresses mistakes and sees them as opportunities.

**Your answer shows that change is also a question of values in a company. Which ones are particularly important for Voith?**
Our values date back to Hanns Voith. We live the values of respect and reliability, because that is the only way we can build and maintain strong, long-term partnerships. In addition, we remain open and curious, and we set ambitious goals for ourselves to further develop ourselves and our business. We already had these high standards in the last century and they will continue to play a central role in our work.

**You also talk about exciting technologies. Which ones are you personally particularly enthusiastic about?**
The time we live in is incredibly fascinating and full of possibilities. For example, there are machines that learn to talk to each other. And lightweight robots that will revolutionize both industrial production and our everyday lives. Artificial intelligence that helps us understand complex relationships or evaluate vast amounts of data. We live in exciting times. This reminds me of Voith's founding years. Society and the economy are in a state of upheaval. An entrepreneurial idea can change the world in the blink of an eye, just as Friedrich Voith did with the invention of industrial paper production at the end of the 19th century.

**So, after having looked far back into the past, where do you see Voith in the future?**
In five years, Voith will be bigger than today, even more agile and still deeply rooted in advanced technologies. Our goal for the future is to contribute to the sustainable growth of the world's economies, even during the fourth industrial revolution. Areas of relevance to Voith include energy storage, electric drive systems, sensor technology and optical systems. Digital asset management and performance improvement through digitalization also play a major role for us.

**225 million**

euros is the amount we have invested in research and development

**5.4%**

is the Company's R&D ratio

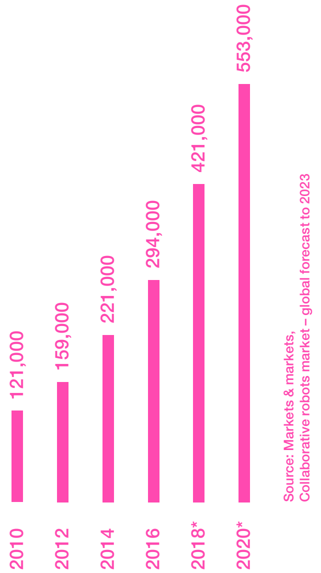
Since October 2018, Dr. Toralf Haag has been President & CEO of the Voith Group.

After his degree in Business Administration from the University of Augsburg, continued by a doctorate at the University of Kiel, Dr. Toralf Haag started his career as a personal assistant to the CEO of Thyssen Handelsunion AG in Düsseldorf in 1994.

From 1997 to 1999 he was Director Finance, M&A and Corporate Development of The Budd Company, Detroit, USA, a subsidiary of ThyssenKrupp, until he was appointed as CEO President Stamping & Frame Division of The Budd Company, Detroit in 2000. From 2002 to 2005 he was Chief Financial Officer and Member of the Management Board at Norddeutsche Affinerie AG, now Aurubis AG, in Hamburg until he took up the appointment as CFO and Member of the Executive Committee of Lonza Group AG in August 2005.

Dr. Haag is Member of the Board of Directors of Fr. Sauter AG.

# The world of robotics




Number of industrial robots sold

* Forecast

# 74

## of 10,000

is the robot density per employee in the global manufacturing industry

# 85

## of 10,000

is the robot density per employee in the global manufacturing industry

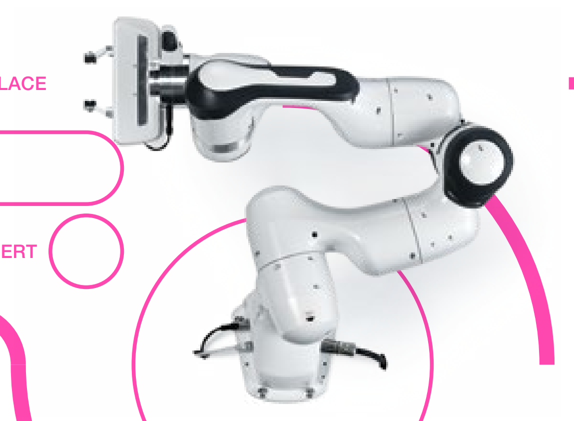
# New level of automation

Robotics heralds the beginning of a smart automation phase: robots no longer perform standardized process steps on a piecework basis, but interact with each other intelligently. Artificial intelligence, machine learning, speech and image processing, and digital networking are new features that complement the mechanical performance parameters of machines.

The Internet of Things (IoT) will be expanded to include the Internet of Robotic Things (IoRT). It enables collaboration and communication between machines that can perceive and interact with their environment. The work of the robots becomes more intricate, their production more cost-effective and the installation easier. This also makes the application interesting for smaller production lines.


change
Create
the
change

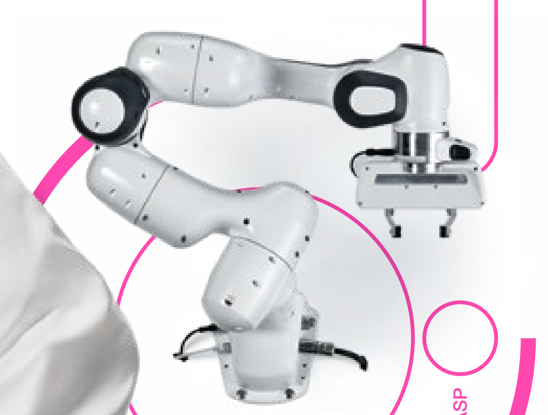
# Shaping a market of the future




As an incubator, Voith Digital Ventures is pushing the development of new digital products and services. For decisively shaping the digitalization of mechanical and plant engineering, Voith is driving forward the Industrial Internet of things (IIoT). The Group Division plays a central role in digital innovations and applications for new markets as well as the development and responsibility for digital venture activities.



Dr. Roland Münch,
President and CEO
Voith Digital Ventures



**With the joint venture Voith Robotics, Voith enters a new growth market together with the robot manufacturer Franka Emika. The Company is thus taking the next big step in the automation and digitalization of industrial production.**

Dr. Roland Münch joined Voith 16 years ago. Among other things, he was President and CEO of Voith Hydro for eight years. In 2016, he became President and CEO of the Board of Management of the new Group Division Digital Ventures. The joint venture Voith Robotics GmbH, founded in 2018, is also a part of the Group Division. Voith is thus active in a completely new business segment: robotics.

Voith Robotics is part of the new era ushered in with the establishment of Digital Ventures. "With robotics, Voith is entering a new growth market," says Dr. Roland Münch. "The topic electrifies people; we find many talented employees who want to work with robots. Large corporations also have this topic on their agenda. The possibilities inspire the entire industry."

It's a mixture of pioneer spirit and risk taking, according to Dr. Münch. "We learn new things every day, make many assumptions in the first few meters, and it is not always clear in which direction the markets will move. We move at high speeds and are very agile. We have to critically review and adapt our developments again and again."

## Start-up culture and industrial competence

Precision, innovation and new markets have always spurred Roland Münch, both as an electrical engineer and as an automation expert. His enthusiasm for entering the robotics industry is accordingly great. "We're shaping a future market. We're all very excited about this challenge."

Voith founded the joint venture Voith Robotics GmbH together with the successful Munich-based start-up Franka Emika. Their robot development, named Panda, is currently inspiring people all around the world. Franka Emika's ambitions are grand. For Simon Haddadin, Managing Director and cofounder of Franka Emika, the goal is to become the global market leader in this segment, he said in an interview (see page 15).

Dr. Münch explains the international enthusiasm for the Pandas with their technological capabilities on the one hand. There are impressive demonstrations, for example, how a Panda teaches itself to insert a key into a keyhole in just a few attempts. Another reason for Dr. Münch, however, is the emotional charisma of the technical device: "Although the Panda doesn't have a face and no human body shapes, in its own way it looks almost like a creature, moving even the most down-to-earth engineers. Wherever we introduce the Panda, the robots generate positive emotions."

## Bringing strengths together

The joint venture brings together the strengths of a start-up in the agile development of new products with Voith's global network and industrial expertise. "We have an established international infrastructure in sales and service, but above all we have the necessary industrial know-how and the trust of our customers in industry," stresses Dr. Münch. He wants to develop the robotics business segment on a global industrial scale. The portfolio includes individual software solutions, apps and features for industrial customers, as well as concepts that no longer involve just one but the use of many intelligent technologies and collaborating robots. All of this is already happening today and reflects the consulting competence of Voith Robotics and the entire Group Division Digital Ventures: "We support our customers in automating their processes with ready-to-use robotic solutions and their integration into the existing production environment."

The new business segment promises great potential, but also represents a great challenge. Roland Münch emphasizes that the most important thing first of all is to get going. "Often, especially in these moments of initial uncertainty, many people are too cautious, preferring to observe rather than to act." Whoever takes the first step takes risks – but also may take the lead. The chosen path does not have to head into the blue. "In the beginning, I usually focus on a specific objective: What problems do our customers face and how can we help them?" says Dr. Münch. "Every new path always begins with the question, what is the product or the service?" →

In this case, the Panda is a landmark. New applications and areas of use are defined together with customers for the marketing of these products. New territory is not necessarily unknown territory. For Dr. Münch, it is rather "the logical further development of the automation competence with which Voith has been continuously optimizing the use of paper machines or turbines for its customers for decades."

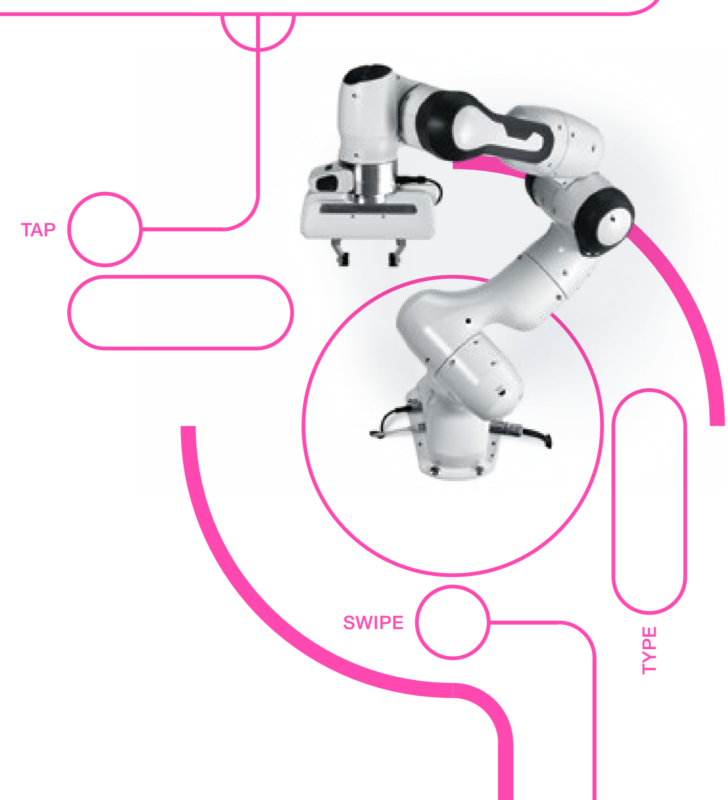
The entry into robotics is the next step in automation and digitalization, with intelligent machines that can learn and work together as a team. The employees of the Munich-based manufacturer and joint venture partner Franka Emika are working on precisely these skills on the Panda. The machines are based on a platform concept; that is, the robots can always carry out new activities via apps. The hardware is constantly being further developed for this purpose. The load-bearing capacity is to be doubled from three to six kilograms. Image recognition will also be available for the Panda in the future. The goal is to market the Panda as well as its software as out-of-the-box solutions that users can unpack like a smartphone and use directly.

In the long term, it cannot be ruled out that the joint venture will develop entirely new generations of robots or enter into cooperation agreements with other manufacturers. In any case, the interest of the industry has been aroused. According to Dr. Münch, there are already concrete applications in the electronics industry in particular: "Pandas are used very effectively in the production of printed circuit boards today." Although these processes have long since been highly automated, people still have to perform monotonous tasks such as turning over parts, passing them on or manually performing a quality control, which consists, for example, of checking the functionality of all knobs. All this is done much better by the robot colleague.

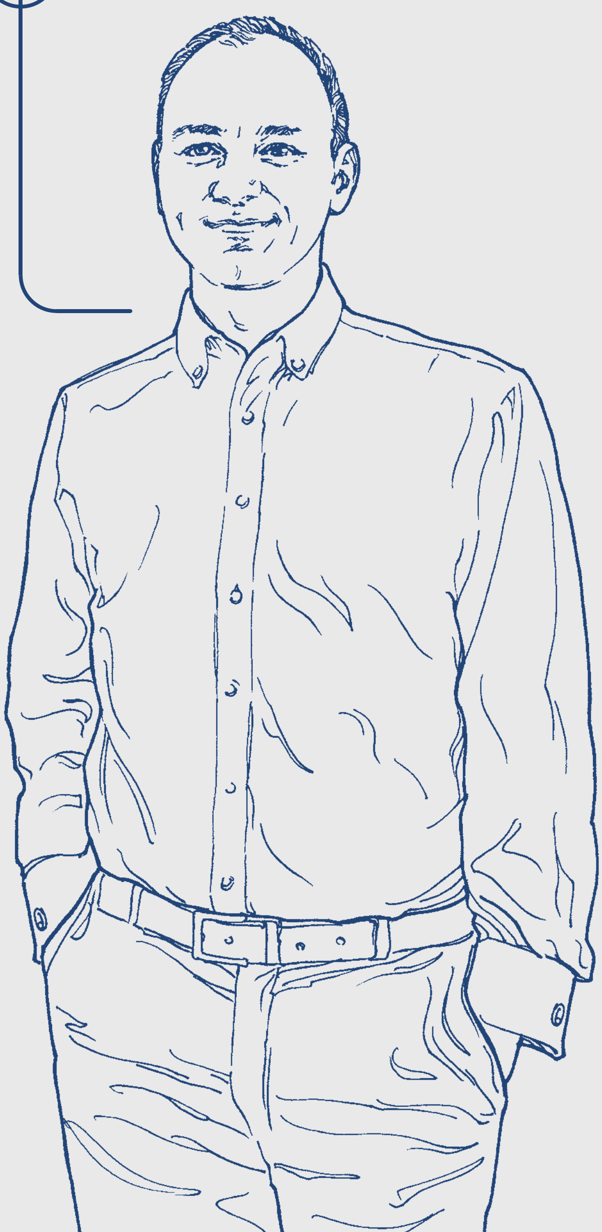
## Heralding the start of the scaling phase

"The demand for these applications is enormous and growing all the time," says Dr. Münch. "Everywhere, new possibilities are being evaluated. Customers first order two or three Pandas to test the applications for the machines. If we convince them in these experimental phases, the order quantities increase rapidly." To meet this demand, Voith Robotics has set up a strong international team since September 2018. Broad demand is seen above all in China, North America and Germany. Dr. Münch predicts that it won't be long before the first factories can fill complete production lines with robots. "That is our goal. Until we achieve this, we optimize the product and work to obtain various certifications for the Panda. This also gives us a unique position in the market."

Robotics are changing automation from the ground up. Voith is a reliable partner for industrial customers in this transformation. "They know us and know that when Voith offers something, it is well thought out, of the highest quality and with the best service," says Dr. Münch. The road to the future has begun.



# 4 questions for Simon Haddadin



Simon Haddadin,
Managing Director and cofounder
of Franka Emika

## Where was the Panda first used?

One of the first customers was the Swedish Assa Abloy Group, one of the world’s largest manufacturers of locking systems. The company was looking for a robotic system that could put keys in locks. Up until then, this was considered impossible for robots. However, the Panda has the basic skills for it. Assa Abloy employees loaded it with additional specialized knowledge and they now use several Pandas to manufacture and test keys and locking systems. The cooperation can literally be seen as a door opener for this industry.

## Analysts estimate that by 2025 more than 25 million robots like the Panda could be in use worldwide …

… and some of them should be made by us. We are the technology market leader and intend to continue to play this role in the coming years. This is certainly possible because we are technologically very well positioned, and Germany is currently a leading location in robotics – a multidisciplinary industry that brings together hardware and software.

## What role does the joint venture with Voith play in these plans?

There were many interested parties, but at Voith we quickly had the feeling that we had the same mindset. We think responsibly and long term. Our joint venture is to develop into a technology group with great software expertise. Our goal is to make robotics the next major technology in which German industry is an international leader.

## Will you be able to manufacture competitively in Germany in the long run?

Our robots are significantly cheaper than competing products in terms of quality and performance, because the product was developed for a high degree of automation and we have designed the production for an unprecedented degree of automation right from the start. Pandas build Pandas for us, at a production line of up to 12 pieces in a series. In combination with well-trained skilled workers, we can continue to produce competitively in the future.

"The physical interaction with the world seems so simple to us humans that we no longer consciously think about it."

# Learning by grasping

**Dr. Jeannette Bohg, Assistant Professor at Stanford University in the USA, about the collaboration between man and machine and why even the most advanced robots still fail at tasks that are easy for a child – and how she is working to change that.**

Dr. Jeannette Bohg conducts research at the interface of robotics, machine learning and computer vision. We meet her in her small office on the Stanford campus. The walls are painted red; a couch and a bicycle share the space alongside technical literature, components and three lap-dog-sized metal-gray robots.

**What are you doing with them, Dr. Bohg?**

Jeannette Bohg: I make them cooperate. They should together move objects that are either too bulky or too heavy for one of them alone. It's really challenging for them to decide how to do it.

Dr. Bohg brings robots to life: with motors and cameras, grapplers with two or three mechanical fingers – as well as lots of computing power and algorithms. The three robots permanently collect data about their own position, that of their colleagues and that of the object. They recognize how heavy the object is, what shape it has and exchange this information with each other in real time.

**What do you think, Dr. Bohg – where will these skills be used first?**

Robots will search for workpieces or other items in warehouses or factories and bring them to specific locations. Depending on the weight and shape of the object, they can spontaneously cooperate if they cannot move it on their own, and also work together with humans.

**But robots still find teamwork difficult?**

Think about how people move a table or a couch: I go to this corner; you go to the other. Maybe we'll change position in the process. Am I going backward or forward? There are a lot of agreements, sometimes verbally, but also simply by pulling or pushing. In contrast, robots usually bring objects to a specific location and don't communicate at all. In my experiment they don't even know how heavy the object is or how to move it best. That's why they have to organize themselves as a team.

**Why is it so hard for machines? In chess, for example, computers are far superior to humans. Isn't that much more complicated?**

Physical interaction with the world seems so easy to us humans that we no longer even think about it consciously. Every child is capable of this. However, we never really know how to do all this. That's why it's difficult for engineers to reproduce it. Games like chess, on the other hand, are only decision-making processes where all the rules are very clearly focused on a finite set of possible actions, and all the important information is there. The computer knows where each figure is and can therefore solve any problem mathematically by intelligently examining the set of possibilities.

**In contrast to the sensory motor functions you're investigating?**

The fact that the robot arms can be moved into a variety of positions results in an almost infinite number of possible solutions. The environment is usually only partially visible so that we cannot access all the information. If a robot tries to pick up a pen on the table, it may be slightly displaced, and so the machine must react and deviate from its originally planned movement. People have been gaining experience with such situations since their earliest childhood. We develop an intuitive model that helps us to predict various possibilities. Robots can't do that yet. →


**The main limitation in robotics at the moment is therefore the software, the programming?**

I think the better the hardware, the less we have to invest in computer calculations and algorithms. But software and control really do have the greatest potential. There are experiments in which humans remotely control a robot to perform various tasks such as cleaning an apartment. In this way, many tasks could be solved that we didn't know how the robots could make autonomously. This shows that robots theoretically have the capabilities for such a task, but not yet the brain.

When Dr. Bohg has taught the three robots in her office with the right software, she dares to take them to the joint laboratory of the computer science department on Stanford campus. It is a playground with dozens of monitors and robot arms from various manufacturers, including five Pandas from the German manufacturer Franka Emika. According to Bohg, the sensitive yet easily programmable arms are currently the best.

**And what are you researching with them, Dr. Bohg?**

If robots in factories or department stores have to perform complex tasks, something can go wrong with every step. Possibly the wrong object was detected. Then you have to look again and perhaps remove objects from the way. The object can slip out of the robot's hand and fall to the ground. Robots like the Panda can process these errors and autonomously develop and execute an alternative action plan in milliseconds.

**You're trying to preprogram everything that could go wrong?**

Quite the opposite. There are approaches where the robot recognizes that it's stuck or does not know what's going on and then asks a person for help. But each of these interventions takes time. So it would be even better if the robot could readjust itself on its own. For example, the attempts in which robots share experiences with their colleagues or learn from their robot peers are exciting.

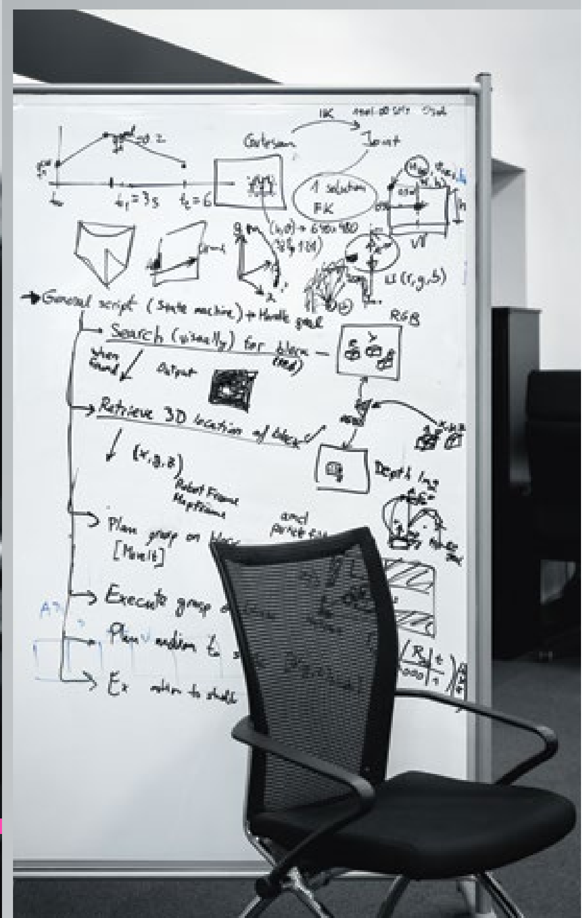
**In the future, cooperating robots should not just work with each other but also hand in hand with people. How can this work when the machine itself already faces so many challenges?**

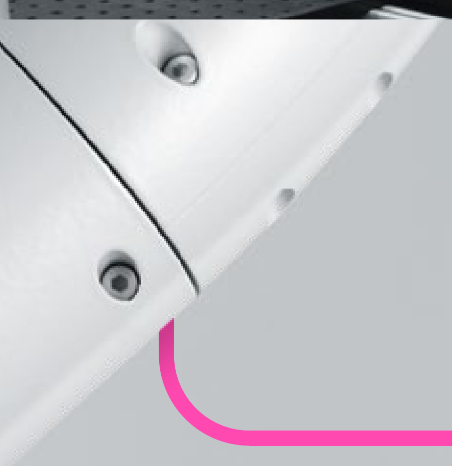
In teamwork, for example, humans could show the robot what kind of movement it should perform. This is called kinesthetic teaching. Humans and robots would complement each other very well. Robots can better perform precisely the same tasks over and over again; humans have advantages when assembling very small parts where the haptic feeling is important. But if both human and robot are really supposed to work hand in hand, it becomes difficult to plan such movements for the robot.

**Why?**

The robot must be able to predict the intention of people or other robots. The human being needs to know what the robot will do next. This means that the robot constantly monitors what is happening around it. This leads to extremely complex calculations that have to be done in real time. Robots that work together are like ants trying to carry something together. They have to decide for themselves how they want to unite and what they want to do. →

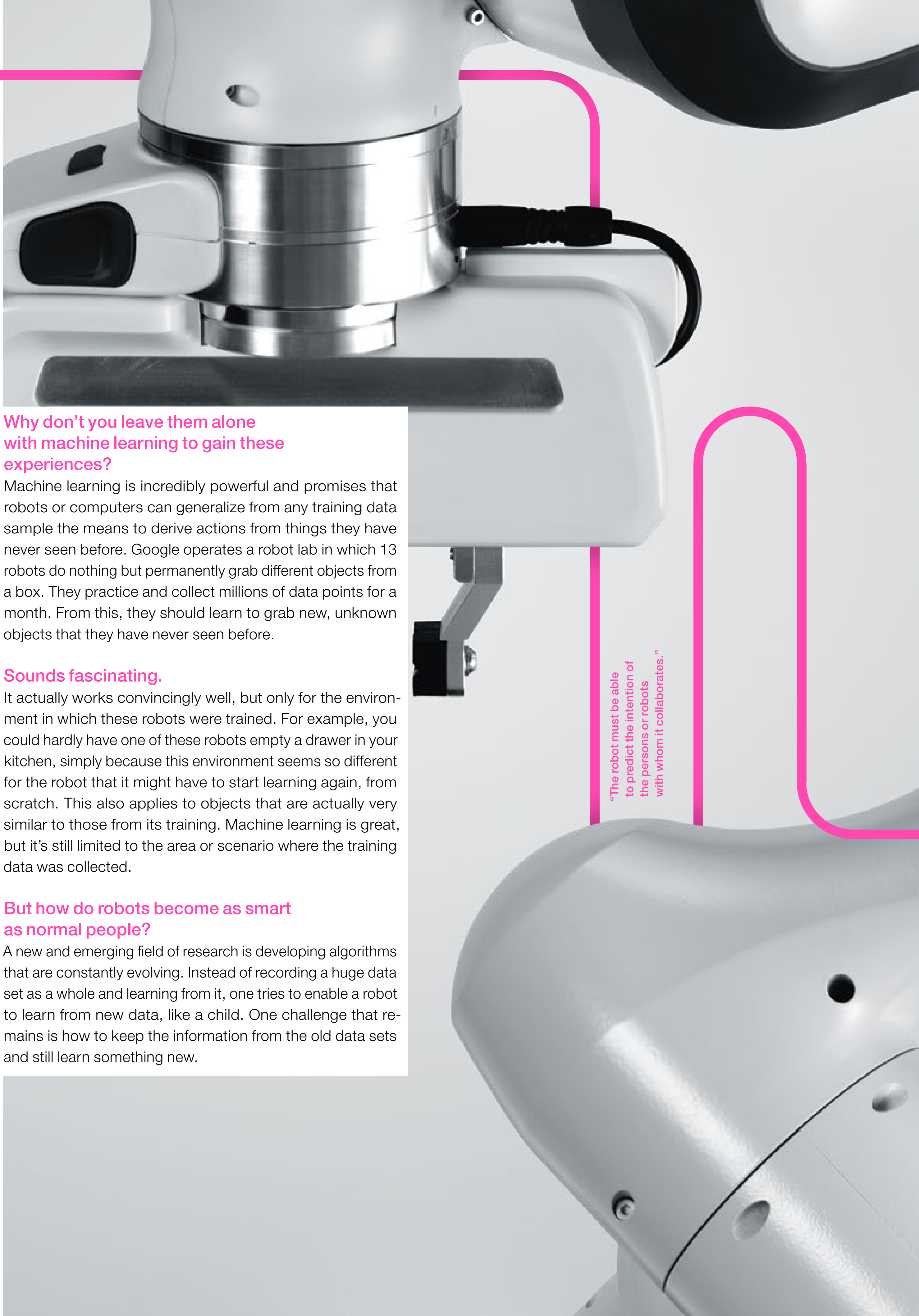
“Instead of recording a huge data set as a whole and learning from it, one tries to enable a robot, like a child, to learn from new data on its own.”



## Dr. Jeannette Bohg

After studying computer science at the TU Dresden, Dr. Bohg visited the Chalmers University of Technology in Gothenburg, Sweden, where she studied Automatic Art and Technology. In 2012, she received her doctorate in Robotics and Computer Vision from the Royal Institute of Technology in Stockholm. From 2012 to 2017, Bohg conducted research at the Max Planck Institute for Intelligent Systems in Tübingen, and in September 2017, moved to the renowned Stanford University as Assistant Professor to teach the robots of tomorrow how to grasp and understand.



### Why don’t you leave them alone with machine learning to gain these experiences?

Machine learning is incredibly powerful and promises that robots or computers can generalize from any training data sample the means to derive actions from things they have never seen before. Google operates a robot lab in which 13 robots do nothing but permanently grab different objects from a box. They practice and collect millions of data points for a month. From this, they should learn to grab new, unknown objects that they have never seen before.

### Sounds fascinating.

It actually works convincingly well, but only for the environment in which these robots were trained. For example, you could hardly have one of these robots empty a drawer in your kitchen, simply because this environment seems so different for the robot that it might have to start learning again, from scratch. This also applies to objects that are actually very similar to those from its training. Machine learning is great, but it’s still limited to the area or scenario where the training data was collected.

### But how do robots become as smart as normal people?

A new and emerging field of research is developing algorithms that are constantly evolving. Instead of recording a huge data set as a whole and learning from it, one tries to enable a robot to learn from new data, like a child. One challenge that remains is how to keep the information from the old data sets and still learn something new.

“The robot must be able to predict the intention of the persons or robots with whom it collaborates.”

# Storage evolution

## 80

**kilobytes**

was the storage capacity of the first
8-inch floppy disk in 1969

## 650

**megabytes**

was the storage capacity of the first
CD-ROM for storing large multimedia files

## 4.7

**gigabytes**

was the storage capacity of the first
digital versatile disc (DVD) in 1996

**Cloud**

First cloud services
launched in 2007

∞

# The cloud adds value

Digital platforms combine engineering and user-friendliness. They connect market participants and simplify their interactions. New data-based digital services, marketplaces and innovations that play a decisive role in the future creation of value in mechanical engineering will emerge.

In contrast to end-customer-oriented products in the B2C sector, the complex processes of networked development or customer-specific configuration of machines cannot be simplified at will. Companies like Voith have the necessary industrial know-how to act as drivers of the digital platform economy. The prerequisites for this are powerful network infrastructures, platform compatibility in industrial data space and the security and integrity of data.


All
new

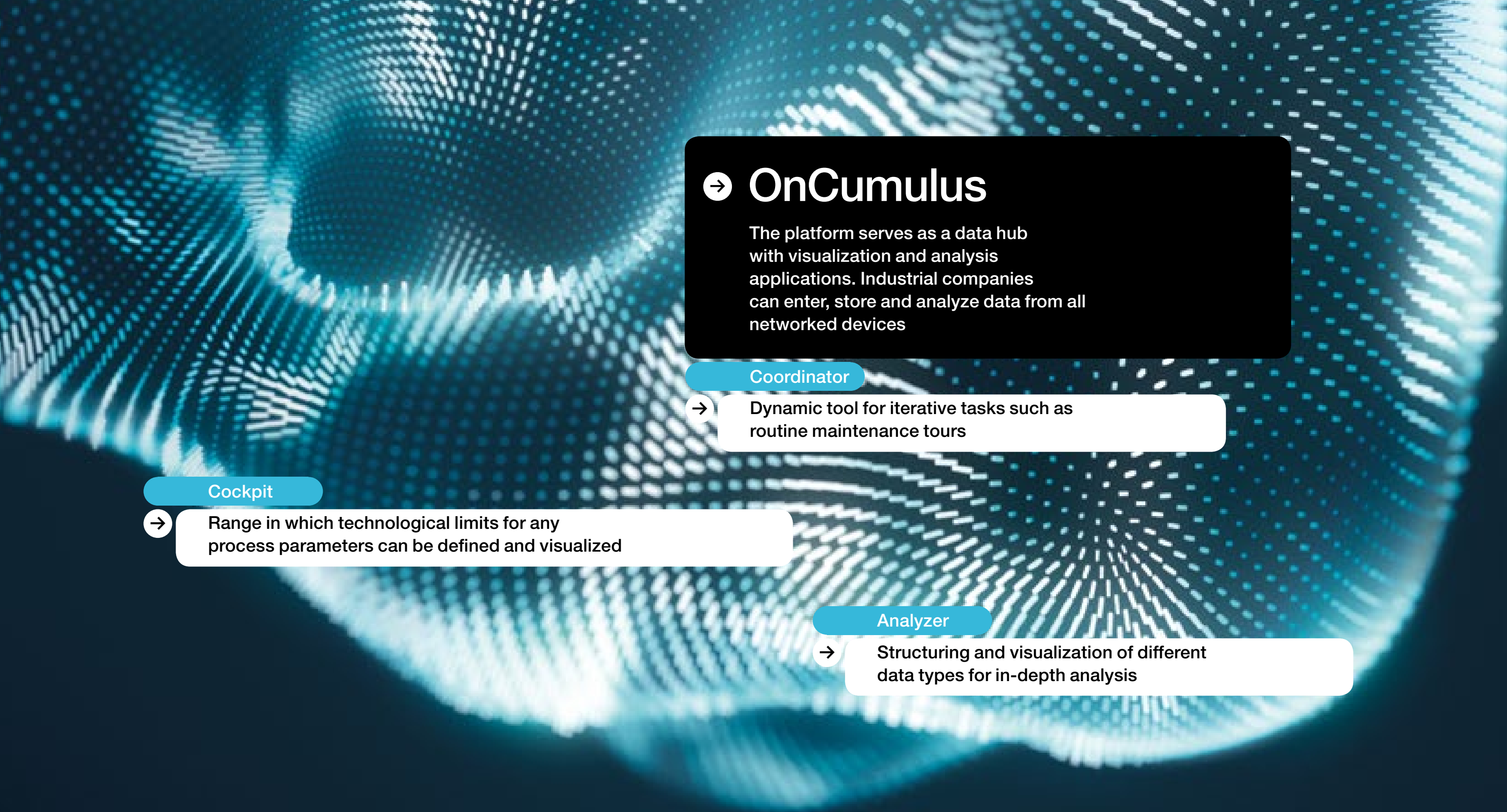
# Start. Fail. Start again.



Lisa-Maria Pallaoro

Project Manager, Platform Delivery

“The most important lesson from the realization of the OnCumulus project is that you shouldn’t fall in love with your ideas. A lot of things that inspired us in the beginning, of which we were all convinced, proved impossible to implement in the end.”






**After barely four months at Voith, Lisa-Maria Pallaoro went on a trip around the world: to explore the possibilities and demand for a new business segment on-site with 50 customers in 20 countries. Three years ago, the then 23-year-old helped shape the start of a project that would eventually lead Voith to a cloud-based IIoT platform application. In the spring of 2018 it was officially launched, under the name OnCumulus.**

In a world in which collaboration within companies and even between market participants is becoming increasingly important, in which data is collected on networked systems and machines and evaluated via the cloud in order to control processes even more efficiently, platforms are developing into the central business model of the digital economy. For a company like Voith, they represent a particularly exciting link between industrial hardware and digital services. In 2015, such a platform was defined as a new business segment with high potential in which Voith could generate future growth.

## A new way

With the OnCumulus platform, Voith is not only entering a completely new business segment but also changing the way it works – instead of presenting a perfectly mature product, OnCumulus was developed from the beginning in close cooperation with customers. Lisa-Maria Pallaoro was involved from hour zero.

The information systems specialist got to know Voith during her dual course of study. After the successful conclusion of the project, she signed her employment contract, and after only a few months, jumped into cold water. “It was a great feeling to be part of OnCumulus’s project start. It was something completely new for Voith, and, of course, also for me. There were no guidelines or best practices yet; we were simply free in everything we did. Of course, there was also a bit of nervousness. I was still very young, had only been at Voith for a few months – and then a challenge like that!”

She was helped by the support and trust of her supervisors. “I was able to attend further training courses to familiarize myself with the subject, received a lot of support – as a young woman in her early twenties, I had to assert myself internally and with customers, but sometimes also against some reservations.”

OnEfficiency

Applications support the optimization of processes

OnCare

Products that focus on asset availability



Ekrem Yigitdöl

Vice President, Platform Delivery

“Starting is not a single moment for me; it is an ongoing process. We get involved in a new topic, come to a new insight or solution, with which we start again to start something new.”

# Start. Fail. Start again.

After evaluating the impressions and experiences from the more than 120 customer interviews on her trip around the Voith universe, some of her customers' so-called pain points were obvious. For Ekrem Yigitdöl, Vice President, Platform Delivery, it was, above all, the fact that countless small parallel universes existed in customers' plants. "Each area, each responsibility and even different parts of a machine are controlled by different systems. There are countless displays and user interfaces that need to be logged in over and over again, between which there is no data exchange, with which a person can only access very limited areas." With OnCumulus, Voith wants to develop a hub for data from various sources, such as plants, production lines, machines and equipment. As a centralized and reliable access point, customers can start their digitalization activities from here. Their data, which is recorded and evaluated in real time, is individually prepared for them so that they can optimize their processes and make the right decisions.

According to Ekrem Yigitdöl, what sets Voith apart from a classic software company is its customers' trust in its industrial competence. "We are not an IT service provider, but a solutions provider with 150 years of experience in mechanical engineering."

Lisa-Maria Pallaoro initially became part of a team responsible for the visual design of the platform and the user experience during the further implementation of the project. The first versions of user interfaces were created, which the customers immediately tested. "Our goal was to create self-explanatory interfaces and dashboards. We let customers work with the systems, gave them tasks such as setting an appointment or selecting a machine. We watched them, evaluated their impressions and started the next optimization round with the feedback."

## A new mindset

Lisa-Maria Pallaoro says that OnCumulus was not only used to develop a new business but also to cultivate a new mindset at Voith. "Up to now, Voith's reputation and self-image has consisted, above all, of going to customers only with fully developed products. For OnCumulus, however, we brought the customers on board right from the start. For experienced Voithians, it was not always easy to suddenly present unfinished ideas, have to ask questions, not know everything, discard assumptions." A learning process that customers also went through: "When we clicked through the digital demonstrations with them, we always had to point out that this was far from being a finished product, but instead a test version."

Customer feedback was important. This was the only way to realize Voith's claim to provide a platform with OnCumulus that can be used across all systems and areas of an organization. "That's the platform's unique selling point," says Pallaoro. "With OnCumulus, you can use the various apps to control virtually all of a factory's systems with one and the same tablet."

If you ask Lisa-Maria Pallaoro about the most important lesson she learned from the OnCumulus project, she will say, without hesitation, "You can't fall in love with your ideas. A lot of things that inspired us in the beginning, of which we were all convinced, proved to be impossible to implement in the end. Many projects failed on the way – you have to endure that. But you're all the more pleased about the goals you've achieved."

The feedback from the first customers who used the platform has been positive. Paper manufacturers and automotive suppliers, for example, were able to significantly increase their production through improved efficiency. By linking the various applications, OnCumulus also brings customers closer to the overall vision of a digital twin in which machine components and systems communicate and interact, simulating virtual tests, for example.

Since the platform was officially launched on the market in spring 2018, Pallaoro has been responsible for project management, is in direct contact with customers, and presents OnCumulus at trade fairs. "This market entry is another big step. From now on there are no excuses; it is no longer a test – we have to deliver," she says, adding that she is incredibly proud of the product.

# <Cyber Security>

**Voith's IIoT platform services are based on an important promise: that they're safe. Every day, Alam Mohammad and his team make sure that this promise is kept.**



Alam Mohammad boasts an impressive biography: born in Bangladesh, followed by computer science studies in Russia, graduate studies in Germany and Poland, and positions at large corporations and research institutes, he's now responsible for cyber-security at Voith, a topic that requires 100% of his attention every day. Or, as Alam Mohammad says, "If you feel too safe, you're vulnerable." He recalls a conference at which a representative of a large corporation announced that his company was safe from all cyberattacks: "And, of course, he aroused the sporting spirit of some participants."

**What do you mean by that, Mr. Mohammad?**

Alam Mohammad: After only a few weeks, a hacker penetrated the company's system. He found a tiny vulnerability in an inconspicuous connector in IT that the manufacturer claimed was secure.

**And then?**

There was no damage; he just wanted to send a message. Cybersecurity is a topic that has to be seen as a daily challenge. Every day I ask myself, where are we vulnerable? Weak points can be the most banal things: an electrical outlet, or any component, no matter how inconspicuous. Our strategy is therefore: Zero Trust Security. We don't trust any device, any interface, or anybody who claims their systems are safe. →

“Data is our most important asset.
We make sure that it’s protected – every day.”

Alam Mohammad,
Head of Cybersecurity & Privacy

**But isn't the IIoT platform OnCumulus based on the exchange of data?**
Data sharing is great. But these systems must meet the highest security standards and be customer-centric. All OnCumulus digital products are based on this. We are talking about security through design, not through control; for example, through effective identification technologies and processes. These ensure that it is really the customer, or a person named by them, who accesses and uses the data. I would argue that cybersecurity is one of the most important issues of digital transformation.

**And how does Voith deal with this challenge?**
We ensure that the topic of cybersecurity accompanies the horizontal and vertical integration of industry 4.0 – that is, technologies such as advanced robotics, augmented reality, the Industrial Internet of Things, cloud, big data or analytics.

**Voith also offers cybersecurity as a service to its customers. How does that work?**
We develop innovative security services for our customers. The starting point is an in-depth examination of the existing IT infrastructure, the cybersecurity health check. Benchmark analyses, which we offer together with our partner Kudelski Security, go even further. Using these results, we develop high-priority recommendations. Further services include training and consulting. We always act neutrally, as we do not sell security technologies and have the necessary industrial expertise.



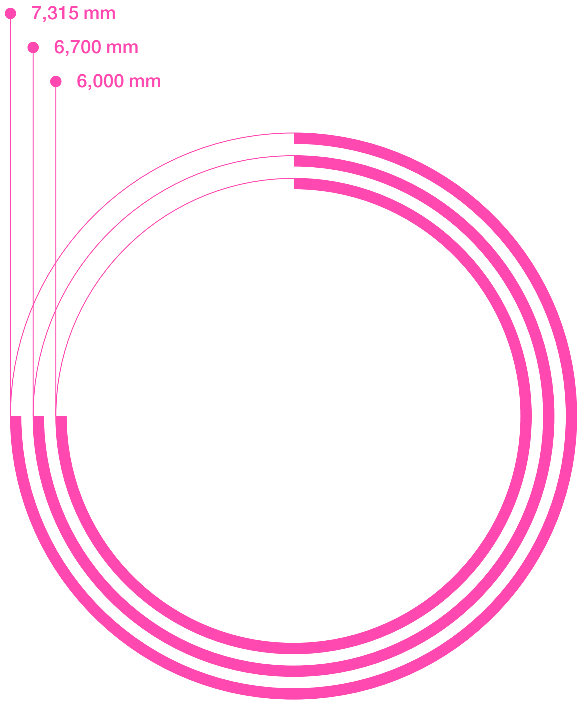
# </Zero Trust>

"We always have to be one step ahead: only those who recognize security gaps can protect their systems."

Alam Mohammad,
Head of Cybersecurity & Privacy

# MG cylinders

## Diameters




## big, bigger, biggest

For the past ten years, a trend towards ever faster systems with correspondingly larger cylinders has been seen in paper machines for specialty and tissue paper. The MG cylinder, with a diameter of 7,315 millimeters, currently under construction at Voith, is the third in world-record size at this time. The corresponding plant will later produce 360,000 square meters of specialty paper—per day.

# 350

## large cylinders

for tissue or specialty papers delivered by Voith over the past 60 years

# Shiny future

The “MG” on the MG cylinder stands for machine-glazed. The shine is created by the paper’s special high temperature and high-pressure drying process on an MG cylinder. For certain applications, additional substrates, polyester or aluminum foils are applied.

For example, the glossy layer absorbs disinfectants used in industrial processes or protects against microbiological contamination. This makes MG paper a much sought-after packaging material for food or pharmaceuticals.

Other important applications include printed decor papers for the furniture industry, transfer paper for textile prints, and anti-corrosion paper, which protects machine parts and razor blades. The demand for high-quality MG paper is increasing globally, as can be seen from the development of ever-larger production plants in which the giant MG cylinders are used.

Marco Brujas,
Quality Order Manager,
Voith Paper Brazil

# The world's largest MG cylinder

Weight 180 t

Working width 5 m

Maximum speed of production at 40–60 g/m² 1,400 m/min

120,000 t Possible production capacity of special paper per annum

25–100 $g/m^2$ Basis weight range

7,315 mm Diameter

Design pressure 7 bar

**Voith can look back on many decades of experience in the development and production of MG cylinders. The company can now benefit from this knowledge. The largest MG cylinder in the world is currently being built in São Paulo for a paper manufacturer in Germany. With a diameter of more than seven meters, the manufacturing and transport of the product is a very special task for the developer, Marco Brujas, and the entire team.**

When Marco Brujas and the team started developing the world's largest MG cylinder for a paper machine in 2017, with a diameter of 7.3 meters, this quickly led to all sorts of unanswered questions. For example, how a cylinder that weighs 180 tons will behave in a machine at speeds of up to 60 revolutions per minute. Or how the finished cylinder, with its oversized dimensions, can be transported through traffic on narrow streets from São Paulo to the port city of Santos.

Today, the Brazilian tells this story with a smile. At that time, in addition to motivation for the new, huge project, there was also respect for the first steps. And then? "Then we just started," says Brujas.



# MG C

Material

Instead of the usual gray cast iron, this MG cylinder is made of steel to increase strength. Corrosion protection is achieved by a hard metal granulate of nickel, chromium and carbide sprayed onto the surface at the customer's site. This is heated beforehand and the cylinder is in motion during application

# 200 m

The MG cylinder requires perfect welding wires. They are tested using modern methods, such as magnetic powder, X-ray or ultrasound methods

Maximum temperature

Depending on the drying performance requirements during operation, steam heats up the cylinder inside to temperatures of up to 180° Celsius

# 180 °C

# 120 °C

Due to the cooling effect of the paper web, the cylinder on the outer housing reaches temperatures of up to 120° Celsius

> “If you want to build the largest MG cylinder in the world, you also need a great team. At Voith Paper, we are responsible for order and project management, design, quality, welding and assembly. Voith Hydro supports us with special mechanical processes and logistics.”

Rodrigo Votto,
Operations Manager,
Business Line Projects

“Developing something new is exciting – knowing that nobody has ever built something like this before,” says Rodrigo Votto. He works alongside Marco Brujas and is responsible for cylinder production, logistics and project management. According to Votto, a project like this can only succeed if a team works together. “If you want to build the largest cylinder in the world, you need a great team.” Voith Paper’s work, responsible for order and project management, design, quality control, construction and assembly, was complemented by Voith Hydro’s expertise in logistics and special mechanical processes. “Thanks to the size of the Voith Group, we have access to internal experts who support us quickly and easily with their knowledge. The project is an excellent example of strong cooperation and a motivated team,” says Votto.

Marco Brujas confirms his statements. “It’s great to see how all areas mesh together, especially when it comes to new projects that we have not yet implemented in this form. That inspires all of us.” Brujas says that the culture of always supporting something new is part of everyday life at Voith. “We pass this on to our trainees when we tell them, ‘Make suggestions and be curious; bring in your ideas.’ This helps the entire team, especially with new projects.”

## Rotating and hot as an iron

An MG cylinder is a vital component in paper production. It rotates, is as hot as an iron, and has a very smooth surface. Then the freshly produced and still-moist paper webs are pressed to dry them. The cylinder currently built by Voith in Brazil will be used in 2019 in a paper mill in Germany for the production of specialty paper with two different surfaces. “The packaging material produced there has a very smooth and greaseproof side,” explains Matthias Wannenwetsch, Product Manager for MG cylinders. “It’s an ideal product for a number of packaging materials; for example, in the food industry.” →

# 60 rpm

# 360,000 m²

Record speed

The maximum rotation speed of the cylinder is 60 revolutions per minute. This means that the MG cylinder can produce 360,000 square meters of paper per hour of the highest quality

# 2017 –19

About two years will go by between the start of construction in São Paulo and commissioning in Germany



# Route

Voith plant São Paulo – Port of Santos – Port of Rotterdam – river freighter across the Rhine to Kehl
12 weeks' travel time
The cylinder is shipped disassembled in three parts

## Large product, tiny details

The Heidenheim-based engineer is equally enthusiastic about the project. "We're really going to the extreme here. A component of this magnitude is subject to great forces, no unbalance, no vibration." To achieve this, the production specifications are correspondingly demanding: the world's largest cylinder has a tolerance range of fractions of a millimeter. The quality of the cylinder depends on tiny details. The mechanical welding of the product thus requires an almost artistic perfection.

The goal is to ship the cylinder to Germany at the beginning of 2019. Then, project teams from Voith locations in Heidenheim and Ravensburg will take over the transport and installation at the customer's site. The world's largest MG cylinder is scheduled to begin operation in the second half of 2019.

The biggest challenge for Wannenwetsch and his colleagues in Brazil is currently the transport to the port in São Paulo. Actually, it's only a short distance, but according to Rodrigo Votto, determining the route through the city is like playing a strategy game: "There can't be any bridges on the way that either aren't high enough or aren't designed for the weight of the cylinder. Traffic lights must be dismantled, the roads must have a minimum width, we will have to close off important traffic arteries in the city, and all of this under the very special traffic conditions in one of the largest cities in the world." In total, the transport will take three months.

Wannenwetsch explains that the increased demand for special paper has led to growing cylinder sizes. Customers want to expand their capacities. "In MG paper production, the speed of the lines cannot be increased at will, because otherwise the desired paper properties can't be produced. These large systems are a way of producing more paper on a larger surface area at maximum speed." Wannenwetsch adds: "Not only are we building the world's largest MG cylinder, but it will also turn at record speed."

# On the move

## 73

**minutes**

is the time Hong Kong residents spend on an average working day on public transportation

## 1.16

**million**

people use the Istanbul subway every day

## 8:24

**a.m.**

is the average start of the working day in New York City

# Transporting megacities

By 2030, there will be 43 megacities worldwide, with more than 10 million inhabitants. The current figure is 33, compared with 23 in 1990. The future quality of these cities, and the opportunities they offer their inhabitants, depends on their infrastructure.

The demand for urban mobility is set to grow strongly. Today's Voith products and systems will soon not only be part of a vehicle but, in the future, also a smart component of intelligent traffic systems.

Intelligent drive solutions for power plants transmit and control power up to the multi-megawatt range in order to supply megacities with energy. Reliable and energy-saving components ensure long-term plant efficiency and productivity.

# Around the world with Voith

Population growth, air pollution, traffic collapse and changing environmental conditions affect mobility and energy supply in the megacities to varying degrees. Voith ensures that both public transportation and the energy supply of the cities can be guaranteed – around the clock.

Flip open
to learn more!

# 5:24 AM

# New York City

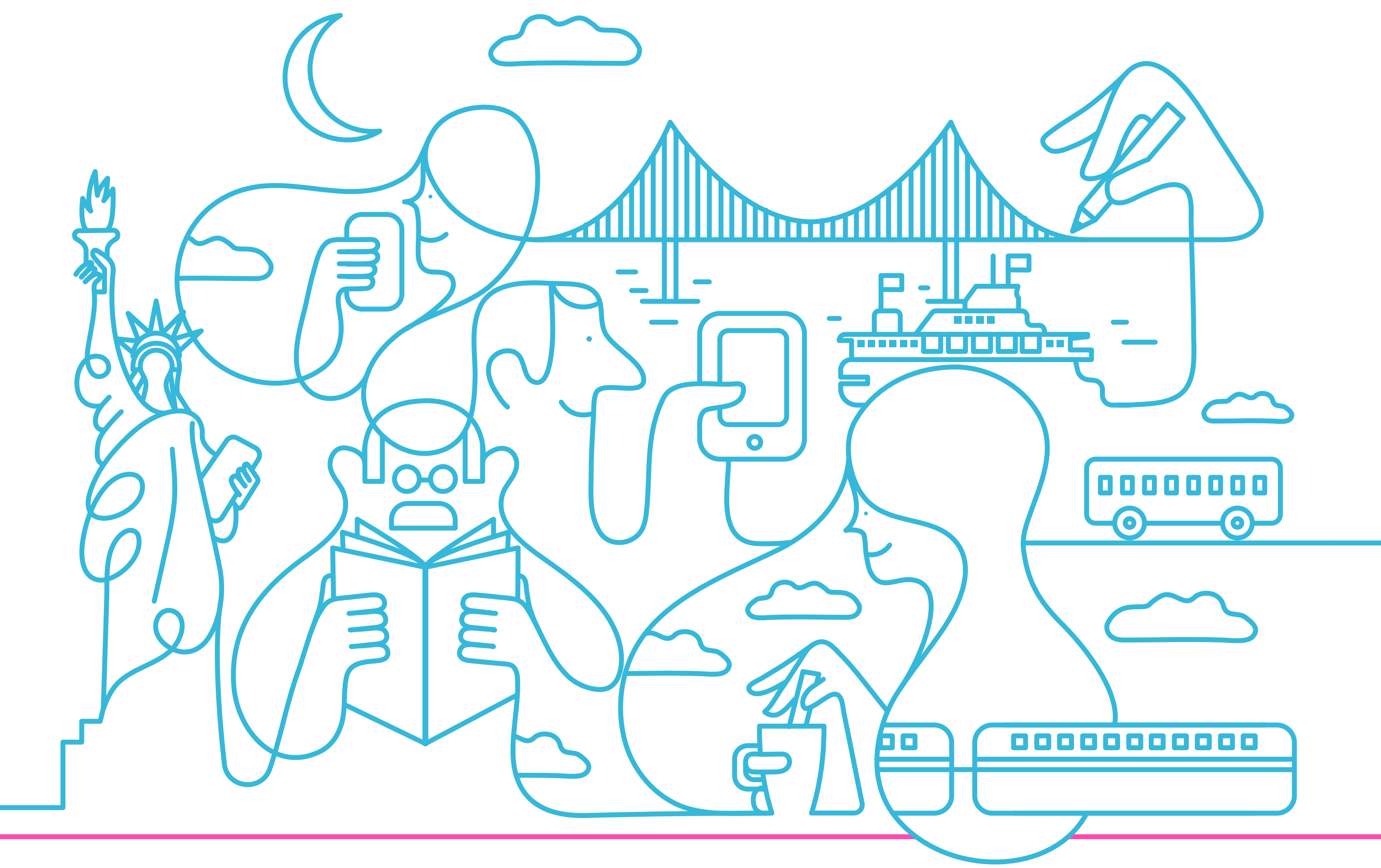
## Staten Island Ferry

Since 1905, the Staten Island Ferry has connected the boroughs of Manhattan and Staten Island. Twenty-two million passengers annually use the 24/7 ferry service to travel the 8.4 kilometers between Whitehall Terminal in Lower Manhattan and St. George Terminal on Staten Island. Always on board: Voith Schneider Propellers drive the ferries, rich in tradition, past the Statue of Liberty.

## Pipeline

From the Gulf of Mexico along the east coast of the United States to New York City. For decades, the population and industry on the Atlantic coast have received gas through pipelines outfitted with Voith components. They guarantee a constant gas supply at any time of the day or night.





# 1:24 PM

# Istanbul

## Subway lines

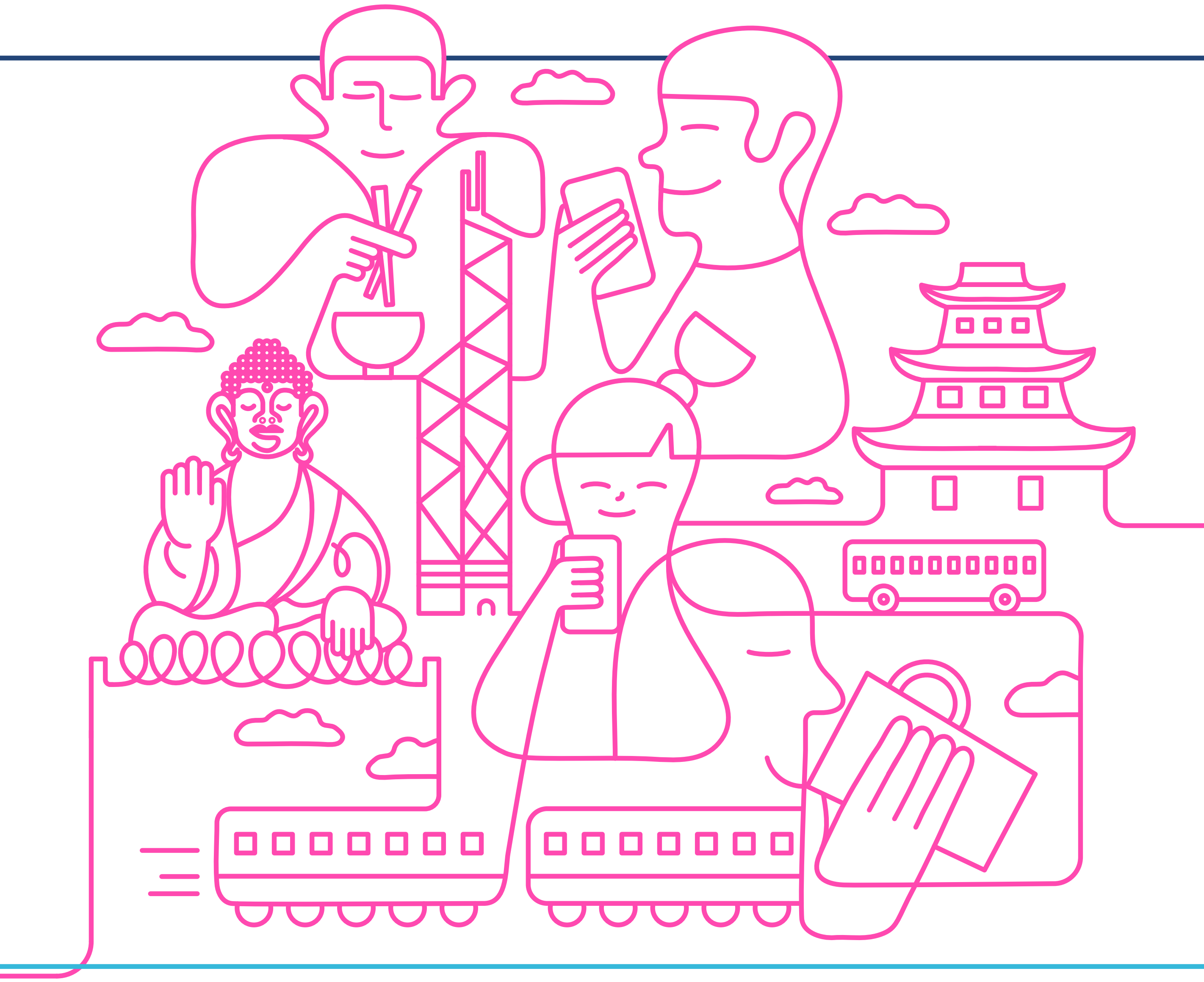
At midday, the Istanbul transport network is particularly busy. The majority of the 15 million inhabitants regularly travel by public transport, for example with the rail vehicles in the Marmaray Tunnel, which are equipped with Voith couplings.

# 6:24 PM

# Hong Kong

## City bus

On the way to work, shopping or home from the day shift: Voith products ensure that Hong Kong residents reach their destinations quickly and comfortably. For example, the automatic transmissions in the city bus, or the clutches in the metro, ensure pleasant travel – even at peak times.



# Drive new ways with Voith

Megatrends such as urbanization and the careful use of resources also require new mobility and supply concepts. Voith develops products that improve tomorrow's urban life – and keep it moving.

## Service in all areas
### Modular and always on-site

Breaking new ground with Voith: our global service network and our close partnerships with other companies provide the best basis for long-term cooperation to keep tomorrow's world in motion. Thanks to reliable availability all over the world, customers benefit from short distances, fast turnarounds, and advice exactly when they need it.

## On rails
### Efficient and reliable

Locomotives, trams, metros, monorails or high-speed trains – Voith offers products and systems for everything that moves on tracks that ensure more speed and better comfort, as well as maximum reliability and safety.

Products and services
- Scharfenberg couplers
- Final drives, turbo transmissions
- Engines
- Front systems
- Electric drive systems
- Cooling systems
- Service

## On the water
### Safe and environmentally friendly

Currents, crosswinds or tidal changes in different water depths – ships have to cope with the most difficult conditions and carry freight and passengers safely and comfortably to their destinations. Ships outfitted with Voith drive and control systems meet these requirements reliably and economically in terms of fuel consumption.

Products and services
- Voith Schneider Propeller
- Thruster
- Roll stabilization
- Control systems
- Service

## On the road
### Economical and sustainable

Compact, light, reliable – these are the essential requirements for components and systems for commercial vehicles such as trucks or buses. Every drop of fuel is used as effectively as possible – and, of course, Voith has long moved electrically, smartly and networked.

Products and services
- Automatic transmissions
- Air compressors
- Retarders
- Electric propulsion systems
- Service

## In oil and gas supply
### Energy saving and smart

Highly efficient, completely monitored and intelligent drive systems ensure that oil and gas supply systems operate safely and productively. Integrated digital functions and hydrodynamic, mechanical and electrical solutions improve the sustainability of the energy sector.

Products and services
- Variable-speed drives
- Turbo transmissions
- Highly flexible and torque-limiting couplings
- Drive shafts
- Service

# Small hydropower plants

# 30

**megawatts**
is the maximum capacity per unit of small hydropower plants that Voith has built or equipped with components

# 25

**percent**
of all small hydropower plants worldwide with a capacity of up to 30 megawatts per unit were built by Voith or contain Voith components

# 60

**countries**
in which Voith has already delivered hydropower plants

# Small projects, big potential

More than 75% of all hydropower resources in the world have not yet been used to generate electricity. This results in an enormous potential, even for small hydropower plants – with the compact turbine generator unit StreamDiver, it can be developed sustainably, both economically and ecologically.

Possible applications include, for example, residual water channels in existing hydropower plants and irrigation channels, but also drinking water or wastewater treatment plants. The StreamDiver can profitably generate electricity in rivers with a drop height of two to eight meters and with low flow velocities. Another Voith product, PipeRunner, can even be installed directly in water pipes.

The efficient compact turbine StreamDiver generates up to 800 kilowatts of electricity.

Timo Mayer,
Project Engineer, Civil Engineering,
Voith Hydro

# Embrace the new

# Small hydropower plants with huge potential

How Voith miniaturizes products rich in tradition, revolutionizing hydropower

Rethinking an established product on a smaller scale can be a big challenge. “The idea of a compact turbine dates back to 2010. It had to be oil-free and therefore particularly environmentally friendly, small and simple in design in order to achieve significant construction cost savings in new power plant concepts, and able to be installed on-site at a gradient of just two meters with little effort and impact on nature, according to the plug-and-play principle,” says Timo Mayer about the start of a project that aimed to make a big difference with a compact turbine.

At the beginning of a project, Timo Mayer always exchanges ideas with customers. At some point there will come a moment when they say: “Enough talk! Roll up your sleeves and start!” In 2010, this meant developing the first concepts for a turbine that is still quite large, with an impeller diameter of 79–131 centimeters, but still appears very small compared to conventional Kaplan turbines with impeller diameters of up to 10.5 meters, for example. These conventional turbines are like power plants within a power plant. The installation is complex; they require larger structural interventions and higher gradients.

## Powerful compact system

The application possibilities for large turbines are correspondingly limited, and the necessary investments due to structural interventions are enormous. As much as 75% of the existing barrages and dams are unused today. This is where the compact turbine generator unit StreamDiver comes in. After several years of conception and field tests with customers, the StreamDiver has now reached market maturity and is being used successfully. As a powerful compact system for hydropower, sold ex-works, low-maintenance, and composed of only a few components, the system only needs to be connected and switched on, on-site.

In South America, for example, several projects are in progress or have already been implemented. Customers can tap new resources with the StreamDiver. The compact turbines will be installed in residual water ducts to increase the capacity of existing plants. They can also be used in river courses, where the StreamDiver can be integrated particularly well directly into the dams.

## Deployment in Paraná/Brazil

One of these interesting projects is currently being implemented in southern Brazil on the Chopim River. Jairo Bandeiro, Managing Director of the Brazilian hydropower plant operator Usina Hidrelétrica Paranhos, spoke to Voith in 2017 about the construction of a conventional hydropower plant. After several months of intensive discussions with Voith experts, Bandeiro decided to install seven StreamDivers instead of the planned conventional vertical Kaplan turbines. The Nogueira project is scheduled to go into operation in the summer of 2019.

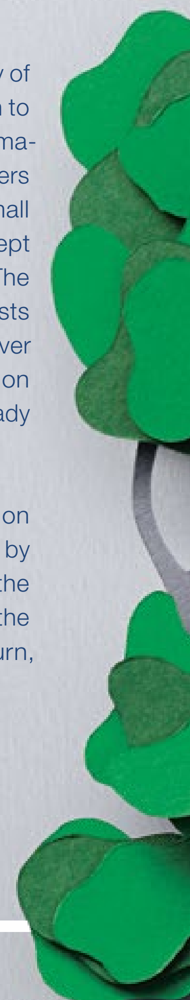
“We had very convincing arguments,” says Luiz Fontes, who works at the Voith site in São Paulo, not without pride. “Thanks to the early integration, we were able to develop a power plant concept in which the customer saves 40% of the construction costs. In addition, we increased the output from the estimated three to five megawatts.”

Especially for a smaller company like Jairo Bandeiro’s, these numbers leave additional room for budgeting. But for him another aspect was important: the low ecological impact. “We want to keep the ecological impact of our power plants to a minimum, so the StreamDiver is really the best solution,” says Bandeiro, adding, “The impact on nature is minimal for the construction of the StreamDiver plant, the oil-free technology prevents water pollution, and the fish in the river are also hardly endangered.”

## New technology from proven technologies

The businessman Bandeiro was convinced of the quality of the StreamDiver during a visit to Heidenheim. In addition to the turbines, he also commissioned Voith with an automation solution and service. “Here, too, the StreamDiver offers remarkable advantages,” says Timo Mayer. “The small number of components and the oil-free turbine concept make the product’s use extremely low maintenance.” The inspection cycles are ten years, and the operational costs for the customer decrease considerably. The StreamDiver power plant is being implemented on-site in cooperation with a Brazilian planner, with whom the concept has already been developed in Heidenheim.

The advantages of the new technology are also based on the use of mature technologies. This was made possible by Voith’s overarching cooperation. “The development of the water-lubricated bearings for the StreamDiver drew on the experience of the Group Division Turbo, and that, in turn, gained from the development of Hydro flow turbines.”



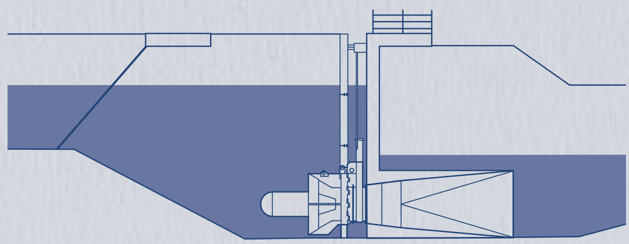
Mayer describes this cooperation as the “important look outside the box” that is needed to initiate new developments. In a project in Peru, for example, Voith not only supplied the customer with several StreamDivers but also built the entire power plant together with a local construction company. “That was really unusual. Normally we limit ourselves to the electromechanical equipment,” says Mayer. The underlying power plant concept had already been worked out with the customer prior to the tender and was ultimately also ordered from Voith.

With the additional installation of two StreamDivers, previously unused gradient can now be used in an existing underwater channel for the production of even more electricity.

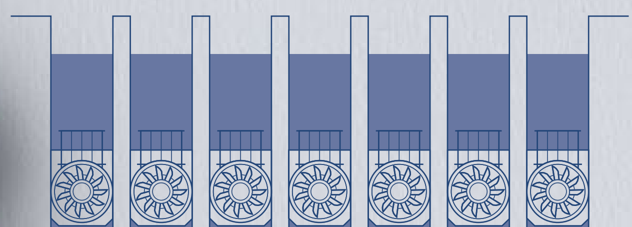
# Oil-free

**The bearings of the StreamDiver are water-lubricated – that means no oil is required**

## The Nogueira project



At the small hydropower plant on the Chopim River, in Brazil, a natural waterfall provides the necessary gradient.



While a small difference in altitude, it is sufficient for seven StreamDivers to produce more than 31,000 megawatt hours of electricity annually.

# 40

**percent of the Nogueira project’s construction costs were saved by using StreamDivers**

# Financial Report

# Group

Page

## Ladies and gentlemen,
## dear business partners of the Voith Group,

Last year, we wrote here that Voith is ready for the next 150 years! Today, one year later, I am pleased to be able to note that the next 150 years have started in a promising way. Over the past twelve months we have demonstrated in a very impressive manner the energy and resolve with which we are addressing the diverse challenges we face as a technology company in the digital age. And once again, we have demonstrated that the strategic course taken in recent years was the right one.

As shown by our performance in the past 2017/18 fiscal year, the Voith Group is built on firm foundations in every respect. Our operating

**"At the end of the fiscal year, the equity ratio reached a historical high and net liquidity continues at a very reassuring level."**
Dr. Toralf Haag

activities continue to show their robust condition. We have held up well in a market environment that was in part very demanding. This said, we did not meet all our targets, however. Under the given business environment, we nevertheless consider the fact that we were able to increase the level of our orders received and sales – adjusted for considerable negative currency effects – to be a success in itself. We succeeded in achieving this although Hydro, one of our core Group Divisions, showed a much weaker performance on account of the market than we had originally expected. Hydro's temporary weakness, that was only partially balanced out by the excellent figures shown by Paper and the sound performance by Turbo, also had a negative impact on the operating result. It is encouraging that our net income has nevertheless risen significantly on the previous-year figure adjusted for the effect of the KUKA sale.

One other positive aspect to be emphasized is that Voith's financial position remains very strong. At the end of the fiscal year, the equity ratio reached a historical high and net liquidity continues at a very reassuring level. Our healthy financial strength is of decisive importance for the further development of the Company – we are still pursuing great plans. For Voith, it is now a matter of entering into a phase of sustainably profitable growth on the basis of what we have achieved in recent years. For this, we will need financial resources – which we already have at our disposal. I emphasize this point also in my function as CFO of the Voith Group, a position that I currently still hold in addition to my appointment as President and CEO.

**"For Voith, it is now a matter of entering into a phase of sustainably profitable growth on the basis of what we have achieved in recent years."**

**Dr. Toralf Haag**

The strategic focus areas for this new phase of growth are clearly defined: firstly, we intend to grow organically, i. e. further developing the core business, both in terms of products offered and the geographical markets served, through innovations in all Group Divisions and, last but not least, through a considerable expansion of our digital activities. Secondly, we are planning for Voith to grow through targeted acquisitions. The guiding theme within our growth strategy is to widen our technological expertise for the digital industrial age – across all Group Divisions and customer groups.

One core element of our growth strategy is, and will remain, our digital agenda. For this reason, we have further sharpened the focus of our young Group Division Digital Ventures. In the future, this Group Division will oversee all of Voith's digital venture activities – including the new unit Voith Robotics, formed in the past fiscal year in connection with the investment in Franka Emika that took the form of a joint venture with this Munich-based specialist for lightweight robot systems. In addition, Digital Ventures acts as an incubator for the entire Group in pushing forward with new, digital business models. In the meantime, this has provided us with visible market success. For instance, we have already made into reality the first customer applications for OnCumulus, our internally developed digital platform. The encouraging conclusion that can be drawn in the meantime, after two and a half years of work to build up the Group Division, is this: all in all, Digital Ventures is developing according to plan. The unit is showing very strong growth and is generating an increasing momentum that will benefit the entire Voith Group on a lasting basis.

Over the course of the current fiscal year, we intend to further refine Voith's growth strategy. The strategic agenda is linked to clear financial targets. Over the medium term, Voith aims for sales growth distinctly higher than the annual growth in the global economy and a significant improvement in its profitability. The clear focus on profitable growth is intended to bear fruit already before the end of the 2018/19 fiscal year. We anticipate an increase in orders received, a rise in Group sales and growth in all key earnings indicators.

All in all, we consider Voith to be well on its way towards achieving its strategic and financial objectives – with leaner structures, more efficient and effective operating units, technological innovations and new business models, with acquisitions and organic growth and, most of all, with a highly motivated, top-performing workforce. The trust placed in us by our customers and business partners is an incentive and an obligation at the same time. We hope for your ongoing confidence in us!

Sincerely yours,

Toralf Haag

Dr. Toralf Haag
President and CEO

# The Corporate Board of Management

**Andreas Endters**
Voith Paper

**Dr. Uwe Knotzer**
Voith Turbo

**Dr. Roland Münch**
Voith Digital Ventures

**Dr. Toralf Haag**
President and CEO, Finance and Controlling

**Uwe Wehnhardt**
Voith Hydro

## “The guiding theme within our growth strategy is to widen our technological expertise for the digital industrial age – across all Group Divisions and customer groups.”

The Corporate Board of Management

# Report of the Supervisory Board for the 2017/18 Fiscal Year

## Ladies and gentlemen,

In general, the global economy continued its upswing over the 2017/18 fiscal year. A large share of global growth was still coming from Asia, especially China. The US economy gained further momentum, the euro zone returned sound growth. Brazil was gradually recovering from the recession even though the political crisis continues to hamper important infrastructure projects. However, the risks for economic development have risen considerably overall over the course of the year under review. Alongside geopolitical flash points that have been already smoldering for some time, protectionist tendencies are breaking out in many places. The introduction of punitive tariffs and the termination of international trade agreements by the USA and the corresponding reactions by the trade partners concerned constitute obstacles to global trade. In addition, US economic sanctions were imposed against Iran in conjunction with demands towards European companies to comply.

After Voith had overcome great structural and financial challenges and taken important strategic decisions in recent years, the Voith Group's operating business presented itself in a sound condition in the 2017/18 fiscal year. In total, the figures for the year under review are showing a stable performance. Negative currency effects are the main reason for Voith not yet being able to achieve the growth anticipated a year ago.

The Group's digital agenda involving the expansion of the digital product portfolio remains one of the core topics. In the past fiscal year, the digital activities once again placed a considerable temporary burden on results, but the Supervisory Board is convinced that they have the potential to become a future growth driver.

There were divergent developments between individual business activities. One very pleasing factor in particular was the development of business in the Group Division Paper, which returned, following successful completion of its restructuring, to its position as the strongest pillar of the Group.

## Oversight activities of the Supervisory Board

One important mainstay of the Supervisory Board meetings in the past fiscal year were the reports by the Board of Management of the personally liable general partner, Voith Management GmbH, on the current business position and financial position of the Group and the individual Group Divisions and the reports on the Group's planning, on the Group's strategy and on material transactions.

The Supervisory Board held a total of five meetings: on October 5, 2017, on December 6, 2017, on March 23, 2018 and on June 8, 2018; the last meeting held on December 6, 2017 of the (at that date) 20-member Supervisory Board whose term of office ended with that meeting was followed by the inaugural meeting of the Supervisory Board that had been reduced to 12 members. The meetings of the Supervisory Board permitted an intense and goal-oriented exchange of opinions with the Board of Management of the personally liable general partner and the Supervisory Board.

In addition to the preliminary business figures for the 2016/17 fiscal year just ended, the first meeting of the Supervisory Board in the 2017/18 fiscal year on October 5, 2017 focused on the planning for the 2017/18 und 2018/19 fiscal years and the Group's financial, investment and personnel planning.

At the subsequent meeting held on December 6, 2017, the Supervisory Board addressed the 2016/17 financial statements of Voith GmbH & Co. KGaA and of the Group. In accordance with the resolution recommended by the Audit Committee and following in-depth discussion with the independent auditor, KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, the Supervisory Board approved the financial statements and the management report of Voith GmbH & Co. KGaA as well as the consolidated financial statements and the group management report, in each case for the 2016/17 fiscal year; the financial statements were approved by the subsequent general meeting of the Company in accordance with the Supervisory Board proposal. The Supervisory Board further passed resolutions to make proposals to the general meeting on the following topics, among others: the election of the independent auditor, the reelection of members of the Supervisory Board and on remuneration of members of the Supervisory Board and the Audit Committee.

At its meeting held on March 23, 2018, the Supervisory Board elected Prof. Dr.-Ing. Hans-Peter Keitel once again as its Chairman and on the basis of a corresponding report by the Board of Management of the personally liable general partner addressed in detail the development of business over the first quarter of the 2017/18 fiscal year and the outlook for the entire 2017/18 fiscal year.

At the last meeting of the Supervisory Board in the 2017/18 fiscal year held on June 8, 2018, the Board of Management of the personally liable general partner made a report to the Supervisory Board on the first half of the year for the Group and on the expectations for the 2017/18 fiscal year as a whole. The report was discussed in detail. The Supervisory Board further dealt with the new products of individual Group Divisions and the ongoing development of the Group portfolio.

Beyond the Supervisory Board meetings, the Board of Management of the personally liable general partner kept the Chairman of the Supervisory Board informed on an ongoing basis of key developments and decisions, and he discussed important issues with the Chairman of the Board of Management of the personally liable general partner on a regular basis. All Supervisory Board members attended at least half of the Supervisory Board meetings. There were no potential or actual conflicts of interest in the Supervisory Board.

## Report on the work of the committees

Due to the transfer of responsibility for personnel matters as a consequence of the change in the Company's legal form from a limited liability company (GmbH) to a partnership limited by shares (Kommanditgesellschaft auf Aktien or KGaA) effective as of August 1, 2017, the Supervisory Board passed a resolution at its meeting on December 6, 2017 to dissolve the statutory Mediation Committee pursuant to Sec. 27 (3) of the German Codetermination Act (MitBestG), which is not applicable to the KGaA.

The Personnel Committee did not hold any meetings in the past fiscal year before its dissolution. The same applies to the Mediation Committee.

The Audit Committee held a total of five meetings, on October 5, 2017, on December 5, 2017, on December 6, 2017, on March 23, 2018 and on June 7, 2018.

At the Audit Committee's meeting on October 5, 2017, held in the presence of the auditors from KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, the Audit Committee addressed material issues pertaining to the financial statements for the 2016/17 fiscal year and various accounting issues.

At its meeting on December 5, 2017, which was held in the presence of KPMG AG Wirtschaftsprüfungsgesellschaft, the Audit Committee conducted an in-depth examination of the 2016/17 financial statements of the Group and Voith GmbH & Co. KGaA and the report by the auditor of the financial statements. At this meeting with the auditors, the committee discussed individual issues relating to the suggestions for improvement proposed in the management letter to the financial statements, none of which were deemed relevant to this report. The head of the Internal Audit function presented to the Audit Committee the annual internal audit report for the fiscal year and the head of the Compliance Committee the compliance report. As the term of office of the Audit Committee ended at the same time as the end of the term of office of the previous 20-member Supervisory Board of the Company on December 6, 2017, the Audit Committee likewise came together for its inaugural meeting after the inaugural meeting of the new Supervisory Board consisting of 12 members held on December 6, 2017.

A further meeting of the Audit Committee was held on March 23, 2018; the sole item on the agenda of this meeting was the reelection of the Chairman.

The meeting held on June 7, 2018, addressed issues including but not limited to the Group's interim financial statements as at March 31, 2018.

## Change in the Board of Management of the personally liable general partner and on the Supervisory Board

The period of office of Dr. Hubert Lienhard as President and CEO and Chairman of the Board of Management of the personally liable general partner ended on March 31, 2018. At the same time, Mr. Stephan Schaller, who had already been appointed CEO of the personally liable general partner effective as of March 1, 2018, and who had been up to that date a member of the Shareholders' Committee of the personally liable general partner and of the Company's Supervisory Board, assumed chairmanship of the Board of Management of the personally liable general partner.

On March 23, 2018, the Company's general meeting appointed Dr. Lienhard to the Company's Supervisory Board, effective as of April 1, 2018; in addition, he has likewise been a member of the Shareholders' Committee of the personally liable general partner since April 1, 2018.

The Supervisory Board would like to thank Dr. Lienhard for his many years of successful dedication as member of the Corporate Board of Management of the Voith Group, the last ten years of which he was its Chairman. He has left a lasting mark on the character and structure of the Company and generated sustained strategic impetus. The Supervisory Board is pleased to now welcome Dr. Lienhard as a new member.

Pursuant to Sec. 98 (2) Sentence 3 of the German Stock Corporation Act (AktG), the office of the previous members of the Supervisory Board ended on December 6, 2017. As a consequence of the reduction in the size of the Supervisory Board pursuant to Sec. 7 (1) Number 1 of the German Codetermination Act (MitBestG) to 12 members and the new election of the Supervisory Board members for the employees' representatives on November 15, 2017 and the election of the members representing the shareholders by the annual meeting on December 6, 2017, the composition of the Supervisory Board changed effective as of December 6, 2017. Alongside the representatives of the employee side reelected to the Supervisory Board Ms. Ute Schurr, Mr. Walter Beraus, Mr. Thomas Martin, Mr. Gerd Schaible and Mr. Ralf Willeck, Dr. Harald Hubel was elected to the Supervisory Board as a new employee representative. On December 6, 2017, the annual meeting of the Company reelected Dr. Siegfried Dais, Mr. Johannes Hammacher, Dr. Alan Hippe, Prof. Dr.-Ing. Hans-Peter Keitel, Mr. Stephan Schaller and Mr. Martin Schily to the Supervisory Board as representatives of the shareholders for the duration of the remaining terms of office in the case of termination pursuant to Sec. 98 (2) Sentence 3 AktG. Mr. Stephan Schaller resigned from his Supervisory Board seat effective as of February 28, 2018. Mr. Johannes Hammacher, Dr. Alan Hippe and Prof. Dr.-Ing. Hans-Peter Keitel were reelected to the Supervisory Board by the annual meeting held on March 23, 2018, each for a full term of office. Since December 6, 2017, the following persons have no longer been members of the Supervisory Board: Dr. Nicola Leibinger-Kammüller, Dr. Ophelia Nick, Mr. Ton Büchner and Mr. Ulrich Freudel as representatives of the shareholders and Mr. Uwe Badziong, Mr. Ulrich Eckelmann, Dr. Volker Linden, Mr. Gerold Schaubmayr and Mr. Detlef Schöling as representatives of the employee’s side.

The Supervisory Board would like to thank the departing members of the Supervisory Board for the consistently constructive working relationships built on trust. They have accompanied the development of the Company over many years with great commitment and contributed their experience to Voith as a company and supported the work of the Supervisory Board with their advice.

At its inaugural meeting on December 6, 2017, the newly constituted Supervisory Board reelected Prof. Dr.-Ing. Hans-Peter Keitel as its Chairman and Mr. Gerd Schaible as its Deputy Chairman.

On December 6, 2017, the newly constituted Supervisory Board elected Mr. Johannes Hammacher, Dr. Alan Hippe, Mr. Gerd Schaible and Mr. Ralf Willeck to the Audit Committee. The Audit Committee elected Dr. Alan Hippe as Chairman.

KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, was appointed auditor of the financial statements for the 2017/18 fiscal year at the annual meeting on December 6, 2017. The Supervisory Board accordingly engaged the independent auditor.

The general meeting of Voith GmbH & Co. KGaA held on March 23, 2018 exonerated the personally liable general partner and the Supervisory Board for their activities in the 2016/17 fiscal year.

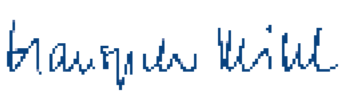
## 2017/18 financial statements

The auditor, KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, examined and granted its unqualified audit opinion on the accounting records, the annual financial statements and the management report of Voith GmbH & Co. KGaA as well as on the consolidated financial statements and the group management report for the Voith Group as at September 30, 2018. The consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS).

At its meeting on December 4, 2018, the Audit Committee examined in depth the annual financial statements of Voith GmbH & Co. KGaA and the Group as well as the respective management reports. Following its own in-depth examination of the financial statements, the consolidated financial statements and the management reports, that did not give rise to any objections, the Supervisory Board at its meeting on December 5, 2018 agreed with the results of the audit on the part of the auditor and approved the financial statements and the consolidated financial statements in accordance with the recommendation of the Audit Committee. The responsible audit partner from KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, took part in the meetings of the Audit Committee and the Supervisory Board held on December 4 and 5, 2018; at these meetings he reported on the material results of the audit and provided additional information. The financial statements of Voith GmbH & Co. KGaA were then approved by a resolution of the general meeting on December 5, 2018 with the approval of the personally liable general partner. Furthermore, at its meeting on December 5, 2018, the Supervisory Board approved and followed the proposal of the personally liable general partner made to the general meeting relating to the appropriation of the unappropriated retained earnings.

Finally, the Supervisory Board would like to thank the Board of Management of Voith Management GmbH as the personally liable general partner of Voith GmbH & Co. KGaA and the respective managements of the subsidiaries, the representatives of the workforce, but most of all the employees, for their dedicated service and their successful work over the past fiscal year.

Heidenheim, December 2018



Chairman of the Supervisory Board
**Prof. Dr.-Ing. Dr.-Ing. E. h. Hans-Peter Keitel**

# The Supervisory Board

**Prof. Dr.-Ing. Dr.-Ing. E. h.**
**Hans-Peter Keitel**
Chairman of the Voith GmbH & Co. KGaA
Supervisory Board and
Chairman of the Voith Management GmbH
Shareholders' Committee

**Gerd Schaible***
Deputy Chairman,
Head of Secretariat of the
Corporate Works Council of
Voith GmbH & Co. KGaA

**Uwe Badziong***
Automation Engineer
Voith Digital Solutions
(until December 6, 2017)

**Walter Beraus***
Secretary of the Metal Workers'
Union, Regional Organization
Baden-Württemberg

**Ton Büchner**
Former CEO and Chairman of the
Board of Management of AkzoNobel NV
(until December 6, 2017)

**Dr. Siegfried Dais**
Partner in Robert Bosch
Industrietreuhand KG

**Ulrich Eckelmann***
Trade Union Secretary on the Executive
Board of Industrial Union of Metal Workers
(IG Metall)
(until December 6, 2017)

**Ulrich Freudel**
Auditor, Tax Consultant
(until December 6, 2017)

**Johannes Hammacher**
Executive Vice President of
the family-owned company J.M. Voith GbR

**Dr. Alan Hippe**
Member of the Corporate Executive
Committee of F. Hoffmann-La Roche AG

**Dr. Harald Hubel***
Head of Production at
Voith Paper Heidenheim
(from December 6, 2017)

**Dr. phil. Nicola Leibinger-Kammüller**
President of the Board of Management
of Trumpf GmbH + Co. KG
(until December 6, 2017)

**Dr. Hubert Lienhard**
Former President and CEO
of Voith Management GmbH
(from April 1, 2018)

**Thomas Martin***
Innovation manager/
chairman of the general works council
at Voith Paper Heidenheim

**Dr. Volker Linden***
Head of Industrial Property Rights,
Voith GmbH & Co. KGaA
(until December 6, 2017)

**Dr. Ophelia Nick**
Executive Vice President of the
family-owned company J.M. Voith GbR
(until December 6, 2017)

**Stephan Schaller**
President BMW Motorrad, BMW AG
(until February 28, 2018)

**Gerold Schaubmayr***
Chairman of the works council
of Voith Turbo GmbH & Co. KG
(until December 6, 2017)

**Martin Schily**
Executive Vice President of the
family-owned company J.M. Voith GbR

**Detlef Schöling***
Chairman of the works council
of Voith Dienstleistungen
(until December 6, 2017)

**Ute Schurr***
Chairwoman of the works council
of J.M. Voith SE & Co. KG

**Ralf Willeck***
First Authorized Representative of IG Metall
Heidenheim

* elected by employees
(Detlef Schöling: appointed by the court)

# Group Management Report

# 01. Background

**The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets for energy, oil & gas, paper, raw materials and transport & automotive. Founded in 1867, Voith today has locations in more than 60 countries worldwide. As a family-owned company, Voith focuses on sustainable profitable growth. Over the course of the year under review, we began simplifying the Group's legal structures and refining our digital agenda.**

## 01.1. Group structure and business activities

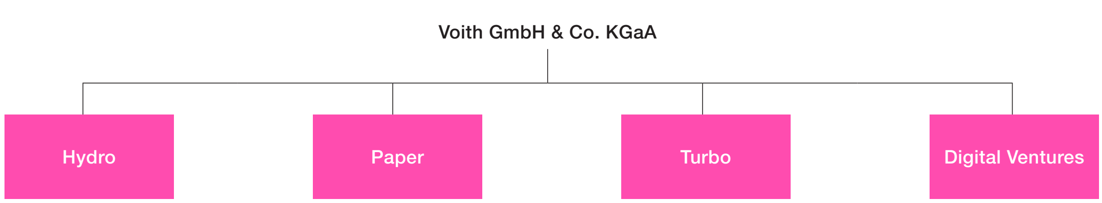
### Family-owned, global technology group

The Voith Group is a global technology group. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets for energy, oil & gas, paper, raw materials and transport & automotive. With locations in over 60 countries, Voith operates around the globe, maintaining an extensive network of production, service and sales units on every continent on the planet.

Voith GmbH & Co. KGaA, based in Heidenheim an der Brenz, Germany, is the operative head organization and parent company of the Group. It is also where central functions are performed.

The Board of Management of Voith Management GmbH is responsible for the strategy and operative management of the Voith Group. Voith Management GmbH, which like Voith GmbH & Co. KGaA, is 100% family-owned, is the personally liable general partner of and manages the business of Voith GmbH Co. KGaA. The members of the Board of Management of Voith Management GmbH are appointed

**Organizational structure**
Voith Group Divisions



by the Voith Management GmbH Shareholders' Committee. Oversight of Voith GmbH & Co. KGaA is exercised by the Supervisory Board.

## Streamlining the legal structure

The operating business is concentrated in four Group Divisions: Hydro, Paper, Turbo and Digital Ventures (until September 30, 2018: "Digital Solutions"). Previously, there was one head organization for each Group Division, which, in turn, oversaw the activities of a number of operating subsidiaries. We are currently working towards simplifying the legal structures within the Voith Group. In a first step, the material operating companies in Germany from the Paper, Turbo and Digital Ventures Group Divisions were merged into the former J.M. Voith GmbH & Co. Beteiligungen KG by October 1, 2018; most of these entities had previously been wholly-owned subsidiaries of this company. The former J.M. Voith GmbH & Co. Beteiligungen KG has now been renamed J.M. Voith SE & Co. KG. This means that to date nine former entities have been merged into one "company for Germany". The Group Division Hydro remains unaffected by these changes as it is a joint venture with Siemens, in which Voith holds a 65% shareholding.

In the simplified legal structure in place as at October 1, 2018, there are, alongside several other investments, three material entities immediately below the Group's parent company, Voith GmbH & Co. KGaA: J.M. Voith SE & Co. KG, Voith Auslandsbeteiligungen GmbH and Voith Hydro Beteiligungen GmbH. J.M. Voith SE & Co. KG holds a number of subsidiaries, some of which perform central functions for the Group (for example, Voith Dienstleistungen und Grundstücke GmbH & Co. KG), several foreign subsidiaries and, in addition, investments in German companies that are not wholly owned by Voith, such as Voith Robotics and Ray Sono.

The adjustment to the legal structures is part of the strategic enhancement of the Company. Information on this can be found in section 01.4. **Group strategy**.

Simplifying the legal structures reduces the amount of bureaucracy. This relates, for example, to the number of financial statements to be prepared, agreements between individual Voith entities as well as fees, contributions and registrations. This enables us to act more quickly and to focus even more on our operating activities.

In a second step, we are planning to further reduce the number of operating entities in Germany and abroad and, wherever possible outside of Germany, to maintain no more than one operating entity per country for the three Group Divisions Paper, Turbo and Digital Ventures.

## Still four Group Divisions

The changes in the legal structure do not have any effect on the organizational structure within the Group. Despite the formal mergers of individual entities, the existing Group Divisions remain in place as organizational units. The Voith Group's four Group Divisions are managed separately and their respective business results are presented transparently as part of the segment reporting.

The Group Division Hydro is a leading full-line supplier and trusted partner for equipping hydropower plants. Hydro develops customized, long-term solutions and services for large and small hydropower plants all over the world. Its portfolio of products and services covers the entire life cycle and all major components for large and small hydropower plants, from generators, turbines, pumps and automation systems, right through to spare parts, maintenance and training services, and digital solutions for intelligent hydropower.

The Group Division Paper is a leading full-line supplier as well as a pioneer in the paper industry. Through constant innovations Voith is optimizing the paper manufacturing process and facilitating resource-conserving production. In its role as reliable partner, Voith offers its customers tailored service solutions for all sections of the production process with its Servolution concept. The company's Papermaking 4.0 concept ensures that equipment is optimally networked, while the effective and secure use of the generated data enables paper manufacturers to improve their competitiveness.

The Group Division Turbo is a specialist for intelligent drive solutions, systems and leading-edge services. Customers from highly diverse industries such as oil & gas, energy, rail and commercial vehicles, ship technology, mining and mechanical engineering rely on the advanced technologies and solutions-driven expertise of Voith.

The Group Division Digital Ventures (until September 30, 2018: "Digital Solutions") brings together Voith's many years of automation and IT expertise with the know-how from the fields of hydropower, paper machines and drive technology. Founded in 2016, this Group Division acts as an incubator for Voith to advance the development of new digital products and services. In order to play a major role in shaping the digitalization taking place in the mechanical and plant engineering industry, Voith is pushing forward the Industrial Internet of Things (IIoT). The Group Division plays a central role in digital innovations and applications for new markets as well as in the development and responsibility for existing and new digital venture activities.

## 01.2. Management system

The key financial performance indicators for the Voith Group were previously the development of sales and orders received as well as profit from operations and return on capital employed (ROCE).

In the future, EBIT will replace profit from operations as our central performance indicator for operating results. In the 2018 annual report, we will use profit from operations retrospectively in addition to EBIT in order to facilitate a comparison with the forecasts made in the previous annual report. For the forecasts for the 2018/19 fiscal year and as of the 2019 annual report, we will consistently use the new performance indicator, EBIT.

Both performance indicators are based on an operating earnings indicator derived from external financial reporting, i.e. the operational result before non-recurring items presented in the statement of income. This figure is determined on the basis of operating activities and is calculated from sales less costs before taking account of non-recurring items, financial result and income taxes.

Some additional adjustment items are added to the operational result before non-recurring items to derive EBIT. These other adjustments contain individual effects which are shown within the consolidated statement of income as other operating income and expenses that, in relation to ordinary business activities, however, should be treated as non-recurring effects. EBIT is adjusted for these amounts in order to make it possible to come to a better assessment of the operating activities for internal control purposes.

In order to calculate profit from operations, the indicator we treated as authoritative to date, operating interest income is added to EBIT. We define operating interest income as interest received by the Company on the long-term financing of receivables from customers, or as the imputed interest effect attributable to that portion of customer advances that is not used to finance inventories and receivables from customer-specific contracts.

For more information on the calculation of ROCE, see the **Notes on segment reporting** section in the notes to the financial statements.

Capital employed describes the funds tied up within the business for the purpose of generating sales. These funds essentially comprise property, plant and equipment and net working capital.

ROCE is calculated by bringing the profit from operations and capital employed into relation with each other. Calculating the ratio of a performance indicator from the statement of income (profit from operations) to a figure based on the balance sheet (capital employed) is in compliance with generally accepted standards for holistic company management and with value-based management.

The indicators and reports submitted to the Corporate Board of Management of Voith GmbH & Co. KGaA as well as within the Group Divisions and the operating companies are based on these Group performance indicators.

## 01.3. Values, guidelines, compliance

### Voith – Inspiring Technology for Generations

The elements of the mission statement (vision, mission, claim and positioning) were drafted in English. The original English wording is definitive, the German text is a translation.

At Voith, we unite the culture of a family-owned business with that of a global player. We have summarized the way we see ourselves in a corporate mission statement.

Our vision: Voith is the technology partner for industrial generations.

This means for us: we create lasting value for our customers, help them make a positive impact on societies in various regions of the world. Our customers' success over generations and technology cycles enables us to secure Voith's long-term independence and value-oriented development success. We want to be our customers' first choice based on our technical, cultural and personal familiarity with their markets.

Four principles help us to achieve our vision. These are described in our mission statement:

1. We earn customers' loyalty.
2. We combine global strength with local entrepreneurship.
3. We inspire the best in our people.
4. We strive for excellence in everything we do.

Our values define how we should behave: we are respectful and reliable, open and ambitious. Our values, and the guidelines derived from them, ensure that Voith acts according to the same philosophy worldwide.

We have summarized this mission statement in our claim: "Inspiring Technology for Generations".

## Code of Conduct

Voith's Code of Conduct defines rules that govern dealings with customers and business partners as well as dealings between employees within the Company. We require each and every employee to comply with the applicable laws and our own internal guidelines (compliance). This applies to all levels of hierarchy throughout the Group. Infringements are met with sanctions. Rules and protocols are continuously updated according to the latest requirements.

The text of the Voith Code of Conduct is available on the Internet: **http://voith.com/corp-de/coc-english.pdf**

The main principles addressed by the Voith Code of Conduct are as follows:

- Compliance with the rules of fair competition
- No agreements that contravene competition law
- No corruption or bribery: no offering and granting or demanding and accepting of unfair benefits
- Transparency of donations and sponsorship
- Maintaining own and respecting third-party patents, intellectual property rights and Company secrets
- No undue preferential treatment of suppliers and service providers
- Respect for human rights, fair working conditions, and rejection of child and forced labor

Each employee is requested to report any suspicion of an infringement of the Code of Conduct. This can be done in person by reporting to the immediate supervisor or the compliance officer or by e-mail, letter, telephone or fax to one of the help desks. We also use this global whistleblower system to follow up anonymous complaints. The whistleblower system is also available to people outside the Company to report infringements of any kind.

## Compliance organization

The compliance program and related training measures are coordinated and refined by the Compliance Committee, whose chair reports directly to the CEO. This committee comprises the Head of Corporate Legal Affairs (chair), the Head of Corporate HR Management and the Head of Corporate Internal Audit. There are compliance officers in all units who are responsible for implementing the Code of Conduct in their field of competence.

However, it is the ultimate responsibility of each individual employee to act in accordance with our corporate values. In order to raise awareness of this, we ask our executives to act as role models and we also provide our employees with training. All Voith employees are required to take part in e-learning programs to ensure that their compliance knowledge is brought up to date every three years as a minimum. Employees without PC access are briefed by compliance officers or by their supervisors. In addition to the e-learning programs, executives at the top four levels as well as employees in sales and procurement also take part in classroom training covering important topics such as corruption, competition issues and export control. Compliance officers are required to undertake separate, in-depth training.

## 01.4. Group strategy

### Four strategic basic principles

At Voith, business success is defined as a long-term goal. As a family-owned company, Voith understood the importance of the sustainability mindset and of value-driven business long before these concepts became part of the economic debate. In the course of the Company's history covering more than 150 years, this approach has enabled Voith to overcome numerous obstacles, manage in turbulent times and to write industrial history. Voith's commercial strength is based on strategic basic principles which have been carefully built up over the decades:

Information on innovations at Voith can be found in section 05. **Research and development.**

1. Our diversified product portfolio which is based on megatrends
2. Our international footprint and local roots
3. Our innovative strength
4. Our financial independence as a family-owned company

### Strategy for profitable growth

Over recent years, Voith has overcome structural and financial challenges, set an important strategic course and improved its operating earnings power. Now, it is a matter of entering into a phase of sustainably profitable growth.

With eyes set on this highest objective and on the basis of the strategic basic principles already outlined, the Corporate Board of Management has been working on refining the corporate strategy over the course of the year under review. Based on an in-depth analysis, the Corporate Board of Management worked together with senior executive management to define central principles with a view to achieving profitable growth. Guided by these central principles, further action will be taken in the new 2018/19 fiscal year to specify the details of the Group strategy with the involvement of other employee levels. There are plans to hold Deep Dive Days on a regular basis starting in the 2018/19 fiscal year; these are events to discuss the status of implementation. In this context, not only market reviews are to be analyzed and decided on but also specific innovation projects and M&A objectives.

## Five core growth drivers

The core growth drivers we have identified are as follows:

1. simple and fast-acting structures as a basis
2. reinforcing the excellence initiatives
3. innovations and organic growth
4. strong market orientation of our digitalization activities
5. targeted M&A activities

## Simple and fast-acting structures as a basis

In the past, Voith maintained a large number of individual entities below the Group's parent company. This gave rise to a wide range of bureaucratic tasks, such as annual financial statements for each individual company as well as contracts within the Group and intragroup settlements. Speed is a prerequisite for market success. This is why we want to significantly simplify the legal structures. In Germany, implementation of this process has already been started.

In a first step, all material operating units in Germany in the Group Divisions Paper, Turbo and Digital Ventures (until September 30, 2018 "Digital Solutions") were merged into one company, J.M. Voith SE & Co. KG (formerly: J.M. Voith GmbH & Co. Beteiligungen KG), by October 1, 2018. Hydro is not part of this legal structure as it is a joint venture with Siemens.

More detailed information on how the Voith Group is organized can be found in section 01.1. **Group structure and business activities**.

In a second step, we are also reviewing how to simplify and harmonize the legal structures outside of Germany.

We are confident that dismantling bureaucratic hurdles will enable us to act faster, focus even more on our operating activities and ultimately to cut costs. On the other hand, the new legal structures will not involve any changes in the functions or areas of responsibility of the executive managers and employees or with regard to our collaboration with customers and service providers.

Along with bringing together companies that were previously separate legal entities, we have set ourselves the goal of acting even more closely as one company, irrespective of Group Division and business unit structures. Voith is more than the sum of its Group Divisions and we intend to make even greater use of these benefits. Senior management, beginning with the members of the Corporate Board of Management, will set an example by every single executive manager taking on even more responsibility for management of the Group and spreading this style of cooperation throughout the entire organization.

## Reinforcing the excellence initiatives

The initiatives launched in August 2017 as part of the Group-wide excellence program are being continued, extended and reinforced: the five modules – Operations Excellence (OPEX), Administration Excellence (ADEX), Product Improvement & Engineering Excellence (PEEX), Sales Excellence (SALEX) and Quality@Voith – have been supplemented by a sixth module: Digitalization. Since the end of the 2017/18 fiscal year, the six modules have each been managed directly by a member of the Corporate Board of Management, which signals the added importance attached to them. In addition, cooperation within the Group is being intensified across Group Division boundaries, and synergies within interdisciplinary topics such as production, quality and distribution are put to greater use. The primary objective is a sustainable rise in quality and productivity.

## Innovation and organic growth

Information on innovations at Voith can be found in section 05. **Research and development**.

Innovations are an important prerequisite for organic growth. This is why we make every effort to keep our technology pipeline as full as possible. The innovation projects underway in each individual Group Division will, in the future, be accompanied and tracked by the Corporate Board of Management on an ongoing basis at regular Deep Dive Days. In addition, we intend to open up further potential for organic growth in a targeted manner, for example in the service business as well as in regions where we currently have fewer activities, such as Africa.

## Strong market orientation of our digitalization activities

Since the 2015/16 fiscal year, we have made massive investments in Voith's digital transformation. Our objective is to play a major role in shaping the digitalization of industry. As an established technology leader with extensive domain knowledge that has a large installed base of plant and products on the market and in conjunction with our digital expertise, we consider ourselves to be in an excellent starting position in this respect. Within the framework of our digital agenda, we are pursuing three strategic directions: firstly, refining the existing product portfolio to include digital capabilities that offer customers additional functions and added value; secondly, developing new digital solutions for our traditional core markets; and thirdly, developing new applications for markets not yet covered by Voith.

We have substantially reinforced Voith's digital competence over the last two years. One important milestone, building up the organizational structures for the Group Division Digital Ventures (until September 30, 2018: "Digital Solutions"), has been reached. In addition, we have extended our portfolio of digital offerings to include new automation solutions and cloud-based solutions relating to the Internet of Things (IoT) through to completely new business models.

In 2018, we refined and sharpened collaboration and the distribution of responsibilities between the Group Division Digital Ventures and the three Group Divisions that make up the core business. Digital Ventures continues to provide support to the Group Divisions Hydro, Paper and Turbo in the development of their respective digital product portfolio by contributing its process know-how and its human resources. Furthermore, the Group Division is making an important contribution to drafting standards for the Group such as those required in connection with the modularization of the automation business. Starting in the 2018/19 fiscal year, the three Group Divisions Hydro, Paper and Turbo are responsible for marketing of the digital product portfolio for our traditional markets. This means that they are being given significantly more responsibility for building up and expanding the digital business in their markets. The sales generated will continue to be attributed in full to the respective Group Divisions of the core business. We are confident that this new form of cooperation will enable us to align our digital offerings even more closely to customer requirements and market them in a more targeted manner.

The Group Division's second central task: Digital Ventures will, in the future, additionally steer the development and management of new digital venture activities and act as an incubator to drive forward new digital business models for the entire Group. These may also include activities in markets not yet covered by Voith. This extends to responsibility for investments in businesses that originate from incubation projects (merQbiz, for example) or come into being through cooperation agreements with other companies (Voith Robotics, for example) or are purchased (Ray Sono, for example). For organizational purposes, these investments were brought together under the umbrella of this Group Division as of October 1, 2018. In line with the new focus, the Group Division has been known since then as "Digital Ventures" (previously: "Digital Solutions").

## Targeted M&A activities

Joint ventures and corporate acquisitions are a further means of promoting growth. The successful sale of our investment in KUKA has provided us with the necessary financial leeway. We use structured M&A processes to continually screen potential target companies for their suitability. Possible acquisition targets include profitable businesses with viable technology and above-average growth potential. They can either have the potential to round off our core business in the Group Divisions Hydro, Paper and Turbo, or constitute completely new activities for Voith.

## 01.5. Significant events

### Change at the head of the Group

The long-serving President and CEO, Dr. Hubert Lienhard, retired as planned at the age of 67, effective as of April 1, 2018. At the same time, Dr. Lienhard joined the Shareholders' Committee and the Supervisory Board, where he will continue to support the future development of the Group with his specialist expertise.

Stephan Schaller, who had already supported Voith since 2015 as a member of Voith's Shareholders' Committee, took on the role of President and CEO on April 1, 2018. Effective as of October 23, 2018, Mr. Schaller resigned from his office.

The Shareholders' Committee appointed Dr. Toralf Haag as his successor at the head of the Corporate Board of Management. Dr. Haag has been a member of the Corporate Board of Management since October 2016 and was, to date, responsible for finance and controlling. He will retain the finance portfolio and, from October 23, 2018 onwards, has exercised both functions at the same time.

### Further changes on the Corporate Board of Management

Andreas Endters joined the Corporate Board of Management effective as of October 1, 2017, assuming responsibility for the Group Division Paper. Mr. Endters has already been involved with Voith for more than 20 years and immediately prior to his appointment to the Corporate Board of Management he had headed the Projects Division (new machines and major rebuilds) in the Group Division Paper. Mr. Endters succeeded Bertram Staudenmaier who expressed his wish not to extend his contract that expired at the end of the 2016/17 fiscal year.

### Number of members on the Supervisory Board reduced in line with the statutes

Following the successful sale of the Group Division Industrial Services in 2016, the workforce based in Germany has fallen below 10,000. In accordance with the Company statutes and the requirements of the law, the number of members on the Supervisory Board was reduced to twelve in December 2017. The Supervisory Board will continue to have equal numbers of shareholder and employee representatives.

# 02. Business development and earnings position of the Group

**Voith performed well in the 2017/18 fiscal year. Its operating business developed solidly, but was impacted by significant currency effects. The Hydro Group Division performing less well than planned was almost compensated for by very good figures in the Paper Group Division. As expected, the Turbo Group Division grew slightly. The Company's digital transformation is progressing on schedule and the young Digital Ventures Group Division showed the expected volume growth. Adjusted for currency effects, Group sales and orders received increased slightly. The build-up costs for Digital Ventures were shouldered by the profitable core business. However, it was not possible to reach the previous year's level of the Group's operating results due to the decrease at Hydro, currency effects and a non-recurring effect in Turbo. There has been a significant rise in net income, after adjusting for the KUKA effect in the previous year.**

## 02.1. Overall assessment

### Solid operating business performance, considerable negative currency effects, net income significantly increased, after adjusting for the KUKA effect in the previous year

Voith looks back on an overall satisfactory 2017/18 fiscal year (October 1, 2017 to September 30, 2018): in a sometimes challenging environment, although we did not meet all our targets, our operating business developed solidly again and net income – adjusted for the KUKA effect in the previous year – increased significantly. In addition, we further strengthened our equity ratio and advanced our digital agenda.

The Voith Group's key operating performance indicators reveal a mixed picture and are impacted by currency effects as a result of the euro exchange rate rising against almost all the currencies important for the Group compared to the previous year. On a currency adjusted basis, sales (€4,209 million) and orders received (€4,285 million) increased slightly. Orders on hand remained at a high level (€5,172 million). The broad-based positioning of the Voith Group has once again paid off. While the Hydro Group Division suffered unexpected deterioration in a challenging environment, the Paper Group Division stood out positively with very good figures, particularly in orders received. Turbo performed well. The young Digital Ventures Group Division showed the expected strong percentage growth in sales.

We were unable to reach the previous year's level in the Group's profit from operations (€211 million, -17%) – primarily due to the Hydro Group Division performing less well than planned. Profits were also impacted by currency effects, as well as by a negative non-recurring effect in Turbo. As announced, the profitable core business was able to shoulder the build-up costs for the young Digital Ventures Group Division.

The information on the operating business in the annual report relates to the Voith Group's continuing operations. In line with the rules of International Financial Reporting Standards (IFRS 5), the activities of Voith Composites are, however, treated as discontinued operations. The background to this is that during the year under review the Corporate Board of Management decided to sell this company, which had previously been centrally located in the Corporate Functions & Services department. Treatment as a discontinued operation means that the assets and liabilities of Voith Composites are shown separately in the balance sheet. In the context of the consolidated statement of income, the company's sales and expenses are no longer shown in the Voith Group's separate income and expense components. Instead, the total contribution made by the company held for sale is included in the consolidated net result in the "Net result from discontinued operations" item. The figures for the previous year in the statement of income and the associated notes to the financial statements have been adjusted in the same way.

The net result from continuing operations amounted to €85 million. The previous-year figure (€612 million) had been exceptionally high, largely due to the sale of the shares in KUKA Aktiengesellschaft. After adjusting for the KUKA effect in the previous year, this year's increase is 73%.

Including the net result from discontinued operations, the consolidated net result is €53 million (previous year: €596 million). After adjusting for the KUKA effect in the previous year, net income increased by 61%.

The net assets and the financial position of the Group remain at a very good level. As at September 30, 2018, Voith had net liquidity of €557 million. The equity ratio was further improved by reducing debt and increased to 28.7% at the end of the year under review (previous year: 27.3%).

## 02.2. Economic environment

### Global economy in good shape

The global economy remained in good shape over the 2017/18 fiscal year. In its most recent release (October 2018), the International Monetary Fund (IMF) forecasts global economic growth for 2018 of 3.7%, the same level as the previous year. These are the highest rates of growth since 2011.

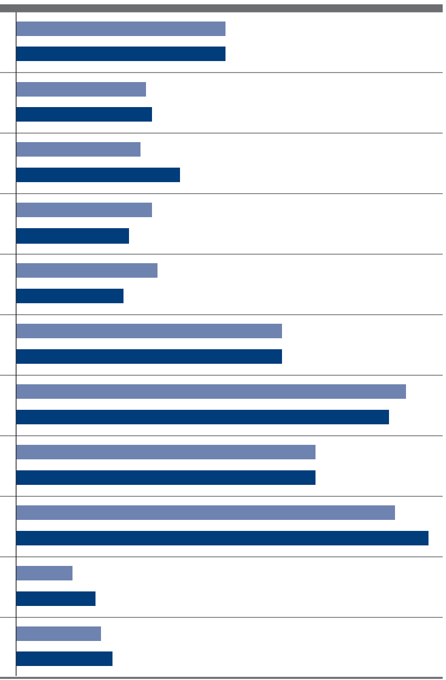
A broad-based upswing was seen in all regions of the world. The advanced economies continued to see sound growth that is, however, increasingly unevenly distributed. For example, the IMF anticipates a growth rate of 2.4% in 2018 for the advanced economies seen as a whole, after 2.3% in the previous year. The pace of economic growth in the USA has increased perceptibly since the passing of the corporate tax reform at the end of 2017, with IMF estimates seeing the GDP growth rate rise from 2.2% (2017) to 2.9% (2018). After Germany and the euro zone as a whole had enjoyed growth roughly at the average for the advanced economies in 2017, growth rates of only 2.0% (euro zone) and 1.9% (Germany) are anticipated for 2018. Growth perceptibly below the average for the advanced economies was seen in Italy (IMF forecast for 2018: +1.2%) and in Japan (IMF forecast for 2018: +1.1%).

The emerging markets as a whole continued to grow at a higher rate than advanced economies. In this context, the IMF is anticipating growth rates in the emerging markets of 4.7% in each of 2017 and 2018, with the figure for Asia being higher than the average. China is likely to achieve the targets set out in its own five-year plan (raising gross domestic product by an annual 6.5% or more) once again in 2018, despite a slightly slacker pace of growth in comparison to the previous year. Rising international demand, progress being made in the national reform programs and expansionary monetary policy contribute to the good developments in the Chinese economy. Following successful implementation of the currency and tax reform, the Indian economy has accelerated perceptibly. India is growing at a faster rate, expressed as a percentage, than China, albeit at a lower absolute level (IMF forecast for 2018: +7.3%). The ASEAN-5 countries showed the dynamic development expected. In South America, growth rates remained significantly behind global developments. This also applies to Brazil, an important sales market (IMF forecast for 2018: +1.4%), where the political and economic crisis apparently remains unresolved. Russia benefited from rising crude oil prices but is nevertheless still suffering from the consequences of the trade sanctions (IMF forecast for 2018: +1.7%).

The improved economic data exerted a positive influence on the global investment climate. According to data provided by the VDMA, the German Mechanical Engineering Industry Association, the German mechanical and plant engineering sector reported a perceptible rise in orders received in the reporting period in comparison to the previous-year period.

**Economic growth**
Real change in GDP on the previous year[1)]

| | | |
|---|---|---|
| **World output** | 2017 | 3.7% |
| | **2018** | **3.7%** |
| **Advanced economies** | 2017 | 2.3% |
| | **2018** | **2.4%** |
| USA | 2017 | 2.2% |
| | **2018** | **2.9%** |
| Euro area[2)] | 2017 | 2.4% |
| | **2018** | **2.0%** |
| Germany | 2017 | 2.5% |
| | **2018** | **1.9%** |
| **Emerging market and developing economies** | 2017 | 4.7% |
| | **2018** | **4.7%** |
| China | 2017 | 6.9% |
| | **2018** | **6.6%** |
| ASEAN-5 | 2017 | 5.3% |
| | **2018** | **5.3%** |
| India | 2017 | 6.7% |
| | **2018** | **7.3%** |
| Brazil | 2017 | 1.0% |
| | **2018** | **1.4%** |
| Russia | 2017 | 1.5% |
| | **2018** | **1.7%** |



Source: International Monetary Fund (IMF); World Economic Outlook, Oct. 2018.
1) 2017: estimates; 2018: forecasts.
2) Including Germany.

## Voith markets: investment climate somewhat brighter

The investment climate was also somewhat brighter in the five target markets served by Voith. The paper market in particular remained at a very high level.

### Energy: expansion of renewable energies continues apace

The energy market encompasses the conversion of various primary energy sources such as coal, gas, wind or hydropower into electricity and various forms of storage. This market is served by the Group Divisions Hydro and Turbo.

The global energy market is marked by two long-term trends: demand is shifting to the emerging markets, above all China and India, and supply is increasingly covered by low-emission, sustainable sources of energy, in particular renewable energies. These long-term trends are overlaid by cyclical developments and short-term volatile swings over the course of individual years.

According to the most recent figures available, electricity consumption and electricity generation rose perceptibly in 2017. China made a major contribution to the rise in energy demand but energy needs also increased in the advanced economies with the upswing in the global economy.

The share of renewable energy in global electricity generation is continually on the rise. Renewable energy made up more than 60% of all new electricity generation capacities added worldwide in 2017. Correspondingly, investments in renewable energies continued to rise. In terms of addition of generating capacity, solar energy dominated by far. More net solar capacity was added in 2017 than generation capacities from coal, gas and nuclear together. Conventional generation also saw net additions. However, the rate of growth for coal, gas and nuclear flattened out and more oil-fired capacity was taken out of service than added in 2017.

There is capacity growth in the area of hydropower, which in the meantime provides more than half of renewable electricity generation capacity. On account of the large investment volume involved in many hydropower projects, the market volume may, however, fluctuate greatly from year to year. The volume of contracts awarded in the 2017/18 fiscal year that were relevant to our Group Division Hydro was below the long-term average but up on the weak previous-year level. In this context, the global market volume for pumped storage technology has grown significantly in the course of the expansion of wind and solar energy, driven by strong demand from China. Investment in the market for conventional power plant technology, which is relevant for our Group Division Turbo, stabilized at a low level during the year under review.

### Oil & gas: investment activity remains subdued

The oil & gas market comprises three segments: upstream involving the extraction of crude oil and natural gas, midstream involving transport of raw materials primarily via pipelines and tankers, and downstream consisting of the refining of crude oil and natural gas into the various fuels and raw materials used by the chemicals industry. The Group Division Turbo provides user-specific products and services to all the segments of this market.

The recovery in the oil price continued over the 2017/18 fiscal year. The price for one barrel of Brent oil rose from below USD 60 to above the psychologically important level of USD 80 at the end of the year under review. In a long-term comparison, at the level reached at the end of the year under review, the oil price remained roughly in the middle between the 10-year high and the 10-year low. In this context, global production rose slightly over the course of the year under review. Demand for oil was similarly up on the previous year but is expected to grow at a slower rate than supply over 2018 seen as a whole – as a reaction to price increases, among other factors.

After the price increase in the previous year, the gas price (Henry Hub) stabilized in the 2017/18 fiscal year between USD 2.50 and USD 3.60 per 1 million British thermal units. At the end of the year under review, it stood at around USD 3.00, roughly the previous year's level, and therefore still 50% below the 2014 level, before prices began to fall. In this context, global demand for natural gas, driven by China, has increased.

Some segments of the oil & gas market saw a slight recovery in investment activity over the year under review; investments remained at a low level overall, however. The positive climate surrounding US shale oil production continued; in contrast, there was a decline in investment in major offshore projects in particular. The trend towards projects with shorter amortization periods, such as expansion drilling and technologies that extend the lifespan of an oil or gas field, continued, while investment in new exploration projects fell for the eighth consecutive year and were at a historical low.

### Paper: paper machine market remains at a high level

The paper market comprises all aspects of the papermaking process, from preparation of recovered paper through paper production including surface finishing through calendering and coating to reeling of paper webs. The Group Division Paper serves this market for all grades of paper – board and packaging paper, tissue, specialty papers and graphic paper, such as newspaper and printing paper. Its range of offers includes new machines, rebuilds of entire production facilities, automation technology, partial rebuilds, services and spare parts, optimization products, roll covers and fabrics, preparation of primary (pulp) and secondary fiber (wastepaper) and water treatment facilities.

Global paper production rose in Voith's 2017/18 fiscal year, according to estimates by industry analysts at RISI, and is set to grow more dynamically in the years ahead. There is potential for growth specifically with regard to board and packaging paper grades. There is rising demand for these products in all regions in the wake of expanding online shopping, supported by efforts to replace plastic as packaging material. The highest growth rates in board and packaging papers in absolute terms are anticipated in Asia, followed by the EMEA and North America regions. The consumption of tissue paper is also set to rise with the strongly growing middle class in Asia. Graphic paper is the only grade of paper to see a decline in production caused by ongoing digitalization of everyday life. Asia experienced by far the highest levels of growth in paper production in the year under review and is regarded as the driver for growth in the years ahead. The EMEA region also made a significant contribution to global production growth over the year under review.

In the past fiscal year, new machines and rebuilds, a vital market for Voith, unexpectedly continued the high level of the previous year. At the same time, the board, packaging paper and specialty papers segments saw especially positive developments. The paper machine business picked up vigorously, particularly in Asia and Europe. Further impetus came from North America. There was virtually no demand from South America for new plants owing to the unresolved economic and political crisis in Brazil.

Demand for consumables and services has picked up as volumes of paper production have also risen substantially.

### Raw materials: slow recovery

We define raw materials as ores and minerals that are extracted from the earth, such as coal, copper and iron ore, as well as other geological materials such as sediments used in building. By contrast, the raw materials oil and gas are considered separately as part of the oil & gas market. The segments of the raw materials market that are of relevance for Voith are mining and the steel industry. Both are supplied by the Group Division Turbo.

The raw materials market showed a slight recovery in the year under review. Starting from a very low level, the prices of important raw materials, such as coal and copper, rose over the year under review, driven by increasing demand from Asia. Concerns about a US trade dispute with China and the rising dollar exchange rate as of the second half of the fiscal year started exerting pressure on raw material prices again, however. Investment in mining projects increased perceptibly in 2018 for the first time since 2013, nevertheless. This development was preceded by several years of recession – triggered by excess capacities and dramatically falling prices – over the course of which investment volume in the mining sector more than halved between 2013 and 2016.

Global crude steel production expanded somewhat during the 2017/18 fiscal year. Steel prices recovered in all regions. This said, there is movement in the market on account of the punitive tariffs imposed by the USA. All in all, global capacity utilization remains low, so that investment activity in the steel industry remained subdued.

### Transport & automotive: growth overall moderate, but stable

The transport & automotive market includes diverse transport routes and the means of transport used on them for moving people and goods. The Group Division Turbo serves this diverse market, supplying drive components and solutions as well as braking systems for the commercial vehicle industry, the rail sector and also the marine segment.

The market for heavy-duty trucks and buses remained at a high level over the year under review. This said, global truck production grew only slightly, in 2018 after the strong growth seen in 2017. The main reason for this development is that the Chinese market is returning to a normal level after the record volume seen in the previous year. More than one-third of all new heavy commercial vehicles produced worldwide are sold in China. The decline in China was more than compensated for by growth in Southern Asia and North America. The bus segment grew in the 2017/18 fiscal year. The large Asian market was the growth driver. After contractions in the previous year, China and India returned to rising sales figures in 2018. Russia saw perceptible growth, favored by the temporary boom triggered by the Soccer World Cup. Brazil recovered and showed strong growth at a low level. The Western European market saw slight growth and North America remained just below the high previous-year level. Demand for services relating to commercial vehicles saw positive developments.

The rail segment, which is dominated by public sector investment in infrastructure, developed slightly positively on the whole over the year under review. This said, the large Chinese market continued to lose momentum. Following decades of exceptional growth and major infrastructure investments, market analysts predict that the Chinese market will stagnate over the coming years due to declining government investment in the high-speed network and stricter conditions being imposed on investment in metro systems. The original equipment manufacturer (OEM) segment is more severely affected than most others – it was already in decline in the year under review and is expected to contract by more than 5% per year until 2022. By contrast, established markets such as Europe and North America are experiencing above-average growth; this development is being driven by the modernization and digitalization of existing networks and expansion of local public transport systems in conurbations. The service business is growing more strongly than the OEM business. The consolidation of the global rail market is continuing, the competitive pressure remains high.

The marine market appears to have passed through the trough after several years of recession. In the year under review, however, investment remained at a low level.

## 02.3. Sales

### Sales adjusted for currency effects increased by 4%

In the 2017/18 fiscal year, Voith achieved Group sales of €4,209 million, almost unchanged compared to the figure in the previous year (€4,224 million, -0%).

Adjusted for currency effects, the Group's sales increased by 4%. However, negative currency effects of around €-160 million masked the positive operating performance. All three Group Divisions of the core business were affected by the currency effects, if not to the same degree.

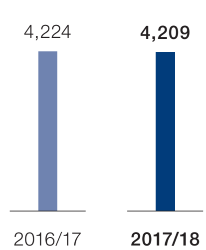
We did not achieve our forecast for the 2017/18 fiscal year (2017 annual report: "perceptible rise"). The primary cause of the only stable performance were the considerable currency effects in the core business. In addition, the Group Division Hydro performed less well than planned (-20%). By contrast, the other three Group Divisions saw sales growth: Paper of 14%, Turbo of 1% and Digital Ventures of 214%.

Detailed information on the development of sales in each Group Division can be found in section 03. **Business development and earnings position of the Group Divisions**.

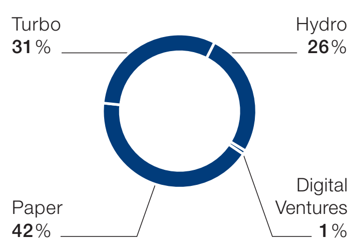
The Group Division Paper made the largest contribution to the Voith Group's sales at 42% (previous year: 36%). Turbo accounted for 31% (previous year: 31%) and Hydro for 26% (previous year: 33%) of total sales. The contribution made by Digital Ventures was only 1% owing to the fact this new Group Division is still in the start-up stage.

The regional distribution of Group sales was as follows: the regions with the strongest sales were Asia, Europe excluding Germany, and the Americas. Asia contributed 30% (previous year: 27%) to total sales. 28% (previous year: 26%) of Group sales were attributable to Europe excluding Germany. The Americas accounted for 26% (previous year: 28%) of total sales. Germany again contributed 13%. 3% of Group sales (previous year: 6%) were attributable to other regions (particularly Africa and Australia).

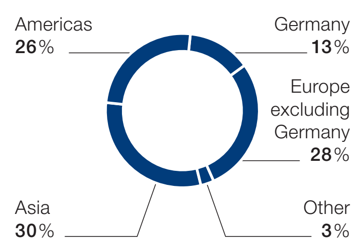
**Sales** Group
in € millions




**Sales** total €4,209 million
by Group Division




by region



## 02.4. Orders received

### Currency adjusted orders received higher than previous year

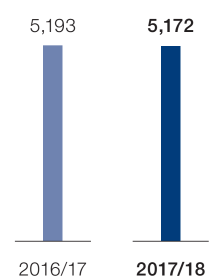
In the 2017/18 fiscal year, the Voith Group secured new orders worth €4,285 million (previous year: €4,367 million, -2%). After adjustment for currency effects of €-155 million, slightly positive performance (+2%) can be seen. Adjusted for currency effects, we achieved the forecast for the Group's orders received (2017 annual report: "slight growth").

Detailed information on the development of orders received in each Group Division can be found in section 03. **Business development and earnings position of the Group Divisions**.

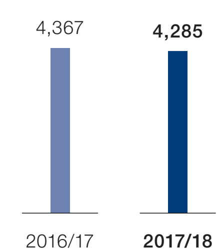
The Group Divisions' performance in terms of orders received varied. Paper provided a positive surprise (+10%), reaching a record level of orders received. The Group Division Turbo likewise saw a slight increase in orders received (+3%). By contrast, Hydro was significantly below the previous year (-27%), partly as a result of delays in the awarding of several major projects and partly due to more intense competition on the global hydropower market.

The Group Division Paper contributed 47% (previous year: 42%) to the Group's orders received. Turbo accounted for 32% (previous year: 31%). The Group Division Hydro accounted for 20% (previous year: 27%).

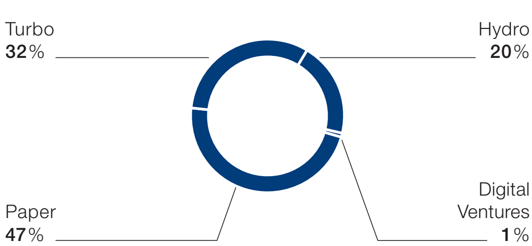
**Orders on hand** Group
in € millions



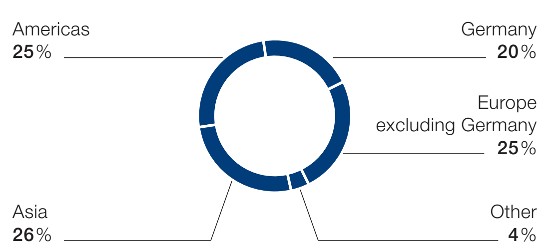

**Orders received** Group
in € millions




**Orders received** total €4,285 million
by Group Division




by region



From a regional perspective, orders received in Germany were particularly strong, driven by the Paper and Turbo Group Divisions. Our home market's share of total orders received thus increased from 12% in the previous year to 20% in the 2017/18 fiscal year. Asia's share fell to 26% (previous year: 32%). Each representing 25% of the Group's orders received, the Americas (previous year: 23%) and Europe excluding Germany (previous year: 28%) were roughly level in the year under review. All the other regions contributed 4% (previous year: 5%) of new business.

As at the end of the fiscal year, orders on hand in the Voith Group were worth €5,172 million (previous year: €5,193 million).

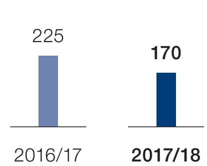
## 02.5. Net result

### Total output stable, profit from operations characterized by up-front costs of digitalization activities and a challenging environment in the hydropower business

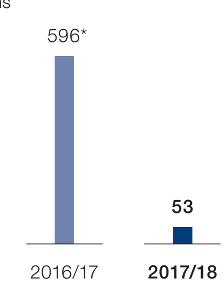
As already pointed out elsewhere, the activities of Voith Composites are treated as discontinued operations due to the intention to sell this company. The separate income and expense components in the consolidated statement of income contain continuing operations and are consequently shown after adjustment for the relevant share of Voith Composites. The total contribution to the Voith Group's net result made by Voith Composites is shown in the net result from discontinued operations item. The previous year's statement of income was adjusted in the same way.

The Group net result, which in the previous year had been significantly influenced by the sale of the shares in KUKA Aktiengesellschaft, amounted to €53 million in the year under review (previous year: €596 million). Adjusted for the KUKA effect seen in the previous year, a clear increase in net income was evident, which was achieved through improvement of interest income/expense and the other financial result.

**Operational result before non-recurring items**
Group in € millions




**Net result**
Group in € millions




* Including the effect on results from the sale of the KUKA shares.

The total output in the Voith Group was stable at €4,251 million (previous year: €4,239 million), although adjusted for currency effects an increase of 4% was achieved. The total output was thus almost on a par with the development of sales (€4,209 million, +/-0%). Similarly, the Group Divisions' respective total outputs essentially developed in line with sales (Hydro -19%, Paper +12%, Turbo +2% and Digital Ventures +66%).

The cost of materials increased to €1,888 million (previous year: €1,840 million, +3%). The ratio of cost of materials to total output rose slightly to 44.4% (previous year: 43.4%). The increase is essentially due to a higher ratio of cost of materials to total output in the Group Division Paper.

Personnel expenses stood at €1,447 million (previous year: €1,408 million, +3%). This reflects the slight increase in headcount and ongoing rises in personnel expenses due to collectively bargained pay rises. The personnel expenses ratio (ratio of personnel expenses to total output) thus rose slightly to 34.0% (previous year: 33.4%).

Depreciation and amortization amounted to €121 million (previous year: €126 million, -4%). The ratio of depreciation and amortization to total output decreased to 2.8% (previous year: 3.0%).

The net balance of other operating expenses and income fell to €626 million (previous year: €639 million, -2%). One reason for the decrease is the reduction of expenses from the setting up of provisions for warranty-related costs.

Detailed information on the development of net result, return on sales and ROCE by Group Division can be found in section 03. **Business development and earnings position of the Group Divisions**.

The operational result before non-recurring items stood at €170 million (previous year: €225 million, -24%). Profit from operations, an indicator used for internal management purposes, came to €211 million (previous year: €254 million, -17%). EBIT was €187 million (previous year: €226 million, -17%) and developed in line with profit from operations. The return on sales calculated on the basis of profit from operations fell to 5.0% (previous year: 6.0%), ROCE (return on capital employed) fell to 10.6% (previous year: 12.4%). The slight increase in profit from operations and ROCE anticipated in the 2017 annual report was thus not achieved. The main reasons were the Hydro Group Division performing less well than planned, negative currency effects and a non-recurring effect in the Turbo Group Division. In the core business profit from operations fell by 12% to €267 million (previous year: €304 million) and return on sales fell to 6.4% (previous year: 7.3%). ROCE in the core business fell to 15.1% (previous year: 15.9%).

The non-recurring result stood at €-22 million (previous year: €-32 million). In the reporting period, the non-recurring result mainly comprises personnel-related expenses arising from measures to consolidate production capacities and boost competitiveness at Hydro in Brazil and Europe as well as at Paper in the UK and the USA. In the previous-year period, the non-recurring result essentially comprised personnel-related and other expenses arising from measures to consolidate production capacities and boost the competitiveness at Hydro in Brazil, at Paper in the USA and at Turbo in Germany as well as expenses arising from donor pledges amounting to €13 million. Specifically, Hydro contributed €-12 million to the non-recurring result in the year under review (previous year: €-7 million), Paper €-7 million (previous year: €-5 million), Turbo €0 (previous year: €-6 million) and the Corporate Functions & Services Division €-3 million (previous year: €-14 million).

The operational result was €148 million (previous year: €193 million, -23%).

The previous year's result from the sale of associates of €563 million (2017/18 fiscal year: €0) contains the effect on results from the sale of the shares in KUKA Aktiengesellschaft completed in January 2017.

Net interest income/expense improved to €-17 million (previous year: €-59 million, -72%). The improvement stems mainly from a €24 million fall in interest expenses as a result of the redemption of the capital market bond at the end of the 2016/17 fiscal year. In addition, there was interest income of €9 million from the measurement of financial liabilities on account of termination rights on the part of holders of non-controlling interests. Interest expense of €-14 million resulted from this in the previous year.

The other financial result was positive at €19 million (previous year: €-10 million). This item is impacted to a significant extent by income from the sale of the remaining 20% interest in the former Industrial Services Group Division (€18 million). Currency gains and losses on long-term financing positions and the measurement of the related hedge relationships also improved (balance of €-4 million, previous year: €-28 million).

Income taxes totaled €-67 million (previous year: €-82 million).

The net result from continuing operations amounted to €85 million. The previous-year figure had been exceptionally high with the sale of the shares in KUKA Aktiengesellschaft making a significant contribution (previous year: €612 million). After adjustment for the KUKA effect in the previous year, the net result from continuing operations increased by 73%.

The net result from discontinued operations amounted to €-32 million in the year under review (previous year: €-16 million). This is the contribution to the Voith Group's net result made by the operations of Voith Composites, which are held for sale. In the previous year, this item contained the contribution to the Voith Group's net result made by Voith Composites and the since divested Group Division Industrial Services due to adjustments from expected tax expenses in connection with the disposal.

Overall, the Group's net result comes to €53 million (previous year: €596 million). The Group net result of the previous year was significantly influenced by the sale of the shares in KUKA Aktiengesellschaft. After adjusting for the KUKA effect in the previous year, a clear increase of 61% emerges.

# 03. Business development and earnings position of the Group Divisions

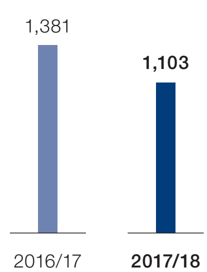
**The development of the three established Group Divisions was mixed in the year under review. The Group Division Paper stood out with a significant increase in sales and results while exceeding its targets for orders received. As announced, Turbo exhibited slight growth in sales and orders received. The profit from operations recognized for Turbo in the segment reporting was below the previous year's level – impacted by a negative non-recurring effect. Hydro remained below our expectations on account of the competitive situation. The expansion of our digitalization activities is progressing on schedule. It was possible to shoulder the up-front costs for the Digital Ventures Group Division from current business.**

## 03.1. Hydro

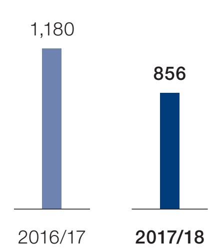
### Good performance in challenging market environment

The Group Division Hydro looks back on a fiscal year with numerous challenges. Orders received, sales and earnings decreased and were below the forecast levels. In addition to delays in the construction work for the realization of some major orders and delays in projects being awarded, the main reason for the negative development was more intense competition on the global hydropower market. All key performance indicators were impacted by negative currency effects.

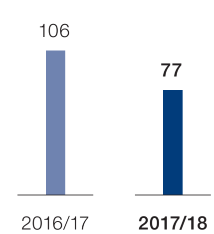
**Sales** Hydro
in € millions




**Orders received** Hydro
in € millions




**Profit from operations** Hydro
in € millions



### Sales down on the previous year

In the 2017/18 fiscal year, the Group Division Hydro achieved sales of €1,103 million (previous year: €1,381 million, -20%). We thus missed our sales target (2017 annual report: “stable performance”). The clear decrease is essentially a consequence of the low level of orders received on account of the market situation prevailing in the previous year and the year under review. In addition, there were delays in the construction work for some major projects, which means that revenue recognition is postponed. A not inconsiderable share of the fall in sales is attributable to negative currency effects. The regions with the strongest sales were Asia and North America, where we had recorded a high level of orders received in previous years.

### Orders received fell significantly

In the 2017/18 fiscal year, the volume of the hydropower market was below the long-term average, but above the very low level of the previous year. In contrast, the small hydro segment (plants with an output of up to 30 megawatts per unit) remained roughly at the level of the previous year because the overall conditions for small hydropower plants remain difficult owing to insufficient funding and inadequate financing models in many countries. The high demand for pumped storage technology, which primarily came from China, was noteworthy. Demand for services also rose during the year under review. However, in the fundamentally brightened market environment, the intensity of competition has significantly increased.

In the 2017/18 fiscal year, Voith generated orders received of €856 million with the Group Division Hydro (previous year: €1,180 million, -27%). The significant decrease means we missed our target (forecast in the 2017 annual report: “appreciable increase”). Firstly, there was another delay in concluding the contract in a major project, meaning that we anticipate a certain catch-up effect in the following year. Secondly, significantly more intense competition arose in the global hydropower market. Negative currency effects are putting additional pressure on the Group Division Hydro’s orders received.

At €2,687 million as at September 30, 2018, orders on hand remained below the high level seen at the end of the 2016/17 fiscal year (September 30, 2017: €2,976 million).

Measured in terms of volume awarded, Asia was the dominant hydropower market in the reporting period. In China, there is great demand for pumped storage power plants that contribute to the reliability of electricity supplies and grid stability in light of the volatility of wind and solar power. Voith won an extensive order to equip Tian Chi pumped storage power plant in the eastern Chinese province of Henan with a total output of 1,200 megawatts. In Japan, we were awarded the contract for the Gokasegawa and Kuzuyama small hydro projects. In Indonesia we are delivering several StreamDiver units for the small hydropower plant located on the Serayu River. Like other reference orders in the year under review, for example in Austria and Brazil, this order shows that our innovative StreamDiver Technology for small hydropower stations has now gained international acceptance.

The important hydropower market of Brazil, where the awarding of major infrastructure projects was impeded by the economic and political crises for several years, is showing signs of a slight recovery. Modernization and service activities are picking up since the Brazilian government tendered licenses in 2017 for the operation of hydropower plants that had previously been state run and awarded the contracts to Chinese and European energy producers. In the reporting period, Voith posted a further order tranche in connection with the Belo Monte hydropower plant in Brazil, currently the third largest hydropower plant in the world. Construction began in 2012.

In the established North American market, the focus was on modernization and service projects. In the year under review, Voith was awarded extensive service and modernization contracts in the US, such as for the Spring Creek and Cherokee projects.

In Europe, the hydropower market remains at a low level due to the energy policy situation. In the 2017/18 fiscal year, we succeeded in winning two noteworthy contracts. In Luxembourg, Voith has taken on the task of modernizing Vianden pumped storage power plant, which feeds power into the German electricity grid and is used in network regulation within the scope of the energy transition. In Portugal we were awarded the contract for the new Alto Tamega hydropower plant.

The service business ("HyService") remained an important mainstay for the Group Division Hydro. In the year under review, we were successful in tenders for major service projects in the US, France, Japan, Sweden, India and Italy. We succeeded in winning further large service contracts in the UK, Egypt, Thailand and Canada.

### Subsidiaries opened in Australia and East Africa

In March 2018, Voith opened a Hydro subsidiary in Sydney, which will support hydropower projects in Australia and New Zealand, and will at the same time serve as a HyService hub within easy reach of manufacturers and customers in the region. A new center for hydropower projects in East Africa was opened in the Ethiopian capital of Addis Ababa in May 2018. We plan and coordinate projects in nine countries in the east of the African continent from the new facility.

In the 2018/19 fiscal year, we are reorganizing our management system and using EBIT instead of profit from operations as our key operating earnings indicator. Definitions of both performance indicators and further information can be found in section 01.2. **Management system**.

### Operating result down

Due to the downward sales trend, the Group Division Hydro was also unable to reach its results target. Hydro generated profit from operations of €77 million in the 2017/18 fiscal year (previous year: €106 million). This figure contains a positive non-recurring effect in the low double-digit millions arising from the capitalization of claims for damages awarded by an arbitration tribunal. That is equivalent to a decrease of 28%. We had still anticipated stable development of profit from operations in the 2017 annual report. EBIT developed in line with profit from operations (-26%) and was €66 million in the year under review. Return on sales and ROCE likewise decreased on account of the decline in earnings but remained at a good level, nonetheless. The Group Division Hydro achieved a return on sales of 7.0% (previous year: 7.7%) and an ROCE of 16.9% (previous year: 21.8%). Improvements in capital employed only partially compensated for the decrease in operating result. This meant that the forecast slight rise in ROCE was not achieved.

## 03.2. Paper

### A very good fiscal year

The Group Division Paper looks back on a very good fiscal year in which its own targets were in some cases exceeded despite considerable negative currency effects. Voith operated extremely successfully in a very positive investment climate and was again able to exceed the high level of orders received in the previous year. Sales and profits also rose. While return on sales decreased slightly due to a change in sales mix, ROCE improved as a result of an increase in profit from operations while capital employed declined.

#### Sales grow by 14%

In the 2017/18 fiscal year, the Group Division Paper increased its sales by 14% to €1,746 million despite considerable negative currency effects (previous year: €1,527 million). The "perceptible rise" forecast in the 2017 annual report was thus achieved.

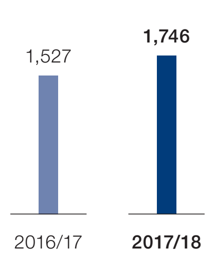
Growth was driven by the very good project business (new machines and major rebuilds). In business with products, consumables and services, we also achieved a slight rise in sales after adjustment for currency effects.

The region with the strongest sales was Asia, where the highest sales growth was also achieved. The Europe excluding Germany region also made a significant contribution to sales and exhibited clear growth.

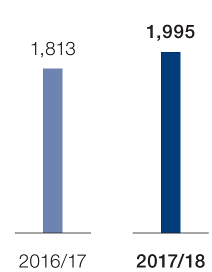
#### Orders received at record level

Starting from a very high level of orders received in the previous year, the Group Division Paper was again able to noticeably increase its orders received. In the 2017/18 fiscal year, Paper received new orders worth €1,995 million (previous year: €1,813 million), an increase of 10% compared to the comparative period. Adjusted for currency effects, the growth is even more obvious. This means that we have clearly exceeded our own expectations. As forecast in our 2017 annual report we expected orders received in the 2017/18 fiscal year to decline perceptibly – because of the high level in the previous year, which was marked by several major projects.

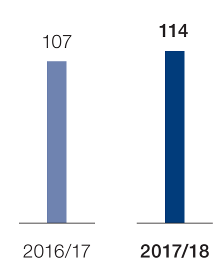
**Sales** Paper
in € millions




**Orders received** Paper
in € millions




**Profit from operations** Paper
in € millions



The continuing positive trend is firstly a result of successfully focusing on the growth segments of board and packaging as well as specialty paper. Secondly, the strong growth was facilitated by the very good investment climate, in which a large number of major projects were awarded.

The Group Division Paper's orders on hand increased appreciably and stood at €1,434 million at the end of the fiscal year on September 30, 2018 (September 30, 2017: €1,228 million).

On the paper market, there was an overall slight rise in production across all grades of paper in light of the healthy global economy. In particular, there is very great demand for board and packaging paper in all regions apart from South America. This is caused by growing e-commerce and the efforts to replace plastic as a packaging material. There is also strong demand for specialty papers. The production of graphic paper is the only grade of paper still in decline, as expected.

In the EMEA region, where many manufacturers are currently exploiting their good earnings position to make strategic investments for the future, the demand for new machines and rebuilds remained strong. In Germany, Voith's gains included two comprehensive new machine projects. For example, we won contracts for the manufacture of a plant for the production of testliner and corrugated medium with an annual production capacity of 750,000 metric tons and for the delivery of one of the highest performance specialty paper machines in the world. We received another major contract from a Turkish paper manufacturer for whom we will create a plant for the production of high-quality board and packaging paper.

In Asia, paper manufacturers again made considerable investments in new machines and in modernizing existing plants, although at a somewhat lower level than in the previous year. The focus of investment in Asia was on machines for the manufacture of board and packaging paper. Voith has taken an appropriate share in this development with a good level of orders received from this region and won, among others, an order for two packaging paper machines for the Southeast Asian region and a gypsum board machine project in China.

In North America, the market for new machines also proved to be stronger than expected. In the US, we were given an order for a complete production line including automation for the manufacture of corrugated medium. In Mexico, we won an order for a new complete plant for the manufacture of testliner and heavy-duty corrugated medium. In addition, we received orders for two medium-sized rebuilds. In South America, in contrast, investment activities remained at a low level, with the large Brazilian market in particular falling short of expectations.

In the 2018/19 fiscal year, we are reorganizing our management system and using EBIT instead of profit from operations as our central performance indicator for operating result. Definitions of both performance indicators and further information can be found in section 01.2. **Management system**.

## Operating result further increased

In the 2017/18 fiscal year, the Group Division Paper increased its profit from operations by 6% to €114 million (previous year: €107 million). This development is in line with our forecast (2017 annual report: "slight growth"). Adjusted for currency effects, the growth would have been even higher. Slight growth in profit was also achieved at the EBIT level (€102 million, +4%). The encouraging development of profits is a reflection of the successfully completed restructuring measures and the activities launched in recent years to boost productivity. The return on sales reduced to 6.5% due to a changed sales mix (previous year: 7.0%). ROCE leapt from 14.9% in the previous year to 18.2% in the year under review. In addition to the rise in profit from operations, a reduction in the capital employed contributed to this development.

## 03.3. Turbo

### Good business development

The Group Division Turbo developed well in the 2017/18 fiscal year within a market environment that remained challenging. As announced, sales and orders received rose slightly despite negative currency effects. Due to the build-up costs for a planned joint venture in China, contrary to the forecast, the profit from operations was below the high level of the previous year. ROCE was stable.

#### Sales up on the previous year

In the 2017/18 fiscal year, the Group Division Turbo generated sales of €1,302 million (previous year: €1,283 million, +1 %). The slight growth that was forecast in the 2017 annual report was achieved despite negative currency effects.

The Industry Division was able to put an end to its five years of market-related declines in sales: in the year under review, Industry exhibited stable development in a still challenging market environment. The Mobility Division remained at a good level and exceeded the previous year’s level. The ongoing downward trend in the major Chinese rail market was more than compensated for by sales growth in the commercial vehicles segment and the service business.

More than half of sales in the past fiscal year were attributable to Europe (including Germany). The Asia-Pacific region accounted for almost one-quarter of sales.

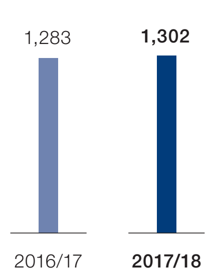
#### Orders received up by 3 %

In the 2017/18 fiscal year, the Group Division Turbo received new orders worth a total of €1,378 million (previous year: €1,344 million). This corresponds to an increase of 3 %. The positive trend of the previous year thus continued. Despite negative currency effects, the forecast was achieved (2017 annual report: “slight growth”). Orders on hand improved to €1,041 million as at the end of the year under review (September 30, 2017: €985 million).

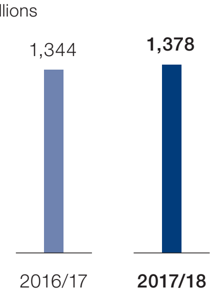
Both Divisions, Industry and Mobility, contributed to the increase in orders received.

The markets relevant for the Industry Division have bottomed out. In view of the increased oil price, a slight recovery was evident in a few segments of the oil and gas market in the year under review; overall, however, investment activity remained low. The prices of important raw materials have stabilized at a

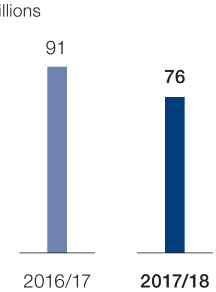
**Sales** Turbo
in € millions




**Orders received** Turbo
in € millions




**Profit from operations** Turbo
in € millions



low level, which has improved the investment climate in mining. In the steel industry, investment activity remained subdued due to persisting excess capacities. The fossil-fuel power station market remained in decline due to the rise of renewable energies. The machine tool market developed positively. Voith operated successfully in this still demanding environment and participated appropriately in the projects awarded.

The transport & automotive market is growing in important segments, but is undergoing major change due to the diesel discussion and the trend towards e-mobility. Political developments, such as the economic sanctions against Russia and Iran and an unstable financing environment in some countries in South America, slightly worsened the environment. The Mobility Division continued to move at a high level and was able to slightly increase its orders received in this environment. Growth was driven by the commercial vehicles segment, where we experienced high demand for DIWA automatic transmissions for buses and retarders for trucks. The rail market continued to be characterized by delays in the awarding of projects and very intense competition on account of excess capacities on the part of rail vehicle manufacturers, meaning that new business for rail applications remained weak. The Marine segment, too, the smallest product line by volume, lacked growth momentum. The service business developed markedly positively because overhauls of commercial and rail vehicles were due at a large number of operators.

### Joint venture with Chinese train company CRRC planned

In the year under review, we agreed to form a joint venture with the Chinese rail vehicle manufacturer CRRC Corporation Limited. CRRC is now the largest rail vehicle manufacturer in the world. Voith maintains long-term business relations with CRRC. We have supplied CRRC and both its predecessor companies for around two decades, for example with drives, power car systems and couplings for China's high-speed trains. We hope this joint venture will decisively strengthen our business in the important Chinese rail market. The joint venture is currently still subject to approval by the supervisory bodies of both partners.

### Service workshops for industry applications founded

In the 2017/18 fiscal year, we opened service workshops in Riyadh, Saudi Arabia, and in Houston, Texas, USA, with which we support the oil and gas industry locally. The US and the Middle East are of great strategic importance for our oil & gas business. Customers from these regions can now access our test equipment and our technicians' expertise for maintenance and emergency repairs close to their oil and gas fields. This reduces lost time and increases plants' efficiency.

In the 2018/19 fiscal year, we are reorganizing our management system and using EBIT instead of profit from operations as our central performance indicator for operating result. Definitions of both performance indicators and further information can be found in section 01.2. **Management system**.

### Operating result decreased, but still at a good level

The Group Division Turbo generated profit from operations of €76 million in the 2017/18 fiscal year (previous year: €91 million, -16%). The operating result thus remained at a good level, but we did not achieve the stable development expected in the 2017 annual report. The forecast was missed mainly due to a negative non-recurring effect in connection with the planned joint venture in China. EBIT (€75 million, -16%) developed in line with profit from operations. The return on sales stood at 5.8% (previous year: 7.1%). ROCE fell to 11.1% because of the non-recurring effect described and thus, contrary to the forecast, did not reach the previous year's level (previous year: 12.9%).

## 03.4. Digital Ventures

### Digital agenda going according to plan

The Group Division Digital Ventures, which was founded in 2016 (until September 30, 2018: “Digital Solutions”), is a key element of the digital transformation of the Voith Group. It fulfills various tasks for the Voith Group and its business results are reported partly in the Group Division Digital Ventures and partly in the Group Divisions of the traditional core business in the segment reporting.

The Group Division’s role was refined and sharpened in 2018. Digital Ventures continues to provide support to the Group Divisions Hydro, Paper and Turbo in the development of their respective digital product portfolio by contributing its process know-how and its human resources. Furthermore, the Group Division continues to make an important contribution to drafting standards for the Group, such as those required in connection with modularization of the automation business. However, the three Group Divisions of Hydro, Paper and Turbo will in future have overall control of the refinement of the digital product portfolio, and thus have significantly more responsibility for the establishment and expansion of the digital business in their markets. The sales generated will continue to be attributed in full to the respective Group Divisions of the core business.

In addition, our Company’s digital start-up activities will be brought together under the umbrella of Digital Ventures for organizational purposes. Digital Ventures will, in the future, steer the development and management of possible new digital start-up activities and act as an incubator to drive forward new digital business models for the entire Group. These may include activities in markets not yet covered by Voith as well as technology investments with a start-up character that have arisen through acquisitions or joint ventures. In order to take account of this development, the Group Division is being operated as “Digital Ventures” from the 2018/19 fiscal year.

#### Important progress made in the implementation of the digital strategy

In October 2017, we founded Voith Innovation Lab in Berlin. It supports Voith in advancing innovations for further development of its digital product portfolio very rapidly and with a focus on customers. To this end, Voith Innovation Lab uses new development methods to solve complex problems, e. g. design thinking. This methodological knowledge is also passed on as part of training to other Voith employees, independently of specific projects. At the same time, Voith Innovation Lab supports the development of completely new business models (“ventures”) of the Group.

More detailed information on OnCumulus and the industry-specific applications based on it can be found in section 05. **Research and development**.

We presented our new, internally developed Industrial Internet of Things (IIoT) data platform OnCumulus at the 2018 Hannover Messe trade fair, thus significantly expanding our portfolio of digital solutions. Based on OnCumulus, the first solutions for the paper industry (OnEfficiency.Strength, OnCare.Asset, OnEfficiency.MassBalance), for hydropower plants (OnCare.Acoustic, OnCare.Asset) and for commercial vehicles (OnEfficiency.DriverAssist, OnEfficiency.SmartAccelerate) will be available from as early as the 2018/19 fiscal year. There are plans for further applications from the Group Divisions Hydro, Paper and Turbo to use the advantages of the platform in the future.

In April 2018, we entered into a strategic partnership with the robotics firm Franka Emika. We have acquired a 10% financial holding in Franka Emika and founded the joint venture Voith Robotics – A Voith and Franka Emika Company. Franka Emika is a leader in the domain of the design and development of

Further information can be found in section 04.4. **Financial assets and investments**.

powerful, adaptive and easy-to-operate state-of-the-art lightweight robot systems. The new joint venture Voith Robotics is to become a global system provider for robot-assisted automation and experts in the process integration of robots.

In September 2018, Voith concluded a strategic cooperation agreement with the Kudelski Group, a Swiss company specializing in digital security systems. The aim of the collaboration is to develop cyber security products and services for industrial customers, which provide more security in networked technologies.

merQbiz, the digital marketplace for recovered paper, which was launched in the previous year, was extended in January 2018 to include integrated logistics solutions. To this end, we entered into an exclusive partnership with C.H. Robinson, one of the world's largest logistics groups. merQbiz customers are now provided with freight capacities, competitive real time price formation online and a powerful supply chain network.

### Sales and earnings reflect the venture activities' situation as a start-up

Further information on this acquisition can be found in section 04.4. **Financial assets and investments**.

Separate recognition of orders on hand does not take place in the sales generated in the Group Division Digital Ventures – in contrast to customary practice in mechanical and plant engineering – because of the short lead times.

In the 2018/19 fiscal year, we are reorganizing our management system and using EBIT instead of profit from operations as our key operating earnings indicator. Definitions of both performance indicators and further information can be found in section 01.2. **Management system**.

The Group Division Digital Ventures tripled its sales to €40 million in the fiscal year (previous year: €13 million, +214%). As forecast, a strong increase was achieved in percentage terms, which naturally was still at a low level because of the venture activities' start-up situation. A large proportion of the Group Division's sales comes from the digital services provider Ray Sono, in which a majority shareholding was acquired in 2017 and which for the first time was consolidated in the Voith Group for a full fiscal year (full consolidation since July 1, 2017), but they also developed very positively irrespective of this consolidation effect. We have acquired a majority shareholding in the valve manufacturer FlowLink Systems, and its sales have also been included since the second half of the fiscal year. The sales of merQbiz, the recovered paper marketplace launched in 2017, are still low, consistent with the start-up nature of this business. The joint venture Voith Robotics will not be reported in the Group Division Digital Ventures until the 2018/19 fiscal year. Likewise, neither the digital sales generated by the Group Divisions Hydro, Paper and Turbo with the support of Digital Ventures nor automation sales are included in the aforementioned figure.

The increased headcount, particularly as a result of the first-time consolidation of FlowLink, and development and operating costs relating to the new OnCumulus data platform were reflected on the costs side.

Bottom line, there was profit from operations of €-46 million in the year under review (previous year: €-43 million), which was slightly lower than originally planned because development costs were incurred early. As a result, we fell slightly short of the forecast made in our 2017 annual report ("profit in the negative double digit million range, albeit somewhat lower than in the previous year"). On an EBIT basis, the earnings figure was virtually identical (€-46 million, previous year: €-43 million). We regard these build-up costs as a deliberate investment in the digital transformation of Voith, laying the basis for future growth.

The sales and profits achieved in the Group Divisions Hydro, Paper and Turbo with the support of Digital Ventures – sales of €233 million in the year under review (previous year: €286 million, -19%) – are reported in the respective Group Division in our segment reporting. The decrease in automation sales is largely due to the decreased level of orders received in the Group Division Hydro.

# 04. Net assets and financial position

**The net assets and financial position of the Voith Group remain at a good level. We were able to significantly reduce our debt in the year under review and increase the equity ratio to 28.7 %. Net liquidity was at a very high level at €557 million. Cash flow from operating activities was positive in the year under review. Voith thus has a very good equity base and a thoroughly comfortable liquidity situation which provides scope for future growth.**

## 04.1. Balance sheet

### Noticeable increase in equity ratio as a result of reduction of long-term debt

In comparison to September 30, 2017, total assets decreased slightly by €322 million to €4,676 million (previous year: €4,998 million, -6 %) primarily due to the repayment of long-term bank loans in Germany and China. On the assets side, cash and cash equivalents reduced accordingly.

In total, non-current assets were reduced by €152 million to €1,796 million (previous year: €1,948 million, -8 %). The €14 million reduction in financial assets to €92 million (-13 %) includes two opposing effects: the decrease as a result of the sale of the remaining shares in the former Industrial Services Group Division and associated repayment of a loan were almost compensated for by the acquisition of new investments. The decrease of €79 million in property, plant and equipment to €899 million (-8 %) results firstly from reclassifications to the assets held for sale due to the planned sale of the activities of Voith Composites and secondly from the fact that depreciation and amortization were higher than the investments. The decrease in investments in companies accounted for using the equity method by €10 million to €22 million (-32 %) is largely due to the acquisition of further shares in a company. Because Voith now has control of the company, the company is no longer recognized using the equity method, but instead fully consolidated. Furthermore, non-current other financial receivables fell by €27 million to €62 million (-31 %) for measurement-related reasons.

Current assets were reduced by €170 million to €2,880 million (previous year: €3,050 million, -6 %). Within this item, cash and cash equivalents were reduced by €240 million to €342 million (previous year: €582 million, -41 %), primarily as a result of the early repayment of long-term bank loans in Germany and China. Furthermore, short-term investments were made, which increased short-term securities by €16 million to €618 million (previous year: €602 million, +3%). Inventories increased by €55 million to €603 million (+10%) (of which Turbo +€34 million). Receivables from customer-specific contracts also increased (increase of €23 million, +7%). These contain long-term orders that are presented using the percentage of completion method (this figure contains an increase of €16 million pertaining to Hydro and an increase of €5 million pertaining to Paper). Trade receivables fell by €26 million to €688 million (this includes a decrease of €45 million from Paper and working in the opposite direction, an increase of €22 million from Digital Ventures).

Non-current assets decreased significantly by €327 million to €1,310 million (previous year: €1,637 million, -20%). The reduction of non-current liabilities was primarily achieved through early repayments of the floating-rate portion of the note loan at Voith GmbH & Co. KGaA (€-139 million) and of part of the long-term syndicated loan in China (€-58 million). The remaining part of the US private placement in the amount of €17 million matures in 2019 and will consequently now be recognized in current liabilities. In addition, non-current other provisions decreased by €35 million to €156 million (previous year: €191 million, -18%), primarily caused by a €16 million decrease in provisions for restructuring and severance payments and a €19 million decrease in provisions for legal expenses. The decrease in pension provisions by €34 million to €713 million (previous year: €747 million, -5%) is largely due to the increase in the discount rates in Germany and the US and to the increase in plan assets in the US.

Current liabilities rose slightly by €31 million to €2,026 million (previous year: €1,995 million, +2%). The increase in current liabilities to banks, caused by taking out short-term bank loans (+€36 million) and reclassifying the US private placement which matures next year (+€17 million), is partially compensated for by the decrease in other financial liabilities (€-10 million). In addition, liabilities from customer-specific contracts increased by €48 million (of which Hydro +€81 million and Paper €-33 million). The item other liabilities (+€27 million) rose primarily on account of a higher level of customer advances (+€27 million). The opposite effect came from current other provisions (€-64 million, -19%) due to lower warranty provisions (€-32 million) and contract-specific provisions (€-25 million). Trade payables have only changed marginally (balance of: €511 million, previous year: €510 million).

The net balance of deferred tax assets and liabilities decreased by €18 million.

Equity decreased slightly to €1,340 million (previous year: €1,366 million, -2%). Here, the negative effects from currency translation of €-62 million and distributions of profits exceeded the positive net income and measurement-related adjustments to pension provisions. The equity ratio was noticeably increased by reducing debt and was 28.7% at the end of the year under review (previous year: 27.3%).

## 04.2. Liquidity

### Net liquidity remains at a very high level

The cash flow from operating activities amounted to €31 million in the 2017/18 fiscal year (previous year: €135 million). The reduction on the previous-year period resulted mainly from the use of warranty provisions and contract-specific provisions.

The cash flow from investing activities amounted to €-69 million in the reporting period (previous year: €551 million). After the previous year had been primarily characterized by the proceeds of €1,146 million in connection with the sale of the shares in KUKA Aktiengesellschaft, the cash flow from investing activities in the reporting period was marked by, among other factors, payments related to the acquisition of further shares in FlowLink Systems Private Ltd., and for the purchase of the investment in Franka Emika GmbH and payments for purchase price adjustments in connection with the sale of Industrial Services in the previous year. The remaining 20% interest in the former Industrial Services Group Division was sold and a loan was repaid in the reporting period. The receipts from the disposal of financial assets of €113 million essentially stem from these transactions. The KUKA effect was reported in this item in the previous year. Net receipts and payments for property, plant and equipment and intangible assets of €-88 million were slightly higher in comparison to the previous year (€-84 million).

We further reduced our level of borrowing over the reporting period (net repayment: €-165 million, previous year: €-717 million) primarily through early repayments of the floating-rate portion of the note loan at Voith GmbH & Co. KGaA (€-139 million) and of part of the long-term syndicated loan in China (€-58 million). By contrast, current liabilities to banks increased through new borrowings of €36 million. In the previous year, this item included the redemption of the capital market bond in the amount of €600 million. In addition, payments for dividends (€-35 million) were slightly higher than the previous year's figure (€-29 million). This results in a cash flow from financing activities of €-178 million (previous year: €-743 million).

Total cash flow amounted to €-216 million (previous year: €-57 million).

**Development of cash flow**
in € millions

| | 2017/18 | 2016/17 |
|---|---|---|
| Cash flow from operating activities | 31 | 135 |
| Cash flow from investing activities | -69 | 551 |
| Cash flow from financing activities | -178 | -743 |
| **Total cash flow** | **-216** | **-57** |

The Voith Group's net liquidity – as the difference between liquid financial assets and interest-bearing financial liabilities – remains at a very high level. At the end of the year under review, it was €557 million (previous year: €648 million).

The net liquidity indicator is not defined under International Financial Reporting Standards (IFRS), which means that its definition and calculation may diverge from practice at other companies.

## 04.3. Capital spending

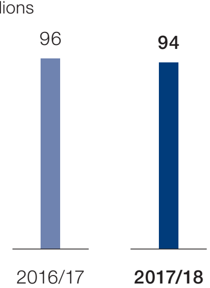
### €94 million invested in the Voith Group

In the 2017/18 fiscal year, we invested a total of €94 million in property, plant and equipment and intangible assets (previous year: €96 million, -2%). As a percentage of the Group's sales, our investment ratio amounts to 2.2% in the year under review (previous year: 2.3%). We not only invested in our young Digital Ventures Group Division, but also in expanding our core business.

### Capital spending in Europe intensified

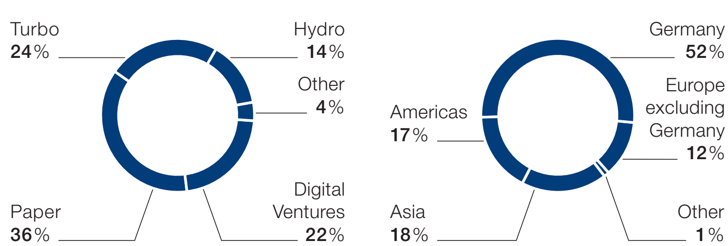
Compared to the previous year, we increased our investments in Germany and the rest of Europe, while they fell slightly in the Americas and Asia. More than half of our global capital spending (52%, previous year: 50%) was invested in Germany, where our largest facilities are situated, and amounted to €49 million in the year under review (previous year: €48 million). For years, we have sustained a strong commitment in Asia, above all in China. In the 2017/18 fiscal year, we invested €17 million (previous year: €19 million) in this high growth region. That is equivalent to 18% of the entire volume in the year under review (previous year: 19%). In North and Latin America, we invested a total of €16 million (previous year: €23 million), i.e. 17% (previous year: 24%) of our total investment spending. In Europe excluding Germany, capital spending increased to €11 million (previous year: €6 million). This corresponds to a share of 12% (previous year: 6%).

**Investments** Group
in € millions




**Investments** total €94 million
by Group Division

by region



## Hydro: practically stable capital spending

As in the previous year, the Hydro Group Division kept its capital spending at a low level in view of deteriorating business development. For example, Hydro invested €13 million in the capacities of its value chain in the year under review (previous year: €14 million). As a percentage of sales, this corresponds to an investment ratio of 1.2% (previous year: 1.0%). One of the investment priorities was to expand production capacity in North America and Asia.

## Paper: production capacity for products and consumables expanded

In the Group Division Paper, capital spending was €34 million (previous year: €24 million, +43%). The investment ratio was 2.0% (previous year: 1.6%). A large proportion of the Paper Group Division's investments were made in Europe (including Germany) and the Asia region. For example, we expanded our capacity for manufacturing consumables in Austria and India.

## Turbo: capital spending on digital production technologies

The Turbo Group Division invested a total of €22 million in property, plant and equipment and intangible assets in the 2017/18 fiscal year (previous year: €36 million, -38%). This corresponds to an investment ratio of 1.7% (previous year: 2.8%). After concluding an important investment project in China in the previous year, it was possible to reduce capital spending in the year under review. The focus of the capital spending in the year under review was on German locations. Here, our investments included new production technologies such as 3D printers.

## Digital Ventures: capital spending on infrastructure and licenses

In the Digital Ventures Group Division, we invested €21 million (previous year: €15 million) in property, plant and equipment and intangible assets in the 2017/18 fiscal year, primarily in IT infrastructure, software development and software licenses. In line with its business model, Digital Ventures invested very little in property, plant and equipment.

## 04.4. Financial assets and investments

### Strategic partnership entered into with robotics start-up Franka Emika

In April 2018, we entered into a strategic partnership with the robotics firm Franka Emika. The partnership involves Voith taking a direct financial investment of 10% in this Munich-based robotics specialist and the creation of the Voith Robotics joint venture.

The plans are for Voith Robotics – A Voith and Franka Emika Company to become a global system provider for robot-assisted automation in the digital age. Voith Robotics is to provide both adaptive lightweight robots from Franka Emika and appropriate software solutions, apps, services and process consulting for customers worldwide in a wide range of industries and markets. Voith holds a 51% interest in the new joint venture and is responsible for its operative management. Voith Robotics has been fully consolidated in the Voith Group's financial statements since May 2018. The 10% interest in Franka Emika will be recognized in other financial assets.

Franka Emika is a leader in the domain of designing and developing powerful, adaptive and easy-to-operate state-of-the-art lightweight robot systems. For the first time ever, these systems make it possible to automate necessary but generally monotonous tasks such as sensitive insertion, screwing and joining tasks as well as testing, inspection and assembly jobs.

With this strategic partnership, Voith is taking another step consistent with its digital agenda. We had defined robotics as one of the key competencies that we want to add to our portfolio.

### Majority shareholding in FlowLink Systems acquired

In April 2018, we increased our shareholding in FlowLink Systems Private Ltd. from 50% to 80%. The company, headquartered in Coimbatore/India, manufactures industrial valves and valve components that are used in the oil & gas market, in mining, in power plants and in the area of sewage treatment. The company is increasingly focusing on digital solutions with its product portfolio. FlowLink Systems has been fully consolidated since April 1, 2018 and is allocated to our Group Division Digital Ventures. Previously, it was recognized using the equity method.

# 05. Research and development

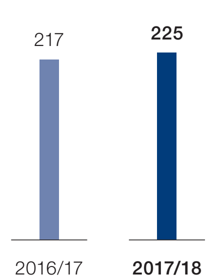
**Research and development has traditionally played a central role at Voith. With several thousand active patents to its name and hundreds more new patents filed every year, Voith ranks as one of the world's most innovative companies in the business segments it serves. In the year under review, we spent €225 million on R&D activities. Our R&D ratio stood at 5.4%.**

## Increase in R&D to sales ratio

Voith's strong position on its markets and in its regions is largely based on the technological engineering competence it has built up as a result of decades of research and development work. Since the Company was founded, our engineers have been writing history with their inventions in the field of technology. The Voith Group has a strong intellectual property base: Voith holds several thousand active patents around the world and hundreds of new ones are registered each year.

Technological expertise and the ability to translate our know-how time and again into innovations with added value for our customers are the basis of our business success. This is why we consistently invest in research and development for new solutions – around €1 billion in total over the past five years. In the 2017/18 fiscal year, the Group's R&D spending amounted to €225 million (previous year: €217 million). The 4% rise is largely due to increased R&D spending in the young Digital Ventures Group Division. By contrast, R&D spending fell in Hydro. In the Paper and Turbo Group Divisions, R&D spending remained roughly constant. At 5.4%, R&D spending as a percentage of the Group's sales was higher than in the

**Research and development**
in € millions



previous year (5.1 %). Of the total R&D spending of €225 million, €13 million was capitalized (previous year: €13 million). At the same time, amortization of €5 million was made on capitalized development costs (previous year: €7 million).

Voith's research and development activities are internationally organized. The focus is on Germany, with centers in the Americas, Asia and Europe excluding Germany contributing valuable specialized R&D input in the relevant Group Divisions.

## Aligned with global megatrends

One of Voith's objectives as a supplier to industry is to enable our customers to contribute to sustainable economic development. For this reason, our R&D strategy is systematically aligned with global megatrends and in particular with the infrastructure needs of the world's growth regions. Resource and energy efficiency, urbanization and mobility in addition to digitalization are not only the key challenges for the 21st century, they are also the central themes of our research and development strategy at Voith.

## Systematic foresight management introduced

Deciding on the right choice of development projects is of crucial importance for an innovative company. However, these changes also offer opportunities for growth. In order to be prepared in the best possible way for future challenges and new possibilities, we established a strategic foresight management system in the Company during the year under review, which was deployed for the first time across Group Division boundaries. In doing so, all Group Divisions took a systematic look at future developments in various areas of the market and technology and brought them together to form consistent future scenarios. These were used to derive technology roadmaps to complete and complement those already in place. The processes employed enabled us to considerably sharpen our view of future developments and interactions. The assessments derived from this form an excellent basis for the next stage involving talks with customers and partners on their views of future opportunities and challenges.

## Hydro: further advances in pumped storage technology

As part of the standardized foresight management system in place throughout the Group, we have drawn up visions for the Group Division Hydro, which relate to the focus areas of energy and water. The technology roadmap derived from this addresses technological developments in the areas of large hydro, small hydro and services as well as technologies and trends for future growth areas. From the 2018/19 fiscal year onwards, we will discuss the findings with customers and partners and make adjustments in line with their perspectives.

A large share of the research and development expenditure by the Group Division Hydro over the year under review was invested in customer and project-related activities. As part of our participation in the tendering process for the Tian Chi pumped storage power plant in China, we made extensive investments in significant research combining high-end numerical fluid simulations with modern and professional laboratory testing. We were able to further improve the performance of our designs while at the same time increasing robustness during operation. These technological advantages were a decisive factor in our successful bid for this challenging project. Over the next few years, a large number of projects in the field of pumped storage posing similar technical challenges will be put to tender in China, and we are now well placed to participate in these.

For years, we have been working on the development of especially powerful turbines and generators. Suitable stator bars are essential for the development of powerful generators of the 1,000 MVA class. Over the course of the year under review, we completed the development of a new end corona protection design for stator bars. The new design has significantly increased the robustness of the bars in operation leading to a much higher reliability of the product. For our customers this is very important because the reliability of the winding is an essential contributor to the availability of the plant for energy production. The new bars were tested in our new laboratory in Shanghai exposing them to all relevant international standards as well as to the more stringent test definitions of some of our customers. The bars exceeded all requirements and were qualified by our customers for project use.

Furthermore, we presented OnCare.Acoustic (formerly known as “HyGuard”), a digital early warning system for hydropower plants, in the year under review. The project developed in cooperation by the Group Divisions Hydro and Digital Ventures supports hydropower plant operators in discovering potentially dangerous incidents by detecting sound anomalies and classifying them according to urgency. OnCare.Acoustic is based on the Industrial Internet of Things (IIoT) platform OnCumulus. There are currently various pilot projects with interested power plant operators. The product will be available for a wide range of customers as of the 2018/19 fiscal year.

## Paper: virtual reality solutions increase transparency, efficiency and safety

As part of the standardized foresight management system in place throughout the Group, we have drawn up visions for the Group Division Paper that show three alternative scenarios for the paper industry in the future, in which various milestones should be reached by 2025. Alongside future growth potential for paper applications, the analysis also extended to other factors influencing future developments on the paper market. Two extreme scenarios and a trend scenario were used to derive fields of action for the Group Division Paper and to draft a roadmap. The roadmap addresses technological developments in the existing core markets, in the field of alternative manufacturing processes and future opportunities to generate added value in the field of packaging.

In June 2018, the Group Division Paper introduced Virtual Reality Solutions by Voith Paper, a new smart service package offering paper manufacturers the opportunity to obtain a digital representation of their very own new machine – even before it is completed. The virtual training programs allow personnel to acquire experience with operation of the paper machine even though it is not yet running. Virtual Reality Solutions by Voith Paper also ensures more efficiency during operation itself as maintenance activities can be practiced in advance in interactive training scenarios. This means that Voith’s customers can benefit from more transparency, efficiency and safety in paper production over the entire life cycle.

One of the numerous product innovations launched on the market by the Group Division Paper in the 2017/18 fiscal year was the new coater, DynaLayer. This concept for high-end board coloring achieves perfect color application and remains easy to use even without an additional enclosure. As a result, the DynaLayer from Voith improves the cost efficiency of paper production and offers an efficient alternative to conventional coaters.

The new SmoothRun hydropneumatic damping bearing system for winders effectively reduces vibrations occurring during the winding process. The hydropneumatic damping allows for higher operating speeds and better winding results. This makes it possible for our customers to achieve significant capacity increases.

With OceanCoat, the Group Division Paper is adding a highly durable option to its portfolio of coater roll covers. The new roll cover stands out from standard roll covers through its color alone – blue instead of black. The blue shade allows the operator to quickly identify any overheating, which commonly occurs at the edges.

## Turbo: focus on digitalization and electrification of powertrains

As part of the foresight management system in place throughout the Group, we have drawn up visions for the Group Division Turbo that relate to the focus areas of mobility, water and environmental technologies. We apply these visions on an ongoing basis to refine our technology roadmaps. The roadmaps now have a clear focus in the area of electrical drives, for which we presented several product innovations over the year under review. In addition to electrification of powertrains, Turbo's R&D work in the year under review concentrated on digitalization of our offering in cooperation with Digital Ventures. In the field of electromobility, for example, we intend to evolve into a system provider for electrical drives and digital vehicle and fleet management systems over the next few years. In addition, our work in the year under review included increasing the competitiveness of our core products through modularization, standardization and design-to-value measures.

In the 2017/18 fiscal year, the Industry Division placed two completely new fully digital products on the market: BeltGenius ERIC and BeltGenius ALEX for the first time enable mine operators to optimize the energy efficiency and plant productivity of their conveyor systems. We achieve this by comparing existing sensor data with a digital twin of the plant and identifying potential for improvement.

In the year under review, we furthermore won the first customers for the VECO-Drive presented in the previous year. The VECO-Drive is an innovative variable speed drive for compressors and pumps which is used to control speed. The two VECO-Drives now on order are to replace outdated equipment in a Chinese thermal power plant and will bring about a significant improvement in the efficiency of the boiler water feed pumps.

In the 2017/18 fiscal year, we also won a first reference order for the RWC variant of the Vorecon NX series of variable speed planetary gears launched on the market in the previous year. The order was placed by a major US refinery operator.

In the Mobility Division, we developed new products and services for the rail, road and marine segments.

We presented a fully electrical drive system for city buses for the first time at the leading trade fair IAA Commercial Vehicles held in September 2018. This is a drive system for electric buses that can be universally used in any bus from the established manufacturers. During development, the focus was on the special requirements of local public transport: this innovative product marks our entry into the market for electromobility. We have already received the first orders. In September 2018, for instance, we entered into a cooperation agreement with private local transport provider Transdev GmbH and will equip electric buses initially for two German towns.

Another highlight at the IAA Commercial Vehicles was the DIWA NXT, the next generation of DIWA automatic transmissions for city and intercity buses. The transmission features an optional mild-hybrid system on a 48 V basis and an additional overdrive gear enables it to meet the requirements of intercity bus and coach segment. The first DIWA NXT transmissions will undergo field testing at a renowned vehicle manufacturer in 2019.

We introduced several new products in the field of digital vehicle and fleet management systems over the year under review. These innovations are the outcome of cooperation between the Group Divisions Turbo and Digital Ventures. At the IAA Commercial Vehicles, for example, we presented OnEfficiency.DriverAssist, a system for reducing fuel consumption.

Our SmartMaintenance solutions already established in the commercial vehicle segment are gradually also being introduced in the rail segment, where they have been available for the Scharfenberg coupler since the year under review, for example. With SmartMaintenance, the data relating to the components are recorded, and evaluated in the cloud in order to provide operators with proactive suggestions regarding maintenance and service measures that bring about higher availability and reduce costs.

In the rail segment, we are working at full speed on the development of a new powerful, low-emission engine for rail vehicles. At the InnoTrans international trade fair for transport technology in September 2018, we unveiled to the professional community a prototype of the new Voith Rail Engine. Developed from scratch, this is currently the most efficient diesel engine in the industry and has the lowest emissions of its performance class. This is a product of a cooperation agreement entered into by Voith and Liebherr, both technology companies, in September 2017. The market launch of this product innovation is scheduled for 2020. The Voith Rail Engine will form a central element of new product variants of the Voith Rail Pack, which also includes the transmission in addition to the engine to form a complete drive system. In 2018, Voith was awarded a contract by a leading rail vehicle manufacturer who intends to integrate our new RailPack – consisting of the Voith Rail Engine, a Voith cooling system and Voith DIWA NXT (a version of the bus transmission adapted for rail use) – into its new vehicle platform.

## Digital Ventures: OnCumulus IIoT platform launched

As part of the foresight management system in place throughout the Group and the Deep Dive Days, the Group Division Digital Ventures examined the possibilities arising from the use of digital technologies taking account of the various visions for the markets served by Voith. One of the aims is to find solutions with demonstrable added value for our customers in the form of cost cutting, improving quality and boosting production through process stabilization and refined maintenance management. The technology radar created in this context will, in the future, also help with the assessment of new technologies and how to integrate them into our technology roadmap. The findings made have already been incorporated into the current product development planning.

Further information on the Voith Innovation Lab can be found in section 03.4. **Digital Ventures**.

We formed the Voith Innovation Lab in October 2017 with the intention of driving forward innovations to refine Voith's portfolio of digital products.

Further details on the aforementioned industry-specific applications can be found above in this section in the description of R&D projects of the respective Group Divisions.

Following completion of an extensive development project conducted over a period of several years, we unveiled our Industrial Internet of Things (IIoT) OnCumulus.Platform to the professional community in the year under review, thus reaching a milestone in the field of enabling technologies. OnCumulus is intended to provide support to industrial companies with digital transformation. OnCumulus.Platform acts as a structured data hub for data from various sources, for example from machines, ERP systems and external data sources. In this way, OnCumulus makes it possible for manufacturing companies to use data from all systems and across all plant and equipment, irrespective of location. Cross-sectoral basic functions ("OnCumulus.Suite") belong to the standard configuration of OnCumulus. At the same time, OnCumulus is the basis for a wide range of industry-specific applications that Voith customers can source from us. OnCumulus will be available from the 2018/19 fiscal year onwards along with the associated applications for the paper industry (OnEfficiency.Strength, OnCare.Asset, OnEfficiency.MassBalance), for hydropower plants (OnCare.Acoustic, OnCare.Asset) and for commercial vehicles (OnEfficiency.DriverAssist, OnEfficiency.SmartAccelerate). There are plans for further cloud-based applications from the Group Divisions Hydro, Paper and Turbo to run on the OnCumulus.Platform in the future.

In the year under review, we made further enhancements to merQbiz, our digital marketplace for recovered paper, launched in the previous year. An extension to the range of services – integrated logistics solutions – has been online since January 2018. To this end, we entered into an exclusive partnership with C.H. Robinson, one of the world's largest logistics groups. We are currently working towards further improvements.

# 06. Sustainability

**For us, sustainable business and the pursuit of corporate success go hand in hand. We aim to create measurable added value in the areas of economy, ecology and society and also make Voith the benchmark for our industries with regard to sustainability.**

## Sustainable business management

We continue the traditions and style of the family-owned company Voith based on our understanding of sustainability: the obligation to leave a minimum ecological footprint, to act fairly, and to return a profit over the long term. Our motto is for Voith to make a tangible contribution to sustainable development. An independent body has now confirmed that Voith is one of the leading companies in its sector in the field of sustainable business. In the current corporate rating by the recognized rating agency ISS-oekom, our sustainability activities were given a C+ grade. This means that Voith has reached prime status for the first time and belongs to the top 20% of the 172 companies from the mechanical and plant engineering industry examined. Step by step we are approaching our aim of becoming the benchmark in our markets for sustainability issues.

The organization, responsibilities and the principles of our actions are embedded in the Group Directive on Sustainability. Six defined fields of action integrate sustainability management into the Group. These include sustainable business management, the pursuit of profitable growth, responsibility for products and supply chains, for the environment and our employees as well as social responsibility. Information on the field of action regarding profitable growth can be found in sections 02, 03, 04, 09 and 10 of this management report. How Voith meets its responsibility to its employees is described in detail in section 07 of this management report. The other fields of action are described in this section.

The Voith Sustainability Report 2017 is available on the Internet at **http://voith.com/corp-en/vz_sustainability-report-2017_en.pdf**.

Voith began implementing sustainability management throughout the Group in 2008. Since 2009, Voith has systematically recorded and analyzed environmental data, materials indicators and relevant personnel data. We have published an extensive sustainability report every year since 2011. Support for the work by our sustainability experts and executive managers comes from powerful IT systems – hse+ for occupational health and safety and environmental protection issues as well as pep. for human resources. In this respect, they can rely on data integrated across Group Divisions and regions and highly standardized and automated processes for their day-to-day work.

In order to focus our sustainability management and reporting on the issues that matter most, we conduct stakeholder surveys at regular intervals that are fed into detailed materiality analyses. The most recent survey, which had a reworked concept, started in October 2018. In order to reconcile external expectations with internal perspectives, we are also holding personal interviews with Voith executive managers for the

i
Our most important stakeholders are Voith's owners and supervisory bodies, customers, employees, applicants, suppliers and investors, the local population at the locations, business associations, public authorities and academia, and policy-makers.

first time in 2018. The findings of both dialog tools and the materiality analysis based on them will be fed into the refinement of our sustainability strategy. Our Advisory Board Sustainability, which is comprised of leading external sustainability experts, provides ongoing advice and further important input.

## Responsibility for the environment

We have set ourselves the goal of steadily minimizing Voith's ecological footprint. We intend to create measurable economic added value for Voith by taking a responsible approach to the environment.

Our activities in the environment field are focused on two areas: firstly, operational environmental protection helps to avoid risk by complying with environmental regulations and minimizing the damage to the environment caused by our business operations; secondly, the efficient use of resources and energy provides opportunities for resource and energy-efficient production innovations at all our locations around the world.

With the 2011/12 fiscal year as baseline, the Corporate Board of Management had expressed three central objectives in the field of environmental management that were to be achieved within six years. For example, we wanted to achieved the following by the 2017/18 fiscal year (sales-related in each case):

1. Cut our energy consumption by 20%
2. Reduce our volume of waste by 25%
3. Lower freshwater consumption by 10%

We have consistently followed the path to reducing all three variables over the past six years. The final results for the year under review will not be available until after the editorial deadline for this annual report. We are working on the assumption that we have reached our reduction target in terms of volume of waste and have lowered fresh-water consumption even further than planned. With regard to energy consumption, we are not yet able to state with certainty whether the objective was reached.

Working together with the Advisory Board experts, we have defined new targets over the year under review. The focus will remain on the three familiar main drivers in the future. The 2011/12 fiscal year will continue to be the baseline. We intend to achieve the following by the end of the 2021/22 fiscal year:

1. Cut our energy consumption by 30%
2. Reduce our volume of waste by 35%
3. Lower freshwater consumption by 40%

For the first time, we have also committed to a specific $CO_2$ objective in order to make an additional contribution to climate protection and to meeting the targets of the Paris Agreement. On the basis of the figures for the 2016/17 fiscal year we intend to do the following:

- in a first step, reduce the $CO_2$ emissions stemming from our electricity consumption by 25% by the end of the 2021/22 fiscal year by correspondingly optimizing the grid mix,
- reduce our entire $CO_2$ emissions by 35% in relation to value-added by the end of 2024/25 and
- achieve a 90% cut in our $CO_2$ emissions in relation to value-added by the end of 2049/50.

For the $CO_2$ objectives from 2024/25 we will set additional interim objectives and milestones.

## Responsibility for products and supply chains

We have set ourselves the standard of providing top-quality innovative products displaying a level of safety, reliability and efficiency that our customers can rely on. Our products and services should make a contribution to the conservation of resources and environmental protection throughout the entire value chain, from the manufacturing process through to their use.

A Group-wide management system for technical risks and quality (TRQM) is used to manage targets, processes and methods for the development and production phase. This is supplemented by policies specific to each Group Division. As part of a Group-wide operational excellence initiative, we are constantly optimizing the quality of our products and processes. Virtually all Voith locations have been certified under the international quality management standard ISO 9001.

Product ownership as we understand it involves close customer dialog based on mutual trust and specific surveys. Our customers' expectations are integrated in our product development, and we support our customers with special training offers and advice on the most economical operation of our products.

Our understanding of corporate responsibility also extends to our suppliers. The quantity and broad spectrum of procured goods and services means that a great effort is required to ensure our supply chains are sustainable.

We have integrated social, ecological and economic aspects in our General Terms and Conditions of Purchase. Not only do our direct suppliers agree to comply with these General Terms and Conditions of Purchase, they also undertake to pass on these requirements to any subsuppliers. Furthermore, we request self-assessments from our suppliers and service providers on a regular basis and have the suppliers with the strongest sales evaluated by our staff in the departments responsible. The results are stored in our central supplier management database. Long-term relationships of trust with our suppliers help us to minimize risks in the procurement process. In this context, we work with a preferred supplier and a blocked supplier concept. Social, ecological and economic aspects are included in both concepts.

## Social responsibility

We support local institutions and make a contribution to the development of society at all Voith locations around the world. The type and scope of our commitment as well as eligibility criteria have been documented in the Group directive on donations and sponsorship since 2008. As part of our commitment to society, we support activities and organizations in the fields of education, social welfare, sports and culture. And, quite apart from all of the above, Voith takes action where it perceives an urgent humanitarian need.

# 07. Employees

**Qualified, motivated and dedicated employees are the foundation and engine of our success. We endeavor to offer our employees who meet our high demands challenging tasks, individual development opportunities and an attractive workplace. We take into account each of our employee's personal situations and enable them to pursue a wide range of different career options. At the close of the 2017/18 fiscal year, the Voith Group had around 19,500 employees.**

## Headcount increased on account of acquisitions

As at September 30, 2018, the Voith Group had 19,535 employees (full-time equivalents without apprentices). On balance this is 578 jobs more than one year before (September 30, 2017: 18,957). This figure does not include the 92 employees (previous year: 88) of the discontinued operation Voith Composites.

Further information on this acquisition can be found in section 04.4. **Financial assets and investments**.

The rise is largely due to the first-time consolidation of FlowLink Systems, whose approximately 690 employees were organizationally allocated to the Group Division Digital Ventures and appear in our personnel statistics for the first time.

### New employees for Digital Ventures

The largest Group Division by headcount remains Paper, with 34% (previous year: 34%) of the total headcount. Paper had 6,618 employees, 169 more than a year before. The slight increase in headcount was largely made to process the high level of orders on hand.

Turbo had 5,543 employees (previous year: 5,408) or 28% (previous year: 29%) of the Group's headcount. The 135 new jobs were mainly created in the Product Innovation and Engineering Excellence departments.

The Group Division Hydro had 3,927 employees (previous year: 4,507 employees), i.e. 20% (previous year: 24%) of the Group's total headcount. The number of employees working for Hydro fell by 580, above all due to capacity adjustments in Brazil and the EMEA region because of the decline in business development.

Digital Ventures had 2,256 employees at the end of the year under review (previous year: 1,397), which is equivalent to 12% (previous year: 7%) of the Group's headcount. The majority of the increase in headcount is due to the first-time consolidation of FlowLink Systems. In addition, the young Group Division succeeded in filling various vacancies through external recruitment in the competitive market for IT specialists.

The headcount in the Corporate Functions & Services department remained almost unchanged at 1,191 (previous year: 1,196).

## 40% of the workforce based in Germany

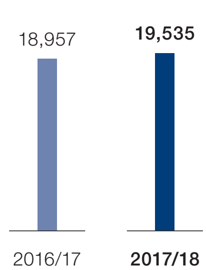
From a regional perspective, most of Voith's workforce continues to be based in Germany, with a share of 40% of the Group's total workforce (previous year: 40%). Asia was the second most important region with a 24% share (previous year: 21%). We employed 21% (previous year: 24%) of our workforce in the Americas. The Europe excluding Germany region accounted for 14% of the total workforce, as in the previous year. Employees working in other regions made up 1% of the workforce.

## First-class professional training

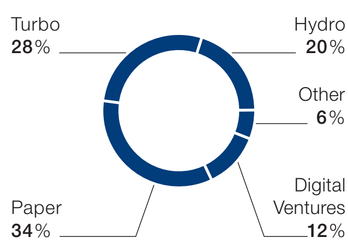
In the year under review, we once again provided a large number of young people with career prospects and maintained a high number of apprenticeships. At the close of the 2017/18 fiscal year, 795 apprentices and students were employed at Voith locations around the globe (previous year: 953, -17%).

As a matter of tradition, we set great store by first-class vocational training. We place great value on interdisciplinary learning and a holistic approach of imparting a combination of both social and professional skills. The high quality of our training is repeatedly demonstrated in Germany by the excellent performance of Voith apprentices at state and federal level. In the 2017/18 fiscal year, 57% of our apprentices in Heidenheim received a final grade of 1.9 or higher (equivalent to good). Following successful completion of their training, we offered all former trainees a permanent position.

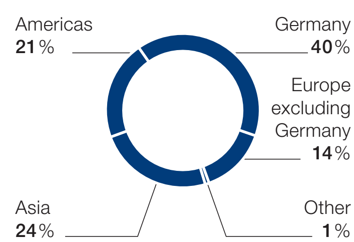
**Employees** Group




**Employees** total 19,535
by Group Division




by region



We are also committed to the topic of education at our international locations. The largest Voith training facility outside Germany is the Kunshan Training Center in China, opened in 2014. At that facility, we employ training methods based on the German dual system, enhanced with elements specific to Chinese culture. The fact that the dual system can be successfully put into long-term practice outside Germany is demonstrated by our experiences from Brazil. We have been training young people for many years now in São Paulo, Brazil, where Voith opened its first plant back in 1964 and where it has since been involved in a large number of the country's infrastructure projects. In cooperation with local training institutions, we have developed a training concept for a usually four-year apprenticeship program aimed at young people of 15 years and older that regularly provides excellently qualified young technicians.

Graduates with a college or university degree in engineering, business administration or IT are offered a challenging entry-level position in our Company as part of the Global Graduate Program (GGP). Recruited from around the world, the participants gain practical experience and attend training sessions, are supported by a mentor and work in various Group Divisions and regions over the course of the 18-month program.

## Training for Industry 4.0

As part of digital transformation, modern information and communications technologies merge with industrial processes. In order to prepare young people appropriately for a changing production landscape, we integrated new digital work contents into the training for technical professions at Voith over the 2017/18 fiscal year. These are interdisciplinary skills, such as additive production processes with the aid of 3D printers, using manufacturing execution systems (MES) or using augmented reality (AR). To name one example, we invested in an AR welding simulator in the year under review and have made this state-of-the-art technology part of our training program. Furthermore, we put four lightweight robots into operation at the Heidenheim-based Voith Training Center in fall 2018. Several trainees and one trainer have already received training on the "Panda" at the Munich headquarters of the manufacturer, Voith Robotics; they will be employed at a Customer Experience Center in Heidenheim in the future to show interested customers how to operate the industrial robot. In addition to modernizing Voith's own training program, we were closely involved in the institutional overhaul of the metalworking and electrical engineering professions in Germany by providing expert opinions. From the 2018/19 training year onwards, the companies will train the skilled workers for their own future needs in eleven modernized industrial metalworking and electrical engineering professions. The training regulations for these professions have been augmented with greater IT content and adapted to the latest technological developments. This allows Voith to live up to its ambition of being the training pacesetter and pioneer in Germany.

## Needs and goal-oriented personnel development

Lifelong learning is a core topic at Voith. We support the ongoing development of our employees. Businesses are currently facing a range of challenges arising from the enormous speed of change – for example, in association with digitalization, but also in other areas. Furthermore, the business environment is characterized by increasing complexity, non-linear cause-effect relationships and a lack of predictability. This gives rise to new challenges for executive managers and employee alike. New forms of collaboration and communication, stronger networking across teams, departments, national borders and hierarchical levels will shape the world of work in the future.

Our personnel development concepts are intended to help us, as an organization, to prepare for a changing working world and empower our executive managers and employees to actively participate in shaping it. With this in mind, we implemented our new leadership concept over the year under review. “Expected Behaviors” derived from our mission statement and the values it outlines came into effect in the year under review; these are intended to provide all Voith employees with guidance with regard to their conduct and actions. Our leadership calendar forms the operative framework for personnel development. The key elements are two institutionalized meetings which are held with every employee once a year, the performance review and the employee appraisal. The outcome of these meetings together with the findings of the management review process are entered in our people excellence platform (“pep.”), an IT-based personnel information system, so that development measures can be defined and implemented in line with the Company’s needs and the requirements of any function or a position to which an employee may aspire. Based on our employees’ individual training needs, we offer them access to internal and external training and personal development measures that foster professional, personal and methodological skill sets.

Our executive managers take part in standard development programs to create a common understanding of leadership across all Group Divisions and regions. We restructured and revised the content of these programs over the year under review in order to meet the challenges outlined above. In this respect, executive managers are to be put into a position to act and guide others in an increasingly complex world characterized by change.

In order to prepare our employees for the digital transformation, we have developed in collaboration with the Fraunhofer Institute a comprehensive e-learning platform relating to all aspects of digitalization; it went online at the end of the year under review. DRIVE is available to all Voith employees to use on a voluntary basis and is intended to break down any mental barriers, awaken interest, impart knowledge, stimulate debate, invite members of staff to play with digital applications and promote collaboration across teams, national borders and hierarchical levels. The platform uses “gamification”: participants go on a playful journey and elements familiar from e-gaming, such as progress bars, high scores, virtual badges and anonymized rankings, are used to boost motivation to learn. The English version of DRIVE was the first to go online. Advanced modules and localizations in the main languages used within the Group are gradually being added.

In the year under review, there were around 69,400 participants (previous year: around 60,800) from throughout the Group in our internal and external training measures.

## Occupational health and safety management

Occupational health and safety are top priorities for us. By taking a responsible approach in designing workplaces and processes, we aim to avoid accidents and work-related illnesses in the best possible way.

Our occupational safety is based on an effective HSE organization (Health, Safety, Environment), which is structured as a shared service organization. A corresponding Group directive prescribes mandatory minimum requirements and standards for the Voith Group and contains in excess of 20 written standard operating procedures. All rules and regulations are available in the Group's hse+ IT system. All employees are covered by Voith's occupational safety program. Information and goals are cascaded from the Board of Management through the respective executive managers down to employee level. In this respect, personnel managers train their staff and address safety issues at regular meetings. This process is supported by central training documents.

Since the implementation of our global occupational safety program, we have seen great improvements at all our locations. Voith is now a global leader in occupational safety in its industry. The frequency rate, calculated pursuant to an international standard and documenting the number of accidents per one million working hours, has been reduced dramatically from the baseline of 13.9, or 921 reportable accidents per year, in the 2008/09 fiscal year. In the year under review, the number of accidents was 1.5 (previous year: 1.4) per one million working hours or a total of 52 (previous year: 50) accidents. In comparison: the average frequency rate for companies in the German Wood and Metal Trades Association is 22. There has also been a significant improvement over the long term in what is known as the severity rate – in the year under review it stood at 341 (previous year: 271) hours lost per one million working hours. Our success has also been confirmed by external opinions – for example we achieved a top score of A+ for our occupational safety rate in the ISS-oekom rating.

Despite our enormous efforts and the measurable successes achieved in the field of occupational safety, the 2017/18 fiscal year was overshadowed by two work-related fatalities. One incident occurred in February 2018 at one of the Group Division Hydro's Chinese plants and the other in April 2018 at a Group Division Paper plant in the USA. These were the first fatal accidents at any of our plants for ten years. We are deeply saddened by these incidents that led to the death of two Voith employees. In cooperation with the local authorities, we undertook a rigorous and extremely transparent investigation of both incidents. Our efforts in this respect focused on determining the causes and further refining our processes. Alongside the specific measures already implemented, we launched additional activities throughout the Group to improve occupational safety in June 2018. To this end, all production facilities were subjected to an additional uniform safety audit by the end of the fiscal year with a view to identifying any overarching weaknesses. In addition, new Group-wide information and educational initiatives focusing on the topics of occupational safety and accident prevention were launched. Even if we have achieved a great deal in the past, two accidents of such severity within only a few months of each other show how vital it is for us to continue placing a strong and uncompromising focus on strict occupational safety measures.

In the field of occupational health and safety we place particular emphasis on prevention. This involves pursuing a regional approach appropriate to heterogeneous conditions. No matter where our employees work, they should be able to maintain their ability to work and retire in good health at the end of their working lives.

## Diversity and equal opportunity

Voith employs men and women who are at different stages of their lives, come from around 90 nations, and bring their own individual experiences with them. As an employer, Voith sees it as its duty to offer all its employees equal opportunities and to ensure that the workplace is free from discrimination. Furthermore, studies have shown that diversity enriches the corporate culture, encourages team creativity and innovative drive, and contributes to the economic success of companies.

Since the 2012/13 fiscal year, Voith has been running a Diversity & Inclusion Program (D&I) to support diversity and equal opportunities. At Voith we understand "diversity" to be differences within our workforce or within individual organizational units with regard to five factors, namely: gender, age/generation, nationality/ethnic background, educational background/professional experience and individual differences such as beliefs or physical abilities. For us, "inclusion" means promoting a culture of interaction based on respect that is open to differing perspectives and approaches. The overarching objective is to incorporate a wide range of insights and experiences into the solution of complex customer requirements.

The D&I program ranges from increasing employees' awareness through initiating suitable measures to establishing an inclusive working environment at all locations. While the program is coordinated by our central HR function, the respective focus is defined and the program implemented by the regional and divisional management as the challenges faced in the various regions and Group Divisions differ.

In the year under review, we continued our work to entrench the topic in the minds of Voithians. In October 2017, we held a D&I conference with more than 100 executive managers mainly from the senior management circle in order to maintain awareness at the highest management levels. Participation on the part of the entire Corporate Board of Management made it clear that they consider diversity and equal opportunity to be important issues. Furthermore, a one-day workshop on the topic of D&I was integrated into the leadership development program as a fixed component for new executive managers.

Information on the development program for executive managers can be found below in this section under the heading **Uniform global job grading system introduced**.

A global information campaign directed at all employees ran at frequent intervals via a wide range of online and offline channels over the entire year under review. The campaign relies, for example, on dialog and the playful opportunities provided by social media to achieve a high level of emotional commitment from employees.

Even if we at Voith have our eyes set firmly on all five dimensions, new legislation currently puts the gender dimension at the center of public debate in Germany. As women are traditionally still underrepresented in technical professions and courses of studies, technology companies, especially in the B2B segment, employ significantly fewer women than men, as a rule. This is one of the reasons why the proportion of women in the Voith Group's overall workforce stood at only 18% on September 30, 2018 (previous year: 18%; based on headcount).

We, too, have made a priority of addressing this situation and are working to increase the percentage of female employees in the overall workforce. A wide range of measures has been initiated relating primarily to the selection procedure used in the recruitment of new employees and filling internal vacancies. The decisive factors in the selection of suitable candidates will, however, remain the qualifications, performance and personality of the candidates concerned. We consider the share of women in management positions the most effective starting point for increasing the proportion of women in the Group as a whole.

Furthermore, the new German Act on Equal Participation of Women and Men in Management Positions (FührposGleichberG) obliges us to define and publish specific targets for the management holding company Voith GmbH & Co. KGaA. Based on the figures as at June 30, 2017, we have set the following targets to be met by the end of the 2020/21 fiscal year.

**Proportion of women* at the management holding company Voith GmbH & Co. KGaA**

| in % | Baseline 2017-06-30 | Target quota 2021-09-30 |
|---|---|---|
| Supervisory Board | 15 | 15 |
| First level of management below the Corporate Board of Management | 25 | 25 |
| Second level of management below the Corporate Board of Management | 16 | 20 |

* Based on headcount.

The Board of Management is employed by Voith Management GmbH. We are aiming to achieve a consistent 25% of women in the first level of management below the Corporate Board of Management by the target date of September 30, 2021. At the second level, the proportion of women should if possible increase from its present level of 16% (on June 30, 2017) to 20% by the target date. Bearing in mind the terms of existing contracts, there is no plan to alter the proportion of women on the Supervisory Board.

## Family and career

The work-life balance is one of the key factors in achieving an increase in the proportion of women in companies. Regardless of gender, most people consider a working environment to be attractive if it can be adapted flexibly to their respective situation in life. For this reason, we support our employees in combining family life with work. With this aim in mind we offer the greatest possible flexibility, i.e. in the form of a wide range of working time models, a combination of mobile working and presence at the Company, flexible work locations and vacation rules as well as sabbaticals. Digital solutions aimed at promoting a work-life balance are gaining in importance. One example of our commitment to this principle is our involvement in the familyNET 4.0 model project sponsored by Baden-Württemberg's ministry of economic affairs. This project develops digitally supported working models and forms a platform for the exchange of best practices.

We offer places at various childcare facilities for employees' children up to the age of ten at several of our locations in Germany. Various locations in Germany have their own parent-child office allowing our employees to bring their child with them to work when other childcare options fail at the last minute.

Employees in Germany can also obtain information by telephone or e-mail about issues such as caring for family members – an issue which, owing to demographic trends, is growing in importance for many employees. This service, and the arrangement of childminding, au-pair and other childcare services, is offered in cooperation with an external consultancy firm. Our employees can find additional practical information on childcare, nursing care and careers on our Germany-wide intranet platform.

## Uniform global job grading system introduced

In the 2017/18 fiscal year, we introduced a uniform global grading system at Voith. While the value of a job was in the past derived primarily from its reporting line and manager to staff ratio, the new system is based on responsibility, required expertise, experience and social skills. This means that the new system will not only properly reflect management careers, but will also do justice to the importance of specialist careers. Ultimately every position in the Group can be evaluated according to its relative value for the Company regardless of its position in the hierarchy. Over the course of the year under review, all upper level specialist and management positions in all regions were classified in the new grading system; in some regions, this task has already been completed for all positions. This process is to be continued in the 2018/19 fiscal year. The grading system is now the basis for various HR processes, from job advertisements through the planning of career paths and personnel development measures to the design of compensation and retirement benefits systems.

## Focus on service staff

Across all Group Divisions and across all regions, we are working in a targeted manner to exploit the growth potential we see in the service field. If it is taken into consideration that the service area is a labor-intensive business, it becomes all the clearer that we will see personnel requirements grow at a faster rate over the coming years. Over the course of the year under review, we spent a great deal of time and effort addressing how we can succeed in recruiting a sufficient number of qualified employees, providing for their ongoing development and ensuring they have the necessary qualifications and remain loyal to Voith over the long term. In a first step, we used workshops to inquire about the needs and expectations of service employees; a comparison of the data collected with the employees' perception of the current situation was used to identify the action required. In the second project phase, we defined subprojects and measures aiming to increase awareness of service professions and boost their image, to improve further training opportunities for service staff and to point out career paths as well as to create a positive working environment and attractive conditions. Introduction of the measures has already commenced and is scheduled for completion in the 2018/19 fiscal year.

## Efficient processes and systems for human resources management

We have been consistently employing standardized processes and integrated IT systems for several years now. Our modern cloud-based personnel information system pep. is the central source of information for human resources. It maps all relevant HR processes and lays the groundwork for sound business decisions. The pep. system contains basic information, such as qualification and development information about all our employees worldwide. The organizational structure of all Voith business units is also mapped and transparency is created with regard to reporting lines and expert knowledge. This facilitates the creation of virtual teams which function across national borders and Group Division boundaries. The HRcockpit reporting tool associated with pep. provides our human resources experts and executive managers with key figures at the press of a button. In this way, permanently up-to-date figures are available for each area of responsibility, for example average manager to staff ratios, staff turnover rates or the proportion of jobs which have been filled through internal succession plans. Smart analysis tools can be used to make comparisons with other business units.

pep.’s functions are gradually being extended and its user-friendliness optimized. In the year under review, for example, we put in place a remuneration management module that has been used to coordinate the processes governing pay raises and bonuses since the 2018/19 fiscal year. What’s more, we made HRcockpit accessible to further levels of management and further expanded the self-service area for employees and executive managers.

## Harmonization of employee benefits in North America

In the year under review, we took a big step towards standardizing the personnel management processes in place in the North America region. As employer obligations are less regulated and the social security systems are organized to a lesser extent by the state in North America than in Europe, very different remuneration and supplementary benefit systems have evolved in the individual Voith companies over the past decades. We have now reorganized the most important benefits systems relating to salary, social welfare, vacation and other employee benefits and harmonized them across all North American facilities in a two-year project. In this context, processes and conditions were standardized and the number of external insurance partners and service providers was reduced. Harmonization is advantageous for employer and employees alike. Voith, for example, benefits from reducing the complexity and boosting the efficiency of processes in personnel management; administrative costs are reduced considerably. For the employees, for instance, the administrative fees associated with their retirement plans have been reduced – while maintaining the level of service and the number of investment options available. Furthermore, it is now possible for employees to switch easily between different Voith companies in North America.

### Excellent employer

The Voith employer brand enjoys an outstanding reputation. This is repeatedly confirmed by institutes, on job portals and in employer rankings. We won various awards in the 2017/18 fiscal year. For example, Voith won third place in the mechanical and plant engineering industry in the “top career opportunities” study published by Focus Money/Deutschland Test in October 2017. The study covers the 10,000 largest companies by headcount based in Germany. The three dimensions of working environment, workplace attractiveness and innovative strength were assessed. The data included in the evaluation was collected firstly on the basis of a questionnaire at the companies concerned and secondly by means of social listening. Voith is also a highly popular employer among talented young people and is frequently listed among the top 100 companies in Germany cited by young professionals and students in the engineering industry. As an example, Voith was ranked 85th by engineering students in the annual ranking performed by the Swedish market research institute Universum. The Company’s good performance among young graduates is confirmed by the trendence Graduate Barometer in which Voith was recently ranked 90th by engineering graduates. The students’ positive expectations are evidently confirmed by an internship at Voith: in the Clevis Future Talents Report, which, with more than 5,000 participants, is the largest survey of interns on the German labor market, Voith was awarded three stars, the second-highest rating, in 2018. Acknowledgment of the quality of training at Voith was provided in March 2018 in the form of the “Germany’s Best Training Companies” seal of approval awarded by Focus Money/Deutschland Test. In the survey, Voith took 24th place of 168 mechanical engineering companies examined. Voith has also repeatedly received seals of approval distinguishing the Company as a fair employer that offers its employees excellent training and development opportunities and promotes a work-life balance. In China, too, our dedication to our role as employer is increasingly being recognized and acknowledged with HR prizes. To name one example, Voith took a place among the top 100 employers in the Employer Excellence of China award once again in 2017 or, in other words, for the fifth consecutive year. The prize acknowledges outstanding achievements in the field of HR work and is awarded by the renowned Chinese HR services provider 51job, Inc.

# 08. Subsequent events

### Dr. Toralf Haag becomes President and CEO

Further information on changes in the Corporate Board of Management in the year under review is available in section 01.5. of this management report **Significant events**.

Dr. Toralf Haag was appointed President and CEO by the Shareholders’ Committee with effect from October 23, 2018. Dr. Haag, a member of the Corporate Board of Management since October 2016 and responsible for finance and controlling, will initially retain the finance portfolio and exercise both functions at the same time until further notice. Dr. Haag succeeds Stephan Schaller, who resigned from his office as of October 23, 2018.

No additional significant developments have occurred since the close of the 2017/18 fiscal year.

# 09. Risks and opportunities

**Entrepreneurial activity includes making decisions under conditions of uncertainty. Our risk management system allows us to identify and manage risks to protect the Company. There are still no identified risks to the Voith Group's ability to continue as a going concern. The most significant risks which could cause the results to deviate negatively from those forecast/targeted continue to be external. The risks are matched by opportunities that could have a positive influence on business development.**

## 09.1. Risk and quality management

### Aligned toward increasing the value of the Company

Entrepreneurial activity involves making decisions under conditions of uncertainty. Risk is therefore an integral part of entrepreneurial activity. To safeguard against risks that could jeopardize the Group or its companies as a going concern, Voith operates a binding Group-wide risk management system. Risks to the Group's ability to continue as a going concern are defined as aggregate risk potential that threatens more than 50% of equity or more than 10% of sales.

All the elements of risk management have been brought together in a risk management system. This is not only geared to compliance with legal requirements, it should also contribute to increasing the value of the Group and its companies by reducing potential risks and their probability of occurrence. At the same time, the system is intended to produce a state of equilibrium between correctly assessed risks and the exploitation of opportunities. Standardized risk controlling matrices on the basis of the Group-wide guideline governing internal control systems (ICS) have been implemented in the Group Divisions. The ICS is part of the risk management system aimed at ensuring the appropriateness and reliability of internal reporting and external financial reporting, the effectiveness, efficiency and propriety of ordinary business operations, as well as compliance with the Voith Code of Conduct and the guidelines of the Voith Group. Risk and quality management are interlinked and integrated in a comprehensive internal controlling system.

## Decentralized nature of the risk management system

Voith distinguishes between two overarching risk groups with a total of six risk categories:

1. Risks to the Group
- External risks
- Management risks
- Liquidity and financial risks
- Infrastructure risks

2. Risks to performance
- Contractual risks
- Technical risks

Risk management at Voith is organized on a decentralized basis but is monitored and coordinated centrally. Responsibilities are clearly defined for the differentiated risk profiles at all levels of the Group.

The risk management process itself breaks down into four stages:

- Risk identification: Voith constantly monitors macroeconomic developments, developments in specific industries and internal business processes that could affect the situation of the Group. A risk catalog helps identify individual risks.
- Risk analysis and assessment: The risks identified in this way are assessed in terms of potential impact and their probability of occurrence. Wherever possible, the potential impact is quantified as a cost factor. In order to assess the potential risk, the worst-case scenario and a realistic scenario are analyzed for each identified performance risk, and their impact on the financial situation of the Group is examined. This involves monthly reporting to the Corporate Board of Management of those individual risks with a maximum risk impact of >€5 million or a realistic risk impact of >€2 million, including the measures taken to mitigate this risk such as existing insurance policies, recognized provisions or recorded impairment.
- Risk management: Analysis and assessment of the identified risks gives Voith's management the data it needs to decide whether the risks should be avoided, reduced by suitable actions, transferred by signing appropriate agreements, or whether they have to be accepted and contained by means of optimized processes and controls.
- Risk monitoring and reporting: A multitiered set of controlling and reporting tools helps Voith's Corporate Board of Management to analyze risks and make well-founded decisions.

## 09.2. Risks

In the sections that follow, we describe risks that could have a substantially negative effect on our business position, net assets, financial position and earnings position and lead to failure to meet forecasts or targets. The order of the risks within the six risk categories presented below reflects how we estimate the current importance of these risks for the Voith Group. Unless stated otherwise, the following risks relate to all the Group Divisions. Additional risks of which we are currently not aware or risks we currently estimate to be immaterial may also have a negative impact on our business activities.

### 09.2.1. Risks to the Group

#### External risks

Our economic environment is determined by global demand for capital goods. This demand is in turn influenced by the global macroeconomic environment. If economic development were to fall substantially short of expectations, it is highly probable that this would have negative effects on Voith's business position, net assets, financial position and earnings position. Economists see significant risks for the projected global economic development. The global economy is developing well overall despite political and economic instability in various countries and regions. For the short term, the sound growth in the global economy seems to be continuing but it could slacken in the medium to long term. Potential triggers for a downswing include protectionism and trade barriers, an end to loose monetary policy and rising crude oil prices.

Many experts see the trade dispute started by the USA, particularly with China and Europe, to be the most serious risk to the global economy. While the EU and the USA have found a solution for the time being, the dispute with China could escalate further. The negative effects for global trade could have a serious impact on the global economy.

An escalation of the conflicts in the Middle East and in eastern Ukraine could similarly have a negative effect on the further development of the global economy.

Unstable political situations in many regions of the world are another factor. In Europe, these include, for example, the relationship with Turkey and the latter's economic situation, the uncertain outcome of the Brexit negotiations and structural problems in Italy. The unpredictable nature of the US president's trade and foreign policy is causing uncertainty around the globe. The ongoing political crisis in Brazil is paralyzing development in this major South American economy.

A more medium-term risk for the global economy is the as yet unresolved crisis in the euro zone. This is currently being masked by the European Central Bank's expansionary monetary policy. However, the high level of sovereign debt and the structural reforms urgently needed in several countries to increase international competitiveness continue to pose challenges.

Various market risks could have a negative impact on Voith's earnings position should they eventuate.

The power generation market is currently characterized by uncertainties regarding energy policy, to which the Group Division Turbo, and the Group Division Hydro even more so, will have to adjust. In balancing competing objectives – combating climate change, dispensing with potentially hazardous nuclear power plants, achieving supply reliability, low energy prices, striving for energy autonomy – various countries are following different paths. In this context, the energy policy framework is being adjusted at short intervals, which entails a lack of planning security for all market participants. Hydropower is currently only benefiting to a limited extent from the trend towards renewable energies because in Europe solar and wind power are highly subsidized, which reduces incentives to invest in hydropower.

After a very strong 2017/18, the paper market is likely to significantly weaken. In addition to the market contraction that has already been taken into consideration in our planning, competitive and price pressure could have a negative impact on the earnings position of the Group Division Paper.

The Voith Group has analyzed the scenarios described in the above. The Corporate Board of Management is ready to take decisive action should economic conditions change.

### Management risks

Voith has set itself the aim of playing a major role in digitizing industry and will continue to make considerable investments in the key competencies for the Industrial Internet of Things megatrend over the next few years, both within the Company and through acquisitions. The young Group Division Digital Ventures is intended not only to develop new digital solutions for our traditional core markets in cooperation with Hydro, Paper and Turbo, but also to open up customer industries not covered by us to date for new applications and business models (incubation). As is always the case with such major transformation processes, there is the general risk of the strategic changes not being implemented within the planned time period or not leading to the desired outcome. Should the investments and build-up costs for the young Group Division not be covered by corresponding sales in the medium term, this would have a negative effect on the net assets, financial position and earnings position of the Voith Group and limit leeway for further growth. We are highly aware of this risk as well as of the associated opportunities. Strict project controlling is in place. The enhancement of the Voith product portfolio with digital applications enjoys the utmost attention from the Corporate Board of Management.

Beyond the risk described above, there are currently no indications of specific risks arising from the Group's management, e.g. from the reporting system, the corporate image or a lack of coordination of business activities within the Group.

### Liquidity and financial risks

The key objective of liquidity and financial management is to make sure at all times that the Company is able to continue as a going concern and to ensure the financial independence of the family-owned business. The liquidity reserves remain at a secure level to ensure that the Company is always in a position to meet its payment obligations.

Cash management is the task of the Group's treasury function as well as the related regional treasury and finance centers. The Group maintains cash pooling systems in Europe, China, India and North America, which are used to concentrate its cash and cash equivalents as far as possible (where legally permissible) and lower interest expenses caused by external debt financing. Borrowings are generally taken out by Voith GmbH & Co. KGaA and provided to the Group companies when needed.

The Voith Group's diversified financing structure is designed to safeguard long-term stability. In view of the very high level of liquidity prevailing after the sale of the KUKA shareholding in the 2016/17 fiscal year, we further reduced our debt in the year under review. For instance, the variable tranches of the note loan in an amount totaling €139 million was repaid early at the end of May 2018. The syndicated euro loan of €770 million arranged in 2011 was refinanced in April 2018 and adjusted to €550 million. It includes an option to increase the facility to €750 million once the banks have given their approval. It was possible to adjust the facility to the good financial position in a favorable market environment. The loan has not been drawn on and will be available as a strategic liquidity reserve until 2023 and, if the two renewal options are exercised, until 2025. In addition, Voith has free bilateral bank credit lines in place for low-interest financing of fluctuations in working capital. The syndicated loan placed in China in 2012 for more than CNY 2 billion was reduced to CNY 1 billion by means of early repayments of the capex tranche. This loan is available until May 2020 and was 35 % utilized at the reporting date. This facility secures the finance for future investments and for the operating business in the same currency as the operating business on the local market. These instruments will allow for long-term growth in a changing global market environment. Voith gives high priority to the availability of liquidity from existing loan agreements. Risks of termination are minimized by monitoring compliance with the terms and conditions of the respective contracts on an ongoing basis. As in previous years, all contractual terms and conditions were complied with in full in the 2017/18 fiscal year.

The rating given by Moody's was raised from Ba1 to an investment grade of Baa3 in December 2017. In addition, the rating agency S&P issued its first rating of BBB-, which is of a comparable level. Scope Ratings published its first rating assessment of Voith in May 2018. At BBB, the rating given is one level higher than Moody's and S&P.

As a globally operating company, Voith remains exposed to the risk of fluctuating foreign exchange rates, which could have a negative impact on the business position, net assets, financial position and earnings position. To contain risks arising from cash flows in different currencies (mainly US dollars but also currencies from emerging markets such as China, Brazil or India), defined foreign currency management procedures are applied consistently throughout the Group. All Group companies are required to hedge foreign currency items when these occur. Revaluation of the euro against various other currencies could have negative effects on sales and results due to currency translation of the financial statements prepared in foreign currency. This could further have an impact on our competitive position as competitors could benefit from cost advantages in weaker currencies. Moreover, interest rate risks are hedged using suitable instruments in order to maintain interest and financing security in the long term.

To hedge existing transactions such as future cash flows in different currencies or floating-rate financing, Voith uses a variety of derivative financial instruments, in particular forward exchange contracts to manage currency risks and interest rate swaps to manage interest rate risks. The instruments used and the hedging strategies are formally designated and documented at the inception of the hedge in line with the Company's risk management objective. The risks are constantly monitored and, if necessary, the hedging instruments are adjusted.

To guard against political and economic risks associated with goods and services provided by the Group Divisions, the Group buys commensurate insurance from government export credit insurance agencies, from the private-sector insurance market and from banks. The Group also maintains adequate cash reserves to cover all other operating risks.

Counterparty risks with financial partners are monitored constantly.

Adequate provisions have been recognized and contingent liabilities have been disclosed in the notes to cover the potential financial burden of tax risks. Neither Voith GmbH & Co. KGaA nor any of its Group companies are involved in any further current or foreseeable taxation proceedings that could have a material effect on their economic situation.

There are no indications of particular liquidity or financial risks. For more information, please refer to the notes to the consolidated financial statements. The related reporting as well as reporting on financial instruments (Sec. 315 (2) No. 1 HGB) is provided there in the section “Other notes”.

### Infrastructure risks

In the area of infrastructure risks, Voith primarily identifies IT risks, human resources risks, compliance risks and environmental protection risks, against which the Company takes specific countermeasures. There are currently no indications of particular risks relating to the Group’s infrastructure.

Our successful business activities are underpinned by state-of-the-art and secure information technology. This is why we have our own IT function, assigned to the Group Division Digital Ventures, to ensure that reliable data processing services are provided from our own computer centers. These experts manage the whole IT infrastructure for the Group and also maintain the specific application systems used by each Group Division. Our information security management is based on the international standard ISO/IEC 27001, and thus meets the most stringent standards. Our central computer center is certified under this standard. Our primary objective when it comes to managing IT risks is to ensure the availability of our IT infrastructure and IT applications used. Outages of basic systems owing to technical faults, virus attack or force majeure would result in business processes being massively disrupted or coming to a complete standstill. In order to prevent such business interruptions, we have built redundancy capacity into the core systems of our IT landscape at two computer centers. At the application level, we address the risk of defective software in addition to the risk of outages. We ensure the reliability (“integrity”) of applications with a strict quality management system, which involves new software versions and programs being subject to a multistep test and approval process before they are implemented. In order to maintain the confidentiality of our data, these are categorized according to predefined confidentiality levels. Depending on the level of confidentiality, we have IT tools of varying complexity such as encryption technology, which we use to securely store and transfer data. This also ensures that our intellectual property is protected in the best possible way. In addition to these technical measures, we train and inform our employees about how to securely handle confidential data by means of e-learning programs and awareness campaigns.

Highly qualified professionals and executives are key to our products, our image and ultimately to the success and growth of Voith. If we were unable to cover our qualitative and quantitative personnel needs over a longer period of time, this would call into question our ability to reach our corporate targets. For this reason, we strive to provide ongoing further training and to retain experienced employees at Voith as well as to remain an employer of choice for new, qualified candidates on the labor market. We compete with other international players and act with foresight in order to ensure we have a sufficient number of such employees. With a family-friendly human resources policy and flexible working hours, international career development prospects and performance-linked compensation systems as well as a broad spectrum of training and development programs, we offer an attractive work environment. We are also extending our Group-wide personnel information system in the direction of strategic personnel planning in order to identify requirements in advance and to take suitable measures to cover them.

Further information on our personnel information system can be found in section 07. **Employees**.

At Voith, we base all our actions on trust and integrity. The guidelines and values defined by the Corporate Board of Management are summarized in the Voith Code of Conduct. This is equally binding for all Voith employees worldwide and provides clear-cut rules of behavior toward third parties such as business partners, competitors, political parties and government authorities. Compliance with these principles is monitored by the Group's Compliance Committee and the compliance officers in the Group Divisions and in each Group company. As part of a structured process covering all locations worldwide, compliance officers draw up a risk control matrix for their specific area of responsibility, which also includes potential corruption risks. The findings for all units are aggregated and form the basis for internal compliance reviews. We place great value on functioning compliance management, as issues ranging from non-compliant behavior through to illegal acts committed by employees can be damaging to our reputation and lead to sanctions, penalties and ultimately to a fall in earnings. Within the scope of an ongoing audit being performed by an international organization with the active support of the Company, the Company has identified indirect remuneration payments to a representative of one of its subsidiaries made by that subsidiary without the approvals necessary according to the regulations in place throughout the Group. The contract with the representative has been terminated, the necessary personnel-related measures will be taken.

Further information on compliance management in the Voith Group can be found in section 01.3. **Values, guidelines, compliance**.

The business activities of an industrial company give rise to risks for people and the environment. For this reason, industrial safety as well as compliance with environmental legislation and corporate policies is a top priority for us. Such risks occurring could also result in production outages, claims for damages being filed and a loss of reputation. To avoid environmental and health risks, all production processes are subject to the Group directives on health, safety and environmental protection and on quality and risk management. Since the 2009/10 fiscal year, environmentally relevant data have been systematically recorded and analyzed. Integrated management systems monitor compliance with these directives and ensure that both production and products consistently meet the same high quality and environmental standards. Environmental risks can thus be identified at an early stage and appropriate countermeasures initiated. Adequate provisions have been recognized for any residual risks.

## 09.2.2. Risks to performance

### Contractual risks

Long-term contracts, especially for major projects, form a key component of our plant engineering business at the Group Divisions Hydro and Paper. Such contracts are associated with a host of risks and we attach great importance to managing these risks. For example, the profit margins generated by fixed-price contracts may deviate from the values originally calculated as a result of changes in costs or productivity during their term. Also possible are cost overruns or contractual penalties stemming from unexpected technical problems or unforeseeable developments at the project locations. Several of our multiyear contracts also contain demanding timelines or provisions to ensure that legal requirements are observed. If not met, these requirements could lead to contractual penalties, claims for damages, payment refusals or contract terminations. Project management and controlling, as it has been implemented, continuously reviews whether the projects are indeed developing in line with the planning. Any deviations are addressed early on. Regular checks ensure that adequate provisions have been made to cover any legal risks throughout the Group such as risks relating to warranties, liability, contractual penalties, guarantees and the possibility of inadequate or incorrect price calculations. Liability and property insurance in line with standard industry practice is taken out to cover potential losses and/or liability risks. Appropriate provisions are recognized for special risks arising from existing contracts if these risks can be reliably quantified.

### Technical risks

Technical risks relate to innovation-related risks, sourcing risks and sales risks due to decreasing customer satisfaction. There are currently no indications of any particular technical risks within the Voith Group.

Detailed information on foresight management and on the current focuses of our R&D activities can be found in section 05. **Research and development**.

Innovation-related risks are a key risk area for a technology group like Voith. The future profitability of the Company hinges on its ability to develop marketable products and services and to use state-of-the-art production technologies and service processes. Our earnings position could be negatively impacted by investments in technology that does not work as planned or find the level of market acceptance expected. Voith invests large sums of money to further improve and refine existing technologies, and to research and develop new products, systems and services. With several thousand active patents to its name and hundreds more new patents filed every year, Voith ranks as one of the world's most innovative companies in the business segments it serves. Within the scope of the strategic foresight management system introduced throughout the Group in the year under review, we are systematically addressing future trends in the market and technology environment and set the priorities for our development projects. The foresight management system will help us to get involved in disruptive technologies from the very beginning, to maintain our competitiveness and actively participate in shaping the future of our markets. Furthermore, the design-thinking methodology was comprehensively deployed for the first time in the year under review. It allows a better understanding of customer and market needs and makes it possible to closely tailor new products, especially those from the digitalization environment, to those needs.

Detailed information on sustainability in our supply chains can be found in section 06. **Sustainability**.

Collaboration with suppliers on the global procurement markets involves material risks with regard to supply disruptions, unforeseen cost increases and non-compliance with environmental and social standards. To secure our supplies, we have embedded effective measures in the relevant purchasing processes – supplier selection, order processing and delivery date tracking. In addition, we have a multiple source policy in place in order to circumvent the risks of supply outages and supplier insolvency at a global level. Once again in the 2017/18 fiscal year, we additionally used master agreements and long-term fixed-price contracts to prevent unplanned cost increases where procurement volume is significant. We have integrated compliance with current national environmental and social standards in our General Terms and Conditions of Purchase.

Our customers' satisfaction is key to achieving sales success and maintaining or increasing our market share. In the medium to long term, a fall in customer satisfaction would have a negative impact on our earnings position. For this reason, we develop technologies for and in cooperation with our customers that help them get ahead. Maintaining long-term partnerships is a high priority for us. We are proud to have collaborated with many customers, suppliers and other business partners over generations – some of our relationships even go back more than 100 years. We survey customer satisfaction in order to objectively assess and enhance our customer service.

As part of our regular internal reporting on performance risks we monitor the theoretical maximum risks associated with specific risk positions as well as the risks deemed to be realistic after careful assessment. Maximum risks are considered in the light of whether they constitute risks jeopardizing the Group's ability to continue as a going concern. There were no risks to the Group's ability to continue as a going concern at the reporting date. The risks which may be realistically expected are considered for profit planning purposes and in order to assess the need to recognize provisions in the balance sheet. In total, provisions and allowances amounting to €201 million (previous year: €221 million) were recognized in the balance sheet as at the reporting date for significant performance risks (maximum risk: €285 million; previous year: €338 million).

### 09.2.3. Overall risk

To the best of our knowledge, there are no risks which, either individually or collectively, could jeopardize the ability of the Voith Group to continue as a going concern. The risk situation for Voith has not changed significantly compared to the previous year. Of all the risks facing the Voith Group, external risks could have the strongest negative impact on business development. We are convinced that, in light of our strong diversification, our financial strength and the instruments used to control risks, our Group is able to bear the risks associated with our business activities.

## 09.3. Opportunities

In addition to the systematic management of risks, it is also essential that we support our business performance by actively managing opportunities. The identification of opportunities and their strategic and financial assessment plays an important role in the strategy discussions the Corporate Board of Management holds regularly with those responsible for the operating units. The results of these meetings are incorporated into the Voith Group's strategic decisions as well as into the medium-term planning and the annual operative planning process.

In the following, we describe significant opportunities that could have a positive impact on our business position, net assets, financial position and earnings position and lead to overachievement of forecasts or targets. The order of the opportunities presented below reflects how we currently estimate the importance of these opportunities to be for the Voith Group. Unless stated otherwise, the following opportunities relate to all the Group Divisions.

**Growing service business from postponed spending on new equipment**

In recent years, spending on new equipment and machines was postponed in several industries. Owing to the extended service life of existing equipment, customers are increasingly tending to make more intensive use of our range of services, such as maintenance, performance-enhancing components and spare parts. A growing number of our long-lived plants, products and components installed around the world must also be regularly maintained to sustain their efficiency and reliability. This offers opportunities in all Group Divisions for our service activities, which might grow more strongly than currently anticipated.

Detailed information on the Company's strategic principles can be found in section 01.4 **Group strategy**.

## Growth through acquisitions

As part of our strategy, we have specified business acquisitions and joint ventures as a core growth driver for Voith. Possible acquisition targets include profitable businesses with viable technology and above-average growth potential. They can either have the potential to round off our core business in the Group Divisions Hydro, Paper and Turbo, or constitute completely new activities for Voith. We use structured M&A processes to continually screen potential target companies for their suitability. Even in the short term, acquisitions offer opportunities for additional earnings not provided for in the business plan; in the mid-term they can help improve our position in existing markets or tap promising new customer industries for Voith.

## Expansion of our portfolio with product innovations

See section 05. **Research and development** on current product innovations.

We are constantly working on developing new technologies, products and solutions as well as improving existing ones. We again launched numerous new products on the market in all Group Divisions in the year under review. In the best-case scenario, this will not only allow us to secure our market position but also to generate sales and win market shares that have not yet been integrated in our business plan, especially if innovations are recognized as value adding by our customers much faster than currently assumed. We gear our development activities toward global megatrends as well as to current technology trends and new industry-specific requirements, for example those that are regulatory in nature. We use our Group-wide foresight management to analyze these market and technology trends, develop technology roadmaps and prioritize our development projects. In the years ahead we will particularly be focusing on new digital offerings and solutions in the field of the Industrial Internet of Things.

## Opportunities associated with the global economy

Given the ongoing good situation of the global economy overall, we currently expect a generally brighter investment climate in the 2018/19 fiscal year and the following year. If the economic environment in important sales regions proves to be better than currently assumed, this is likely to have a positive impact on Voith's business position, net assets, financial position and earnings position. Developments in Brazil will need to be monitored particularly closely in this respect. A solution to the political crisis there could be highly beneficial to this large Brazilian economy and to the economy of Latin America as a whole; infrastructure project contracts which have been planned but which are currently on hold could also be awarded. Developments in the global economy which exceed current expectations would benefit all Group Divisions, albeit with different degrees of delay, but in all cases from the second half of the 2018/19 fiscal year at the earliest.

## New sales markets for existing products and services

As well as expanding our portfolio of offerings, we also evaluate market opportunities for our existing products and services in all of our Group Divisions in those regions where they have been underrepresented to date or have no presence at all. We also seek to transfer our already successful products to new fields of application or sales areas. The resulting additional sales potential has not yet been integrated in our business plan.

## Increasing investments in the oil & gas market due to a sustained higher oil price

Our planning for the 2018/19 fiscal year is currently based on a volatile oil price development and only slightly increasing investments in the oil & gas market that will, however, remain at a low level compared to the long term. If, in contrast, the oil price were to rise on a permanent basis and noticeably exceed the USD 80 mark per barrel of Brent oil in the long term, oil companies might increase their investments and expenditure on service activities to a greater degree than we currently assume. This would improve Group Division Turbo's order situation.

### Opportunities in Africa

Africa offers great potential especially for the Group Divisions Hydro and Turbo. As the markets on that continent are proving to be volatile and difficult to predict, however, we have made conservative assumptions in this respect for our business planning. The Voith Group's earnings position would benefit from a situation where African markets develop faster than assumed or Voith's entry into the local markets is able to speed up.

## 09.4. Internal control and risk management system for the Group's financial reporting process

### Proper and reliable financial reporting

The key elements of the internal control and risk management system for the Group's financial reporting process are described in the following. The aim of the accounting-related internal control and risk management system is to guarantee that accounts are prepared correctly and reliably and to ensure that consolidated and separate financial statements comply with the applicable regulations.

The following structures and processes have been implemented in the Group:

The Corporate Board of Management bears overall responsibility for the internal control and risk management system with regard to the Group's financial reporting process. All levels of the Group (companies, Group Division head organizations, Voith GmbH & Co. KGaA as management holding company) are integrated through a strictly defined management and reporting organization.

Uniform recognition and measurement based on the regulations applicable for the Voith GmbH & Co. KGaA consolidated financial statements is ensured by Group accounting guidelines. Amendments to accounting rules are constantly adapted and communicated by Voith GmbH & Co. KGaA. The quality of the guidelines is ensured by an ongoing exchange between the departments responsible.

Accounting is organized on a decentralized basis but is monitored and coordinated centrally. Accounting entries are recorded in the separate financial statements of the subsidiaries of Voith GmbH & Co. KGaA. Risk control matrices have been developed at corporate headquarters for those line items that, from a Group perspective, are significant and exposed to an elevated risk of misstatement. These matrices must be applied by the subsidiaries when preparing their end-of-year financial reporting. These matrices present the significant accounting-related risks for the specified line items of the financial reporting and contain corresponding instructions on controlling activities, responsibilities and documentation duties. Among other elements, the controlling activities comprise analytical procedures as well as the practice of having significant and complex business transactions processed and controlled by different people. Complex accounting issues are referred to corporate departments (e.g. financial instruments) or external experts (e.g. relating to pensions). The activities and controls for these issues are also considered in the risk control matrices.

The consolidated financial statements are prepared by adding information to the separate financial statements of the subsidiaries to create standardized reporting packages which are then included in the consolidation system. Once the data has been fed into the consolidation system, it is subject to an automated plausibility check. If this returns an error message, this is immediately corrected by the individuals in charge of the subsidiaries concerned. The subsidiaries are supported by contact persons at headquarters for all accounting-related issues. After the data is finally approved, the respective management, or in isolated cases the representatives they appoint, issues a letter of representation confirming the completeness and accuracy of the reporting package in accordance with the relevant requirements and that the internal controls have been conducted and documented.

Group-wide reconciliation of balances takes place worldwide via an intranet-based platform. The various deadlines for the different parts of the reporting package are stipulated in the consolidation system and centrally monitored in the course of the preparation process. All consolidation activities are undertaken centrally at Voith GmbH & Co. KGaA. The entire consolidation process is supported by both systems-based and manual controls.

The proper functioning of the controls defined in the accounting-related internal control system is evaluated on a regular basis. If any weaknesses are identified, the system is adjusted accordingly by central accounting.

The quality of financial reporting is also ensured by reconciling planning calculations with the external reporting at all levels of the Company. System access controls based on authorization concepts as well as programmed plausibility checks in those IT systems used for the financial reporting ensure that processes are complete and accurate.

The internal audit department performs regular reviews of the proper functioning, correctness, reliability and efficiency of all internal control and risk management systems in the Voith Group independent of the individual processes. Suitable measures are promptly taken to remedy any gaps or weaknesses that may be identified.

Compliance with the rules of the accounting-related internal control system is tested by the external auditors on a sample basis in the course of their audit of the consolidated and separate financial statements. Any deficiencies or flaws that appear are recorded in a management letter along with suggested improvements.

# 10. Forecast report

**After two years which were largely characterized by sideways movement, the signs point to growth again. We expect perceptible growth in orders received and slight growth in sales for the 2018/19 fiscal year. At the same time, we are putting increased effort into improving Voith's profitability and want to perceptibly increase the operating result. Both the core business and the young Digital Ventures Group Division are to contribute to this.**

## 10.1. Business environment

### Positive short-term economic conditions continue

For more information on the risks and opportunities for the global economy, see sections 09.2. **Risks** and 09.3. **Opportunities** of this management report.

At the beginning of the 2018/19 fiscal year, the global economy remains in good shape overall despite political and economic instabilities in various countries. However, the risks for economic development worldwide have increased noticeably. Alongside geopolitical flash points, increasingly protectionist tendencies in particular are giving rise to uncertainty and may well constitute barriers to global trade. In its most recent publication in October 2018, the International Monetary Fund (IMF) forecasts percentage growth rates at the previous-year level for 2019 and 2020 (+3.7 % in each case). Even if these forecasts are rather optimistic from our perspective, we again anticipate sound growth in the global economy over the 2018/19 fiscal year.

A slight decline in the growth rates is to be expected for the advances economies in 2019 (IMF forecast: +2.1 %), intensifying in 2020 (IMF forecast: +1.7 %). Growth in the euro zone economies is being dampened by the trade dispute with the USA, the political uncertainties within Europe as well as overdue structural reforms and a burden of massive debt in several European countries. As an export-based economy, Germany could be very sensitive to the consequences of global trade becoming more difficult, which has led to the economic projections for this country to be lowered several times over the year. As a consequence of the short-term stimulus stemming from the corporate tax reform and buoyed by the historically low unemployment figures, the USA is expected to grow at a faster rate than the advanced economies seen as a whole. The IMF does, however, forecast that the growth rates will level off considerably in 2019 and 2020 even in the USA.

For the emerging markets as a whole, the IMF sees a growth rate for 2019 that is steady in comparison to the previous year (+4.7%) and rises even further (+4.9%) in 2020. Developments in different countries vary. While Asia in particular continues to demonstrate dynamic growth as forecast, some emerging economies are coming under pressure from factors such as higher crude oil prices, higher bond yields in the USA, detrimental exchange rate developments or political crises. Ongoing strong growth is forecast for China, with growth rates in excess of 6%. At the same time, a slight leveling off of growth rates is anticipated, firstly, as a consequence of the trade dispute with the USA and, secondly, as a consequence of fundamental financial market reforms to reduce the level of lending. In the next two years India will probably grow faster than China, and – assuming that the short-term negative consequences of the economic reforms are overcome – will gain further momentum. We also continue to anticipate dynamic growth in Southeast Asia at rates above the average for all emerging markets. Further economic recovery is expected in Brazil but the unresolved political crisis and the failure to implement reforms continue to be seen as challenges. Following the recession, Russia's growth rates are likely to remain below 2%. While this economy rich in raw materials is benefiting over the short term from the higher oil and gas prices, the prospects of medium-term growth are dampened by outstanding structural reforms and the ongoing trade sanctions.

## Economic conditions predominantly positive in Voith's markets

For the 2018/19 fiscal year, we anticipate predominantly positive conditions in Voith's five markets.

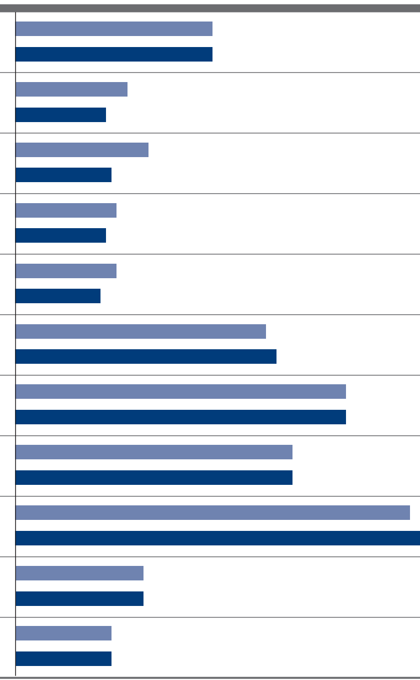
As global energy needs continue to rise, electricity-generating capacities will be expanded further, focusing in particular on renewable energies. As part of this trend, the need for pumped storage power plants to safeguard grid stability and supply reliability is also rising. In the conventional sector, the strongest growth is expected in nuclear power generation. Despite the generally positive outlook for hydropower, the volume awarded may be subject to volatile fluctuations from year to year that are difficult to predict. As decisions on the awarding of several major projects are imminent, we assume the market volume in the 2018/19 fiscal year will be slightly up on that reported in the year under review.

After the recovery in the oil price in the year under review, market analysts expect volatile price developments over the coming months and do not anticipate prices to noticeably stay above the USD 80 threshold on a lasting basis. Our planning for the 2018/19 fiscal year is based on a slight increase in investments in the oil & gas market that will, however, remain at a low level compared to the long term.

We remain optimistic with regard to the paper market. For the 2018/19 fiscal year, we expect global paper production – and with it also the demand for consumables and service offerings – to continue a course of slight growth. In our estimation, there will be a perceptible decline in investments in new machines and major rebuilds following two extraordinarily strong years but they will remain at a good level. The development in China will contribute to this decline as paper manufacturers there are confronted with limited supplies of waste paper as a raw material on account of stricter environmental regulations.

**Economic growth**
Real change in GDP on the previous year[1]

| | | |
|---|---|---|
| **World output** | 2019 | 3.7% |
| | 2020 | 3.7% |
| **Advanced economies** | 2019 | 2.1% |
| | 2020 | 1.7% |
| USA | 2019 | 2.5% |
| | 2020 | 1.8% |
| Euro area[2] | 2019 | 1.9% |
| | 2020 | 1.7% |
| Germany | 2019 | 1.9% |
| | 2020 | 1.6% |
| **Emerging market and developing economies** | 2019 | 4.7% |
| | 2020 | 4.9% |
| China | 2019 | 6.2% |
| | 2020 | 6.2% |
| ASEAN-5 | 2019 | 5.2% |
| | 2020 | 5.2% |
| India | 2019 | 7.4% |
| | 2020 | 7.7% |
| Brazil | 2019 | 2.4% |
| | 2020 | 2.4% |
| Russia | 2019 | 1.8% |
| | 2020 | 1.8% |



Source: International Monetary Fund (IMF); World Economic Outlook, Oct. 2018.
[1] Forecasts.
[2] Including Germany.

With regard to the raw materials market, we assume that the turnaround has now been achieved and that investment activities will see another slight increase in the 2018/19 fiscal year supported by price levels for many raw materials remaining robust. The coal segment is one exception: a downward trend in prices and declining investments are expected on account of fossil energy sources being phased out worldwide. We anticipate slight investment growth in the steel industry on account of higher capacity utilization but we also see uncertainties in this sector on account of the punitive tariffs imposed by the USA.

We continue to be optimistic about the segments of the transport and automotive market that are most important for Voith. We expect a slight increase in the commercial vehicle segment. The global rail market is also likely to see minor growth with clear impetus coming from the service business although competition remains intense. In the marine segment, we expect the recovery to continue at a low level. Politically unstable situations in some countries and generally protectionist tendencies constitute potential obstacles to growth. The transport & automotive market will be increasingly characterized by the trend towards e-mobility as well as automation and digitalization.

The forecast for our business assumes that there will be no unexpected economic or political shocks.

## 10.2. Future development of the Company

In recent years, Voith has overcome immense structural and financial challenges and set an important strategic course. We now want to enter into a new phase of sustainable, profitable growth. We are not only aiming for significant growth with our young Digital Ventures Group Division, we also intend to increase the level of orders received in our core business activities, in other words in the three traditional Group Divisions on aggregate, in the 2018/19 fiscal year. The sales of the Hydro, Paper and Turbo Group Divisions are expected to remain stable in the current fiscal year as a result of the subdued level of orders received in the year under review. We primarily expect stimulus for growth from Digital Ventures. We expect a perceptible improvement in Group EBIT, driven by the Digital Ventures and Paper Group Divisions.

The Group Division Hydro expects slight growth of the hydropower market in the 2018/19 fiscal year. In addition to new hydropower plants, demand for modernization and other services is expected to further increase because many power plants in North America and Asia are nearing the end of their operating cycle after decades of operation. We want to increase our market share in the coming years and plan appreciable growth in orders received for the 2018/19 fiscal year compared to the year under review (€856 million). We particularly see great potential for Voith in China, where several pumped storage power plants are planned, and we consider ourselves well positioned due to our powerful technology, and in modernization projects in North America. The African market has great potential, but remains volatile and hard to predict. Despite the decreased level of orders received in the year under review, the Group Division Hydro's sales are expexted to remain stable (2017/18: €1,103 million), given the still high level of orders on hand. We also see stable development for EBIT (2017/18: €66 million). We are planning for a slight increase in ROCE compared to the year under review (16.9%), which will primarily be achieved by a reduction of the capital employed.

In the Group Division Paper, we expect sales for the 2018/19 fiscal year to remain roughly stable at the high level of the year under review (€1,746 million). At the same time, we are planning to further increase our EBIT (2017/18: €102 million). We anticipate a further slight improvement in the profitability indicator ROCE compared to the high level already reached (18.2%), as we are not only budgeting for better results but also wish to reduce the capital employed. For the current year, we see the order situation remaining good for the Group Division Paper. However, after two years marked by exceptionally high investment and major projects, we are now preparing for a normalization of the market. For this reason our planning is based on satisfactory, but perceptibly lower figures for orders received than in the 2017/18 fiscal year (€1,995 million). We anticipate good business in Europe and Asia; in Brazil improvements are not expected in the short term.

In the Group Division Turbo, the order situation in the year under review continued to improve. We anticipate a slight increase in orders received in the 2018/19 fiscal year compared to the year under review (€1,378 million), which will be supported by both Divisions, Industry and Mobility. We see growth momentum in particular in commercial and rail vehicles and in mining. The Group Division Turbo's sales (2017/18: €1,302 million) are expected to remain stable. In terms of results, Turbo will benefit from good operating development in both Divisions. In addition, there will be positive impacts from ongoing efficiency programs. We are thus planning an increase in EBIT before non-recurring effects for the Group Division Turbo. We expect a slight increase in ROCE (2017/18: 11.1%).

For the young Group Division Digital Ventures, from the situation in the year under review (sales 2017/18: €40 million) we expect a jump in sales in the 2018/19 fiscal year, which is partly caused by the consolidation of Voith Robotics and FlowLink Systems in this Group Division for a full fiscal year for the first time. The sales that the Group Divisions of the traditional core business generate with digital products and solutions are not included in this figure. EBIT is expected to perceptibly improve compared to the year under review (€-46 million) in view of the rising sales, but to remain negative due to the research and development activities in the fundamental platform business and the start-up situation. The resulting negative impact on earnings for the Group can be shouldered by the profitable core business. We regard these build-up costs as an investment in a business that is intended to become an important growth driver for the Voith Group over the coming years.

## Voith Group with profitable growth

In the Voith Group, after two years that have largely been marked by stable performance, the signs point to growth again. We anticipate a perceptible rise in the level of orders received in the 2018/19 fiscal year compared to the previous year (2017/18: €4,285 million). Appreciable growth in Hydro is expected to more than compensate for the anticipated slowdown in the paper machines market. The Group Division Turbo is also expected to contribute to the growth. Our sales predictions anticipate a slight increase at Group level compared to the current year under review (€4,209 million). We continue to work on Voith's profitability and productivity. For example, we have set ourselves the target of perceptibly increasing Group EBIT compared to the year under review (€187 million). Both the core business and the young Group Division Digital Ventures are expected to contribute to the improvement in the operating result. We aim towards a perceptible increase in ROCE (2017/18: 10.6%).

Forecasts are always subject to considerable uncertainty. A host of macroeconomic and industry-specific factors can influence, positively or negatively, the development of individual Group Divisions or the entire Group. For information on the significant risks and opportunities that could lead to a negative/positive forecast deviation, we refer to sections 09.2. and 09.3. of this management report. We will closely observe further developments as they occur and, where necessary, respond rapidly and decisively to changing conditions. Voith is a fundamentally healthy company. Our robust financial constitution and reliable long-term access to capital provides us with the entrepreneurial scope we need to implement the decisions we regard to be expedient. The aim of the Corporate Board of Management is to keep the Company on a secure footing for the long term and to actively steer it into the next decade of the 21st century. Voith is excellently equipped to meet the challenges ahead: we have a portfolio that is fit for the future, sustainable customer relationships, an efficient organization and an outstanding workforce.

# Consolidated Financial Statements

# Consolidated statement of income

## for the period from October 1, 2017 to September 30, 2018

| in € thousands | Note | 2017/18 | 2016/17* |
|---|---|---|---|
| Sales | (1) | 4,209,057 | 4,224,056 |
| Changes in inventories and other own work capitalized | (2) | 42,275 | 14,922 |
| **Total output** | | **4,251,332** | **4,238,978** |
| Other operating income | (3) | 391,131 | 400,485 |
| Cost of materials | (4) | -1,887,634 | -1,840,383 |
| Personnel expenses | (5) | -1,446,885 | -1,408,260 |
| Depreciation and amortization | | -120,602 | -126,108 |
| Other operating expenses | (6) | -1,017,569 | -1,039,952 |
| **Operational result before non-recurring items** | | **169,773** | **224,760** |
| Non-recurring result | (7) | -21,899 | -32,179 |
| **Operational result** | | **147,874** | **192,581** |
| Share of profit/loss from companies accounted for using the equity method | | 1,610 | 7,592 |
| Gains/losses from the disposal of associates | | 0 | 562,575 |
| Interest income | | 8,660 | 17,819 |
| Interest expenses | | -25,327 | -76,394 |
| Other financial result | (8) | 19,019 | -9,830 |
| **Result before taxes from continuing operations** | | **151,836** | **694,343** |
| Income taxes | (9) | -66,690 | -82,306 |
| **Net result from continuing operations** | | **85,146** | **612,037** |
| **Net result from discontinued operations** | | **-31,901** | **-16,294** |
| **Net result** | | **53,245** | **595,743** |
| Net result attributable to shareholders of the parent company | | 45,015 | 590,171 |
| Net result attributable to holders of non-controlling interests | | 8,230 | 5,572 |

* Previous-year figures restated.

# Consolidated statement of comprehensive income

## for the period from October 1, 2017 to September 30, 2018

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| **Net result** | **53,245** | **595,743** |
| *Components of other comprehensive income that will not be recycled through profit or loss in later accounting periods:* | | |
| Remeasurement of defined benefit plans | 12,804 | 67,780 |
| Taxes on components of other comprehensive income that will not be recycled through profit or loss in later accounting periods | 1,526 | -21,043 |
| *Components of other comprehensive income that will be recycled through profit or loss in later accounting periods:* | | |
| Gains/losses on available-for-sale financial assets | 2,596 | -12,222 |
| Gains/losses on cash flow hedges | 1,873 | 2,375 |
| Gains/losses on currency translation | -61,781 | -32,619 |
| Gains/losses on net investment in foreign operations | -423 | 3 |
| Taxes on components of other comprehensive income that will be recycled through profit or loss in later accounting periods | -1,270 | -681 |
| **Other comprehensive income** | **-44,675** | **3,593** |
| **Total comprehensive income** | **8,570** | **599,336** |
| · Total comprehensive income attributable to shareholders of the parent company | 777 | 597,833 |
| · Total comprehensive income attributable to non-controlling interests | 7,793 | 1,503 |
| | **8,570** | **599,336** |

# Consolidated balance sheet

as at September 30, 2018

## Assets

| in € thousands | | | 2018-09-30 | 2017-09-30 |
|---|---|---|---|---|
| **A.** | **Non-current assets** | | | |
| I. | Intangible assets | (10) | 520,600 | 515,676 |
| II. | Property, plant and equipment | (11) | 898,764 | 978,459 |
| III. | Investments accounted for using the equity method | (12) | 21,920 | 32,006 |
| IV. | Securities | (16) | 11,687 | 11,734 |
| V. | Other financial assets | | 92,008 | 105,954 |
| VI. | Other financial receivables | (15) | 61,907 | 89,411 |
| VII. | Other assets | (15) | 15,939 | 10,749 |
| VIII. | Deferred tax assets | (9) | 172,783 | 204,538 |
| **Total non-current assets** | | | **1,795,608** | **1,948,527** |
| **B.** | **Current assets** | | | |
| I. | Inventories | (13) | 603,516 | 547,825 |
| II. | Trade receivables | (14) | 687,984 | 713,899 |
| III. | Receivables from customer-specific contracts | (14) | 346,729 | 323,929 |
| IV. | Securities | (16) | 617,974 | 601,812 |
| V. | Current income tax assets | | 49,945 | 52,263 |
| VI. | Other financial receivables | (15) | 93,168 | 101,289 |
| VII. | Other assets | (15) | 116,227 | 110,544 |
| VIII. | Cash and cash equivalents | (17) | 341,691 | 581,947 |
| | | | **2,857,234** | **3,033,508** |
| IX. | Assets held for sale | (18) | 23,411 | 15,845 |
| **Total current assets** | | | **2,880,645** | **3,049,353** |
| **Total assets** | | | **4,676,253** | **4,997,880** |

## Equity and liabilities

| in € thousands | | | 2018-09-30 | 2017-09-30 |
|---|---|---|---|---|
| **A.** | **Equity** | | | |
| I. | Issued capital | | 120,000 | 120,000 |
| II. | Revenue reserves | | 1,169,964 | 1,138,763 |
| III. | Other reserves | | -96,047 | -37,664 |
| IV. | Profit participation rights | | 6,600 | 6,600 |
| **Equity attributable to shareholders of the parent company** | | | **1,200,517** | **1,227,699** |
| V. | Profit participation rights | | 96,800 | 96,800 |
| VI. | Other interests | | 43,002 | 41,425 |
| **Equity attributable to non-controlling interests** | | | **139,802** | **138,225** |
| **Total equity** | | (19) | **1,340,319** | **1,365,924** |
| **B.** | **Non-current liabilities** | | | |
| I. | Provisions for pensions and similar obligations | (20) | 713,432 | 747,282 |
| II. | Other provisions | (21) | 156,355 | 190,611 |
| III. | Income tax liabilities | | 254 | 277 |
| IV. | Bonds, bank loans and other interest-bearing liabilities | (22) | 325,284 | 551,363 |
| V. | Other financial liabilities | (24) | 26,678 | 35,635 |
| VI. | Other liabilities | (24) | 48,269 | 58,222 |
| VII. | Deferred tax liabilities | (9) | 40,139 | 53,744 |
| **Total non-current liabilities** | | | **1,310,411** | **1,637,134** |
| **C.** | **Current liabilities** | | | |
| I. | Provisions for pensions and similar obligations | (20) | 30,857 | 29,319 |
| II. | Other provisions | (21) | 278,575 | 343,082 |
| III. | Income tax liabilities | | 24,450 | 46,968 |
| IV. | Bonds, bank loans and other interest-bearing liabilities | (22) | 125,779 | 82,516 |
| V. | Trade payables | (23) | 510,585 | 509,741 |
| VI. | Liabilities from customer-specific contracts | (14) | 93,720 | 45,623 |
| VII. | Other financial liabilities | (24) | 230,509 | 234,080 |
| VIII. | Other liabilities | (24) | 730,156 | 703,493 |
| | | | **2,024,631** | **1,994,822** |
| IX. | Liabilities directly associated with the assets classified as held for sale | (18) | 892 | 0 |
| **Total current liabilities** | | | **2,025,523** | **1,994,822** |
| **Total equity and liabilities** | | | **4,676,253** | **4,997,880** |

# Consolidated statement of changes in equity

| in € thousands | Equity attributable to shareholders of the parent company | | | | |
|---|---|---|---|---|---|
| | Issued capital | Revenue reserves | Gains/losses on available-for-sale financial assets | Cash flow hedges | Currency translation |
| **2017-10-01** | **120,000** | **1,138,763** | **1,708** | **-2,319** | **-32,553** |
| Net result | | 45,015 | | | |
| Other comprehensive income | | 14,145 | 1,656 | 1,313 | -61,055 |
| **Total comprehensive income** | **0** | **59,160** | **1,656** | **1,313** | **-61,055** |
| Allocation of profit participation rights | | -5,590 | | | |
| Share of net result attributable to profit participation rights | | | | | |
| Dividends | | -25,000 | | | |
| Non-controlling interests – capital contributions | | | | | |
| Non-controlling interests – put options | | 4,622 | | | |
| Other adjustments | | -1,991 | | | |
| **2018-09-30** | **120,000** | **1,169,964** | **3,364** | **-1,006** | **-93,608** |

| in € thousands | Equity attributable to shareholders of the parent company | | | | |
|---|---|---|---|---|---|
| | Issued capital | Revenue reserves | Gains/losses on available-for-sale financial assets | Cash flow hedges | Currency translation |
| **2016-10-01** | **120,000** | **532,060** | **13,968** | **-4,010** | **-4,015** |
| Net result | | 590,171 | | | |
| Other comprehensive income | | 46,766 | -12,260 | 1,691 | -28,538 |
| **Total comprehensive income** | **0** | **636,937** | **-12,260** | **1,691** | **-28,538** |
| Allocation of profit participation rights | | -5,590 | | | |
| Changes in non-controlling interests as a result of changes in group structure | | 254 | | | |
| Share of net result attributable to profit participation rights | | | | | |
| Dividends | | -18,000 | | | |
| Non-controlling interests – capital contributions | | | | | |
| Non-controlling interests – put options | | -7,431 | | | |
| Other adjustments | | 533 | | | |
| **2017-09-30** | **120,000** | **1,138,763** | **1,708** | **-2,319** | **-32,553** |

| | Net investment in foreign operations | Profit participation rights | Total | Equity attributable to non-controlling interests: Profit participation rights | Other interests | Total | Total equity |
|---|---|---|---|---|---|---|---|
| | **-4,500** | **6,600** | **1,227,699** | **96,800** | **41,425** | **138,225** | **1,365,924** |
| | | | 45,015 | | 8,230 | 8,230 | 53,245 |
| | -297 | | -44,238 | | -437 | -437 | -44,675 |
| | **-297** | **0** | **777** | **0** | **7,793** | **7,793** | **8,570** |
| | | 363 | -5,227 | 5,227 | | 5,227 | 0 |
| | | -363 | -363 | -5,227 | | -5,227 | -5,590 |
| | | | -25,000 | | -9,756 | -9,756 | -34,756 |
| | | | | | 3,792 | 3,792 | 3,792 |
| | | | 4,622 | | -1,985 | -1,985 | 2,637 |
| | | | -1,991 | | 1,733 | 1,733 | -258 |
| | **-4,797** | **6,600** | **1,200,517** | **96,800** | **43,002** | **139,802** | **1,340,319** |

| | Net investment in foreign operations | Profit participation rights | Total | Equity attributable to non-controlling interests: Profit participation rights | Other interests | Total | Total equity |
|---|---|---|---|---|---|---|---|
| | **-4,503** | **6,600** | **660,100** | **96,800** | **42,034** | **138,834** | **798,934** |
| | | | 590,171 | | 5,572 | 5,572 | 595,743 |
| | 3 | | 7,662 | | -4,069 | -4,069 | 3,593 |
| | **3** | **0** | **597,833** | **0** | **1,503** | **1,503** | **599,336** |
| | | 363 | -5,227 | 5,227 | | 5,227 | 0 |
| | | | 254 | | -470 | -470 | -216 |
| | | -363 | -363 | -5,227 | | -5,227 | -5,590 |
| | | | -18,000 | | -4,928 | -4,928 | -22,928 |
| | | | | | 1,381 | 1,381 | 1,381 |
| | | | -7,431 | | 1,881 | 1,881 | -5,550 |
| | | | 533 | | 24 | 24 | 557 |
| | **-4,500** | **6,600** | **1,227,699** | **96,800** | **41,425** | **138,225** | **1,365,924** |

# Consolidated cash flow statement

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Result before taxes from continuing and discontinued operations | 119,935 | 680,384 |
| Depreciation and amortization | 126,446 | 129,996 |
| Interest expenses/income | 16,686 | 58,589 |
| Other non-cash items | -1,631 | -568,376 |
| Gains/losses from the disposal of property, plant and equipment and intangible assets | -557 | -4,291 |
| Gains/losses from investments | -24,438 | -20,368 |
| Changes in provisions and accruals | -123,749 | -5,662 |
| Change in net working capital | -8,002 | -21,766 |
| Interest paid | -17,235 | -53,455 |
| Interest received | 10,971 | 12,729 |
| Dividends received | 2,393 | 20,491 |
| Tax paid | -70,142 | -93,036 |
| **Cash flow from operating activities** | **30,677** | **135,235** |
| Investments in property, plant and equipment and intangible assets | -93,633 | -95,890 |
| Proceeds from the disposal of property, plant and equipment and intangible assets | 5,923 | 12,135 |
| Investments in financial assets | -62,422 | -6,870 |
| Subsequent purchase price payments/receipts for earlier acquisitions | -16,307 | 39,481 |
| Acquisition of consolidated subsidiaries minus cash and cash equivalents | -5,694 | -40,854 |
| Proceeds from the disposal of financial assets | 113,238 | 1,151,743 |
| Proceeds from the disposal of securities | 145,540 | 139,774 |
| Payments for the acquisition of securities | -155,277 | -648,474 |
| **Cash flow from investing activities** | **-68,632** | **551,045** |
| Dividends paid | -35,325 | -28,518 |
| Contributions from holders of non-controlling interests | 3,792 | 1,381 |
| Acquisition of non-controlling interests | 0 | -216 |
| New bonds, bank loans and overdrafts | 49,340 | 21,293 |
| Repayment of bonds, bank loans and overdrafts | -214,601 | -738,697 |
| Changes in other interest-bearing financial receivables and liabilities | 18,290 | 1,780 |
| **Cash flow from financing activities** | **-178,504** | **-742,977** |
| **Total cash flow** | **-216,459** | **-56,697** |
| Exchange rate movements and valuation changes | -23,797 | -11,028 |
| Cash and cash equivalents at the beginning of the period | 581,947 | 649,672 |
| **Cash and cash equivalents at the end of the period** | **341,691** | **581,947** |

# Notes to the consolidated financial statements for the 2017/18 fiscal year

## General information

Voith GmbH & Co. KGaA (Voith), which has its headquarters at St. Pöltener Str. 43, Heidenheim an der Brenz, is registered at the commercial register in Ulm, Germany (HRB 735450) and is the parent company of the Voith Group. The Board of Management of Voith Management GmbH (HRB 735126) is responsible for the strategy and operative management of the Voith Group. Voith Management GmbH is the personally liable shareholder (general partner) of and responsible for the management of the business of Voith GmbH & Co. KGaA.

Voith GmbH & Co. KGaA prepares consolidated financial statements as at September 30, 2018 on the basis of IFRS as endorsed by the EU, and a Group management report for the smallest consolidated group of companies. JMV GmbH & Co. KG, as parent of the largest group of companies requiring consolidation, prepares consolidated financial statements as at September 30, 2018 on the basis of IFRS as endorsed by the EU, and a Group management report for the largest consolidated group of companies. Both sets of consolidated financial statements are published in the Bundesanzeiger (German Federal Gazette). The Board of Management of Voith Management GmbH authorized the consolidated financial statements for presentation to the Supervisory Board on November 28, 2018.

The preparation of the consolidated financial statements for the 2017/18 fiscal year in accordance with IFRS and the interpretations of the International Financial Reporting Interpretations Committee (IFRIC) was undertaken on a voluntary basis because Voith does not participate in capital markets as defined by EU Regulation (EC) No. 1606/2002. In preparing these consolidated financial statements, Voith has applied all pronouncements which are binding on capital market participants issued by the International Accounting Standards Board (IASB) as well as the additional requirements of German commercial law pursuant to Sec. 315e HGB. The consolidated financial statements have been prepared in euros. Except where explicitly stated otherwise, all amounts are stated in thousands of euros (€ thousands). Minor rounding differences may occur.

The Voith Group is divided into four segments: Hydro, Paper, Turbo and Digital Solutions (as at October 1, 2018; “Digital Ventures”). Details of the business activities pursued by the Group’s segments are provided in the explanatory notes to the segment reporting.

## Consolidated group

In addition to those entities acting as holding companies, the consolidated financial statements also include all the Group's manufacturing, service and sales companies both in Germany and in other countries as at September 30 of each fiscal year. The financial statements of the subsidiaries are prepared for the same period as their parents' financial statements, using consistent accounting policies.

Subsidiary companies are consolidated in full from the date on which the Group obtains control. They are no longer included in the consolidation as soon as the parent company ceases to have control. For four companies (previous year: four) control over companies included in the consolidation is obtained due to the fact that the Group has a majority of voting rights in the relevant decision-making bodies.

The following companies are included in the consolidated financial statements:

| | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Voith GmbH & Co. KGaA and its fully consolidated subsidiaries: | | |
| · Germany | 32 | 32 |
| · Other countries | 113 | 111 |
| | **145** | **143** |
| Associates and joint ventures: | | |
| · Germany | 3 | 3 |
| · Other countries | 5 | 11 |
| | **8** | **14** |

**The following significant companies are included in the consolidated financial statements:**

VZ Voith GmbH & Co. KGaA, Heidenheim, Germany

VHH Voith Hydro GmbH & Co. KG, Heidenheim, Germany
VHY Voith Hydro Inc., York (PA), USA
VHP Voith Hydro Ltda, São Paulo (SP), Brazil
VHPO Voith Hydro GmbH & Co. KG, St. Pölten, Austria
VHM Voith Hydro Inc., Brossard (QC), Canada
VHS Voith Hydro Shanghai Ltd., Shanghai, China
VHFK Voith Fuji Hydro K.K., Kawasaki-shi, Kanagawa, Japan
VHN Voith Hydro Private Limited, New Delhi, India

| | |
|---|---|
| VPH | Voith Paper GmbH & Co. KG, Heidenheim, Germany |
| VPP | Voith Paper Máquinas e Equipamentos Ltda., São Paulo (SP), Brazil |
| VPEZ | Voith Paper Fabric & Roll Systems GmbH & Co. KG, Heidenheim, Germany |
| VPIT | Voith IHI Paper Technology Co., Ltd., Tokyo, Japan |
| VPC | Voith Paper (China) Co., Ltd., Kunshan, Jiangsu, China |
| VPFS | Voith Paper Fabric & Roll Systems Inc., Wilson (NC), USA |
| VPA | Voith Paper Inc., Appleton (WI), USA |
| VPFI | Voith Paper Fabrics Ipoh Sdn. Bhd., Chemor, Perak Darul Ridzuan, Malaysia |
| VPTA | Voith Paper S.A., Ibarra (Guipúzcoa), Spain |
| | |
| VTA | Voith Turbo GmbH & Co. KG, Heidenheim, Germany |
| VTI | Voith Turbo Inc., York (PA), USA |
| VTKT | Shanghai Voith Schaku KTK Coupler Technology Co., Ltd., Shanghai, China |
| VTCN | Voith Turbo Power Transmission (Shanghai) Co., Ltd., Shanghai, China |
| VTIP | Voith Turbo Private Limited, Hyderabad (A.P.), India |
| VTHL | Voith Turbo H + L Hydraulic GmbH & Co. KG, Rutesheim, Germany |
| VTPA | Voith Turbo Ltda., São Paulo (SP), Brazil |
| VTGB | Voith Turbo Limited, Croydon, United Kingdom |
| VTAU | Voith Turbo Pty. Ltd., Wetherill Park, N.S.W., Australia |
| | |
| DSIF | FlowLink Systems Private Ltd., Coimbatore, India |

An exhaustive list of the companies and other investments included in the consolidated financial statements can be found in the consolidated financial statements. The consolidated financial statements of Voith GmbH & Co. KGaA are filed with the Bundesanzeiger pursuant to Sec. 264b No. 3 HGB and Sec. 264 (3) No. 4 HGB.

Significant non-controlling interests are held in the following company with its subsidiaries:

### Voith Hydro Holding GmbH & Co. KG, Heidenheim, Germany

| | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Non-controlling shareholding, in % | 35 | 35 |

The voting share capital held by Voith Hydro GmbH & Co. KG is equal to the percentage of share capital held.

The following table shows the financial data of significant subsidiary companies with non-controlling shareholders (the figures are those of the Voith Hydro Holding GmbH & Co. KG segment):

### Voith Hydro Holding GmbH & Co. KG, Heidenheim, Germany

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Sales | 1,113,148 | 1,387,460 |
| Net result | 12,569 | 43,377 |
| Net result attributable to non-controlling interests | 2,285 | 13,290 |
| Other comprehensive income | -21,731 | 1,505 |
| Total comprehensive income | -9,162 | 44,882 |
| Total comprehensive income attributable to non-controlling interests | -5,195 | 14,402 |
| Current assets | 971,006 | 1,030,285 |
| Non-current assets | 257,176 | 301,140 |
| Current liabilities | 749,908 | 757,149 |
| Non-current liabilities | 239,429 | 307,563 |
| Net assets | 238,845 | 266,713 |
| Net assets attributable to non-controlling interests | 71,422 | 80,574 |
| Cash flow from operating activities | -24,693 | -62,919 |
| Cash flow from investing activities | -13,993 | -12,090 |
| Cash flow from financing activities | 18,430 | 107,142 |
| Total cash flow | **-20,256** | **32,133** |
| Net foreign exchange difference | -8,771 | -4,129 |
| Net increase/decrease in cash and cash equivalents | **-29,027** | **28,004** |

### Business combinations in the 2016/17 fiscal year

On July 1, 2017, J.M. Voith SE & Co. KG (formerly: J.M. Voith GmbH & Co. Beteiligungen KG) had acquired 100% of the share capital of RS Beteiligungs GmbH. At that time, RS Beteiligungs GmbH held 60% of the shares in Ray Sono AG. Ray Sono AG is one of Germany's leading agencies for digital communication and interaction. With this acquisition Voith has secured a strategic partnership with which we can play a significant role in the digital transformation being made by our customers as well as gain growth potential from the new digital business models.

Under the terms of the business combination, the minority shareholders were given the right to sell their shareholdings to Voith after a lock-up period of approximately four years (put option). As the business combination was accounted for under the anticipated acquisition method, the resulting put options were recorded within financial liabilities at an amount of €26 million.

Intangible assets totaling €13.28 million were identified in the purchase price allocation. These are included in the schedule of development of intangible assets presented in note 10 in the category "Business combinations".

The difference between the purchase price and the acquired net assets revalued to their respective fair values amounting to €54.74 million has been reported as goodwill, and represents the potential synergy effects to be gained from the diversification of the core business of the Voith Group prior to the acquisition.

In the 2016/17 fiscal year (since July 1, 2017), Ray Sono AG contributed €5.76 million to the Group's sales. In the same period, its share of the net result for the year totaled €-1.46 million (after including amortization of €0.73 million after tax recorded on the intangible assets determined within the purchase price allocation).

If Ray Sono had been included in the Group for the complete 2016/17 fiscal year it would have generated additional sales of €15.4 million in the previous year and an additional net result of €1.7 million.

### Balance sheet item

| in € thousands | Fair value at acquisition date |
|---|---|
| Intangible assets | 13,277 |
| Property, plant and equipment | 784 |
| Inventories | 1,201 |
| Receivables | 4,301 |
| Other assets | 412 |
| Cash and cash equivalents | 1,586 |
| Other liabilities and accruals | -7,930 |
| Financial liability (put) | -26,000 |
| **Net fair value** | **-12,369** |
| Goodwill | 54,741 |
| **Purchase price of the interests purchased** | **42,372** |
| Cash and cash equivalents | -1,586 |
| **Cash in-/outflow** | **40,786** |

The purchase price was paid before the end of the 2016/17 fiscal year.

### Business combinations in the 2017/18 fiscal year

The shareholding in FlowLink Systems Private Ltd. was increased from 50% to 80% in April 2018. This company, headquartered in Coimbatore, India, manufactures industrial valves and valve components that are used in the oil & gas market, in mining, in power plants and in the area of sewage treatment. The company is increasingly focusing on digital solutions with its product portfolio. The company has been fully consolidated since April 1, 2018 and is assigned to our Group Division Digital Solutions. In the past, the 50% shareholding was accounted for using the equity method.

Under the terms of the business combination, Voith agreed to acquire the remaining 20% of the FlowLink shares on March 31, 2021 or at a later date assuming mutual agreement by the parties to the contract. This resulted in an obligation of €5.2 million that is reported under financial liabilities. This obligation is measured on the basis of the contractually agreed terms.

The remeasurement of the 50% shareholding in FlowLink previously accounted for using the equity method gave rise to a loss of €942 thousand that was recognized in the statement of income of the Group. The remeasured 50% shareholding and the purchase price for the 30% shareholding acquired in the 2017/18 fiscal year are included in the table below.

The business combination is presented using the anticipated acquisition method in combination with the full goodwill method.

Intangible assets totaling €2.1 million were identified within the scope of the purchase price allocation. These are included in the schedule of development of intangible assets presented in note 10 in the category “Business combinations”. The purchase price allocation similarly identified hidden reserves of €5.1 million from the fair value revaluation of land, most of which has been developed.

The difference between the purchase price and the acquired net assets revalued to their respective fair values amounting to €2.4 million has been reported as goodwill, and represents the potential synergy effects to be gained by the Voith Group. None of the amounts contributing to these synergy effects are assets which are permitted to be identified as separate intangible assets; they are regarded as elements of the acquired goodwill.

Since April 1, 2018, FlowLink has contributed an additional €10.8 million to the Group’s sales. In the same period, its share of the net result for the year totaled €1.0 million (after including amortization of €0.4 million after tax recorded on the intangible assets determined within the purchase price allocation).

If FlowLink had been included in the Group for the whole fiscal year it would have generated additional sales of €9.3 million and an additional net result for the year of €75 thousand.

### Balance sheet item

| in € thousands | Fair value at acquisition date |
|---|---|
| Intangible assets | 2,118 |
| Property, plant and equipment | 14,787 |
| Financial assets | 806 |
| Inventories | 4,428 |
| Receivables | 5,847 |
| Other assets | 2,888 |
| Cash and cash equivalents | 57 |
| Other liabilities and accruals | -12,778 |
| Forward liability for 20% shareholding | -5,200 |
| **Net fair value** | **12,953** |
| Goodwill | 2,383 |
| **Fair value of the 80% shareholding held by Voith** | **15,336** |
| Thereof: fair value of the 50% shareholding already held | 9,585 |
| **Purchase price of the 30% shareholding newly acquired** | **5,751** |
| Cash and cash equivalents | -57 |
| **Cash outflow** | **5,694** |

The purchase price for the acquisition of the 30% shareholding has already been paid.

### Acquisition in the 2016/17 fiscal year of further interests in companies over which the Group already has control

The remaining 30% interest in Voith Paper Integrated Mill Service Co., Ltd., Kunshan, Jiangsu (China), was acquired in the 2016/17 fiscal year. The purchase price amounted to €216 thousand.

### Acquisition in the 2017/18 fiscal year of further interests in companies over which the Group already has control

In the 2017/18 fiscal year, there were no acquisitions of further interests in companies over which the Group already has control.

### Disposal of shares

Within the scope of the disposal of the Industrial Services segment in the 2015/16 fiscal year, a 20% interest was retained in the Industrial Services entities sold. In addition, the majority owner was granted the right to acquire all shares retained by Voith. This call option was accounted for separately from the interest in the previous year and was exercised by the majority owner in the first half of the current fiscal year. The purchase price of €36 million was counterbalanced by the investment's carrying amount of €22 million and a liability from the call option of €4 million. Consequently, the disposal gave rise to a gain on sale of €18 million.

### Discontinued operations in the 2017/18 fiscal year

In the second half of the year under review, the decision was taken to sell the business operations of Voith Composites SE & Co. KG. Accordingly, these business operations are classified as held for sale and treated as a discontinued operation.

The following items were disclosed in the net result from the discontinued operations relating to Voith Composites SE & Co. KG included in the statement of income (the figures for the previous year were correspondingly adjusted in the statement of income and are therefore of limited comparability):

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Income | 9,818 | 8,847 |
| Expenses | -41,719 | -20,790 |
| **Operational result before taxes** | **-31,901** | **-11,943** |
| Income taxes | 0 | 0 |
| **Net result** | **-31,901** | **-11,943** |

The expenses in the year under review contain an impairment loss of €19,428 thousand as a consequence of applying the provisions of IFRS 5.15.

The previous-year figure contained in the statement of income additionally includes expenses of €4,351 thousand from the sale of the Industrial Services segment already completed in the previous year.

Cash flow from discontinued operations:

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Cash flow from operating activities | -10,103 | -12,519 |
| Cash flow from investing activities | -442 | -2,130 |

The carrying amount of the assets and liabilities held for sale attributable to Voith Composites SE & Co. KG are presented in note 18.

## Basis of consolidation

Acquisition accounting is performed using the acquisition method in accordance with IFRS 3 (revised). Accordingly, the consideration transferred to the seller plus any non-controlling interests and the fair value of the previously held equity interests in the acquiree are offset against the fair value of the acquired assets and liabilities as at the acquisition date. Any excess of cost over carrying amount is recognized as goodwill. Any excess of carrying amount over cost is recognized in profit or loss.

Any contingent consideration is recognized at acquisition date fair value. Subsequent changes to the fair value of the contingent consideration, which represents an asset or liability, will be recognized either in profit or loss or in other comprehensive income in accordance with IAS 39. If the contingent consideration is classified as equity, it is not remeasured and its subsequent settlement is accounted for within equity.

In the case of business combinations achieved in stages that give rise to control over an entity, or in the case of disposals of shares which result in a loss of control, the previously held or remaining equity interests are remeasured at fair value through profit or loss.

A change in the parent's ownership interest in a subsidiary that does not result in a loss of control is accounted for as an equity transaction. Accordingly, business combinations achieved in stages where the Group already has control or disposals of shares without a loss of control have been recognized directly in equity without affecting the result for the period from the 2009/10 fiscal year onwards.

Companies in which Voith GmbH & Co. KGaA has the power to directly or indirectly exercise a significant influence on financial and operating policy decisions (associates) are accounted for using the equity method, as are joint ventures over which common control is exercised together with other companies. Changes in the share of the associate's/joint venture's equity that are not recognized in profit or loss are likewise recognized directly in equity in the consolidated financial statements. The same accounting policies are used to determine Voith's share in equity of all companies accounted for using the equity method.

Receivables and liabilities between the consolidated companies are eliminated on consolidation. Intercompany profits in inventories and non-current assets are eliminated in the consolidated statement of income. Intercompany sales and other intercompany income are netted against the corresponding expense. Deferred tax is recognized for consolidation transactions that are recognized in profit or loss.

## Foreign currency translation

The consolidated financial statements are presented in euros, which is Voith GmbH & Co. KGaA's functional currency. Financial statements prepared by subsidiaries that use a different functional currency are translated as follows:

The equity of foreign companies included in the consolidated financial statements is translated at historical rates. All other items on the balance sheet are generally translated to the presentation currency at the rates applicable as at the reporting date. Goodwill arising from business combinations before transition to IFRS is an exception to this rule. This goodwill continues to be translated at historical exchange rates.

In the statement of income, income and expenses are translated at average exchange rates. Retained earnings and losses are translated using the relevant historical exchange rate.

Differences arising from currency translation are netted with other reserves.

Foreign currency transactions in local financial statements are translated at the historical exchange rates. At fiscal year-end the resulting monetary items are measured at the closing rate, and any exchange rate gains or losses are recorded as foreign exchange gains or losses under other operating income/expenses.

Exchange rate gains or losses resulting from long-term loans and liability balances, both between Group companies and on external balances, as well as valuation effects arising from their associated hedging instruments are reported within financial results in the statement of income.

Currency translation differences arising from loans denominated in foreign currencies (where these are used to hedge a net investment in foreign operations) are recognized in other comprehensive income until the underlying net investment is disposed of. These currency translation differences give rise to deferred tax items that are also recognized under other comprehensive income.

## Accounting policies

The consolidated financial statements are prepared using the historical cost method. The only exceptions to this rule are derivative financial instruments, available-for-sale financial instruments, and assets at fair value through profit or loss, which are recognized at fair value.

Consistent accounting policies are used to prepare the separate financial statements for the companies included in the consolidated financial statements. Significant accounting policies are described below.

### Income and expenses

Sales (adjusted for customer bonuses, cash discounts, and other rebates) are recognized when products or merchandise have been delivered and/or services rendered and when the risk of ownership has been transferred to the customer. Revenue earned under long-term construction contracts, which is primarily relevant for Paper and Hydro, is recognized in proportion to the completion of the performance obligations under a contract ("percentage of completion"). Please refer to the explanations on accounting for long-term construction contracts.

Interest expenses and interest income are recognized as they accrue. The effective interest method, i.e. the imputed interest rate, is used to discount estimated future cash receipts over the expected term to maturity of the financial instrument to the net carrying amount of the financial asset.

Dividend income is recognized when the Group's right to receive the payment is established.

Operating expenses are recognized as expenditure at the time when a service is used and other sales-related expenses are recognized as incurred. Taxes on income are calculated in accordance with tax law in the countries in which the Group operates.

For all categories of financial instruments recognized in accordance with IAS 39, net gains or losses as defined in IFRS 7 result from the measurement or disposal of financial instruments. At Voith, such income and expense items mainly consist of foreign exchange gains and losses, impairments, and gains/losses from the sale of financial instruments. Neither current interest income and expenses nor dividend income are included.

### Intangible assets

Intangible assets acquired for monetary consideration are recognized at acquisition cost and amortized on a straight-line basis over their estimated useful lives.

Internally generated intangible assets are capitalized as development costs based on their production costs, provided that manufacture of these assets meets the recognition criteria stated in IAS 38 and, in particular, that the generation of future economic benefits is probable. The production costs include all costs which are directly attributable to the development process and a proportionate share of overheads. These assets are amortized using the straight-line method from the date of completion, i.e. the start of production, over a defined period, which is usually between three and five years. If the requirements for capitalization are not satisfied, expenses are recognized in profit or loss in the fiscal year in which they were incurred.

Impairment losses are recorded in accordance with IAS 36 if the carrying amount of the asset exceeds its recoverable amount. The recoverable amount is the higher of an asset's value in use, the present value of expected future cash flows from the use of the asset, and the fair value less costs to sell. Should the reasons for impairment losses recognized in previous periods no longer apply, these impairment losses are reversed.

The reversal posted through profit or loss is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in previous years.

Impairment losses are generally shown in the statement of income under depreciation and amortization. Reversals of impairment losses are reported under other operating income. However, significant impairment losses, particularly those associated with the discontinuation of operations, are presented under the non-recurring result.

Borrowing costs that are directly attributable to intangible assets are capitalized as part of the cost of those assets.

Goodwill is tested for impairment at least annually. For impairment testing, goodwill is assigned to essentially four groups of cash-generating units. In line with the management's internal reporting practices, these are identified on the basis of the Group's operating activities. Voith has therefore defined the three established segments Hydro, Paper and Turbo as relevant groups of cash-generating units. Additional goodwill was recorded in the new Digital Solutions segment in the 2016/17 fiscal year as a result of the acquisition of Ray Sono AG. This was tested for impairment separately at the Ray Sono AG level due to the start-up situation in the new segment. The goodwill generated in the 2017/18 fiscal year relating to the increase in Voith's shareholding in FlowLink Systems Private Limited is likewise tested for impairment separately at the FlowLink Systems Private Limited level.

The Voith Group generally determines whether goodwill is impaired by reference to the value in use. This is based on the discounted cash flow projections taken from the latest business planning prepared by management. The planning assumptions are adjusted to reflect the current information available. Key assumptions on which calculations of fair value are based include assumptions about the trend in orders received and sales, growth rates on which the extrapolated cash flow forecasts beyond the planning horizon are based, and discount rates. Due account is taken of reasonable assumptions regarding macroeconomic trends and historical developments. Based on the value in use measurement of these assets there was no indication of a need to record an impairment loss on goodwill.

For the purposes of the impairment tests the following assumptions were made concerning the cash-generating units:

**Hydro:**
The Group Division Hydro anticipates slight growth in the hydropower market over the coming years. We expect an appreciable increase in orders received in the 2018/19 fiscal year. Our planning is based on the assumption that the market volume will be slightly up on the level of the current reporting period. Despite the fall in orders received in the year under review, sales are expected to remain stable in the 2018/19 fiscal year due to the continued high level of orders on hand.

**Paper:**
Paper achieved a perceptible increase in orders received in the 2017/18 fiscal year and a significant rise in the orders on hand at the end of the 2017/18 fiscal year. For the 2018/19 fiscal year, Paper expects stable sales and a decline in orders received in comparison to the previous year.

**Turbo:**
In its business planning, Turbo expects stable sales for the 2018/19 fiscal year and rising sales over the following years. Orders received over the 2017/18 fiscal year were slightly up on the previous year. This positive trend is still ongoing, and continuing moderate growth in orders received is forecast for the 2018/19 fiscal year.

**Ray Sono AG:**
Perceptible growth consistent with trends in the digital market is expected for orders received and sales over the planning years.

**FlowLink Systems Private Limited:**
Increases in orders received and sales are anticipated for the planning years.

The cash flow forecast is based on the detailed finance budget for the coming two years and a qualified top-down projection for years three to five. Cash flows for periods after the fifth fiscal year are extrapolated at a constant growth rate of approximately 1% (Ray Sono AG: 2%). These growth rates do not exceed the average long-term growth rates of the business segment in which the corresponding cash-generating unit operates.

The discount rates are derived from a calculation of the weighted average cost of capital, which is itself based on the financing costs of comparable competitors for the respective cash-generating unit. The discount rates used reflect the specific equity risk associated with the respective cash-generating unit. The present values of future net cash inflows are determined using after-tax interest rates of 6.5% for Hydro (previous year: 7.5%), 7.7% for Paper (previous year: 9.3%), 7.0% for Turbo (previous year: 6.7%), 6.5% for Ray Sono AG (previous year: 6.5%) and 7.1% for FlowLink Systems Private Limited. Extrapolated from these amounts the pre-tax rates for which IAS 36 disclosures are required are 11.5% for Hydro (previous year: 12.5%), 10.6% for Paper (previous year: 13.0%), 9.9% for Turbo (previous year: 9.5%), 8.6% for Ray Sono AG (previous year: 8.4%) and 10.5% for FlowLink Systems Private Limited.

The potential change in the discount rate of +1 percentage point and in the anticipated future cash flow of -5% assumed by the management for the three segments and for FlowLink Systems Private Limited does not give rise to any impairment requirements. For Ray Sono AG an increase in the discount factor or a decrease in the anticipated cash flow would result in the recoverable amount being lower than the carrying amount.

### Property, plant and equipment

Property, plant and equipment are stated at cost less depreciation and after deduction of any impairment losses. The production cost of internally produced property, plant and equipment includes all directly attributable production costs and an appropriate share of production overheads. Depreciation is recognized on a straight-line basis over the following useful lives:

### Useful life

| | |
|---|---|
| Buildings | 40 to 50 years |
| Plant and machinery | 4 to 15 years |
| Other equipment, furniture and fixtures | 4 to 12 years |

The carrying amount of property, plant and equipment is tested for impairment if unusual events or market developments give rise to indications of impairment. To this end, the carrying amount of an asset or cash-generating unit is compared with its recoverable amount, which is defined as the higher of fair value less costs to sell and value in use. Impairment losses are reversed if the fair value of a previously impaired asset subsequently increases again.

The reversal posted through profit or loss is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in previous years.

Impairment losses are generally shown in the statement of income under depreciation and amortization. Reversals of impairment losses are reported under other operating income. However, significant impairment losses, particularly those associated with the discontinuation of operations, are presented under the non-recurring result.

Repair and maintenance costs are recognized as expenses at the time when they are incurred. Any major renewals or improvements are capitalized. Borrowing costs that are directly attributable to property, plant and equipment are capitalized as part of the cost of those assets.

## Leases

Whether an arrangement is or contains a lease depends on the substance of the arrangement and requires a decision to be made on whether fulfillment of the agreement depends on the use of a particular asset and whether the arrangement conveys the right to use the asset.

Leases that transfer substantially all risks and rewards incidental to the use of the leased asset to a Voith Group company (the lessee) are classified as financial leases. In such cases, the lessee recognizes the leased asset at the start of the lease period and writes it down over the asset's useful life. A corresponding liability is recognized and then settled by the lease payments. The interest component is recognized in interest income/expense. All other leases in which Voith Group companies act as the lessee are accounted for as operating leases. The lease payments for operating leases are recognized as expenses using the straight-line method over the term of the lease.

## Financial instruments

A financial instrument is any contract that simultaneously gives rise to a financial asset of one party to the contract and a financial liability or equity instrument of the other party to the contract. Financial assets and liabilities are only recognized in the consolidated balance sheet when Voith is a contract party to a financial instrument.

The Group classifies non-derivative financial assets into the following categories: "loans and receivables," "available-for-sale financial assets" and "financial assets at fair value through profit or loss".

The Group classifies non-derivative financial liabilities as other financial liabilities ("financial liabilities measured at amortized cost").

The derivative financial assets and liabilities are classified as "held for trading" unless they are designated as hedging instruments and are effective for that purpose.

### Loans and receivables

The Group recognizes loans and receivables at the date they are originated. Such assets are initially recognized at fair value plus directly attributable transaction costs. Subsequent to initial recognition they are measured at amortized cost using the effective interest rate method.

### Available-for-sale financial assets

Shareholdings in businesses accounted for as financial assets and reported within other investments are measured at fair value on initial recognition. Subsequent to initial recognition, such investments are stated at cost if no active market exists for individual companies and it is impracticable to determine their fair value at reasonable cost. In cases in which there is objective evidence of impairment, the carrying amount is reduced by the amount of any impairment.

In accordance with IAS 39, loans classified as non-current loans are recognized under other financial assets measured at amortized cost, adjusted (where necessary) for any impairment.

The securities held by the Voith Group are normally available for sale. In the case of customary purchases and sales these are accounted for on the trading date. Subsequent to initial recognition they are measured at fair value, whereby the change in fair value is not recognized in the statement of income.

Any gains or losses arising from changes in the fair value of available-for-sale financial assets are recognized in other comprehensive income until the asset is derecognized. The carrying amounts of non-current financial assets and available-for-sale securities are regularly tested for objective evidence that they may be impaired. Such evidence can take the form of significant financial difficulty of the debtor or changes in the technological, economic and legal environment. Objective evidence that equity instruments may be impaired exists if there is a sustained or significant decline in their fair value. The criterion of a prolonged decline is met if the decline lasts longer than 12 months. The decline is regarded as significant if the fair value of the investment falls more than 30% below its cost. If this happens, the amounts hitherto recognized under other comprehensive income are recognized in profit or loss.

**Financial assets at fair value through profit or loss**
A financial asset is measured at fair value through profit or loss if it is held for trading purposes or if it is designated to be measured at fair value through profit or loss on initial recognition. Attributable transaction costs are recognized as profit or loss at the date they are incurred.

**Financial liabilities measured at amortized cost**
Non-derivative financial liabilities are measured on initial recognition at fair value less attributable transaction costs. Subsequent to initial recognition these financial liabilities are measured at amortized cost using the effective interest rate method.

**Financial assets and liabilities held for trading**
All derivative financial instruments are recognized at fair value on the trading date. Gains and losses on financial assets and liabilities that are held for trading are recognized in the statement of income.

**Fair value**
The fair value of investments for which an organized market exists is determined by the quoted market price at the reporting date. Where no active market exists, valuation techniques are used to determine the fair value. The techniques used by Voith for this purpose aim to reflect objective criteria as accurately as possible and to simulate an active market. This is done, for example, by analyzing discounted cash

flows, referring to arm's length transactions between knowledgeable, willing and independent partners, and drawing on comparisons with the current fair value of other financial instruments which are identical in all significant aspects.

**Derivative financial instruments and hedging**

Voith uses a variety of financial derivatives – such as forward exchange contracts and interest rate swaps – to hedge underlying transactions. Essentially, the Group applies fair value hedge accounting of firm commitments to hedge operating business transactions.

At the inception of a hedge relationship, the Group formally designates and documents the hedge relationship and the risk management objective and strategy for entering into the hedge. This documentation includes identification of the hedging instrument, the hedged item or transaction, the nature of the risk being hedged, and how the Group will assess the hedging instrument's effectiveness in offsetting the exposure to changes in the hedged item's fair value that is attributable to the hedged risk. Such hedging relationships are considered to be highly effective in offsetting the risks of fair value changes. Their effectiveness is assessed on an ongoing basis to determine whether they have been highly effective throughout the financial reporting periods for which the hedge was designated.

Hedges that meet the strict criteria for hedge accounting are accounted for as described below:

**Fair value hedges**

Fair value hedges are hedges of the Group's exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment that is attributable to a particular risk and could affect profit or loss for the period. In the case of fair value hedges, the carrying amount of a hedged item is adjusted by the profit or loss that is attributable to the hedged exposure, and the difference is reported in profit or loss. The derivative financial instrument is remeasured at its fair value and any gains or losses arising as a result are recognized in profit or loss.

For fair value hedges relating to hedged items carried at amortized cost, the adjustment to the carrying amount is amortized through profit or loss over the remaining term to maturity.

When an unrecognized firm commitment is designated as a hedged item, the subsequent accumulated change in the fair value of the firm commitment that is attributable to the hedged risk is recognized as an asset or liability and the corresponding gain or loss is recognized in the profit or loss for the period. Changes in fair value of the hedging instrument are also recognized in the profit or loss for the period.

The Group discontinues fair value hedge accounting if the hedging instrument expires, is sold, terminated or exercised, or if the hedge no longer meets the criteria for hedge accounting. Every adjustment to the carrying amount of a hedged financial instrument is released to income using the effective interest method. The reversal may begin as soon as an adjustment exists and shall begin no later than when the hedged item ceases to be adjusted for hedging gains and losses.

**Cash flow hedges**

Hedging transactions are classified as cash flow hedges when the transactions hedge the risk of changes in cash flows which can be attributed to a risk affecting a recognized asset, a recognized liability or a planned transaction, and could affect profit or loss for the period. The effective portion of the gain or loss on a hedging instrument is recognized directly in equity, while the ineffective portion is recorded in the statement of income.

The amounts recorded in equity are reclassified to the statement of income in the period in which the hedged transaction affects the statement of income, e.g. in which the hedged financial income or expense is recorded or in which a planned sale or purchase is made. If the underlying hedged transaction is the acquisition of a non-financial asset or a non-financial liability, the amounts recorded in equity are included in the initial carrying amount of the non-financial asset or non-financial liability.

If the planned transaction is no longer expected to occur, the amounts recorded previously in equity are transferred to the profit or loss for the period. When the hedging instrument expires, is sold, terminated, or is exercised without a hedging instrument being replaced or rolled over into another hedging instrument or when the Group ceases to designate a hedging instrument as such, the amounts previously recorded remain as a separate item in equity until the planned transaction occurs. If the planned transaction is no longer expected to occur, the amount is recognized in profit or loss.

**Embedded derivatives**

When the Group becomes party to a contract, it assesses whether any embedded derivatives should be separated from the host contract. Embedded derivatives can arise, for example, in cases where commercial agreements include requirements that payments are made in non-trading currencies. A reassessment is not made unless there is a substantial change in the terms of the contract that significantly modifies the cash flows that would otherwise have been generated from the contract.

Where there are embedded derivatives for which separate recognition is required, such derivatives are recognized at fair value as financial assets held for trading. Embedded financial derivatives with positive fair values are stated under other financial receivables; those with negative fair values are stated under bonds, bank loans and other interest-bearing liabilities or other financial liabilities.

### Inventories

Raw materials and supplies, merchandise, work in progress and finished goods are all stated under inventories at the lower of cost and net realizable value. In addition to direct costs, cost includes an appropriate portion of necessary materials and production overheads as well as production-related depreciation that can be directly allocated to the production process. The average cost, or cost based on the first-in, first-out (FIFO) method, is capitalized in the balance sheet. Appropriate allowance is made for inventory risks associated with slow-moving stocks, reduced salability, etc. When the circumstances that previously caused inventories to be written down below cost no longer exist, the write-down is reversed.

### Long-term construction contracts

Long-term construction contracts are recognized in accordance with the percentage-of-completion (PoC) method. The percentage of completion per contract to be recognized is calculated as the ratio of the actual costs incurred to the anticipated total costs of the project ("cost-to-cost method"). Revenue received is stated as sales and, after deducting customer advances and installments, as trade receivables. If the outcome of a construction contract cannot be estimated reliably, it is not possible to calculate contract revenue and costs based on the percentage of completion. In such cases, revenue is recognized at the amount of costs incurred for the construction contract to date, while the contract costs are immediately recognized in full in the period in which they are incurred. Expected losses on such contracts are based on recognizable risks.

### Receivables and other assets

Receivables and other assets (with the exception of derivatives) are assigned to the category "loans and receivables" and are measured at their nominal or acquisition cost. They are regularly tested for impairment on an individual basis. Where objective evidence of possible loss exists (for example, if the debtor is experiencing significant financial difficulty, if it is highly probable that insolvency proceedings will be opened against the debtor, if the debtor defaults on or is in arrears with interest or principal payments, if significant adverse changes in the technological, economic, or legal environment occur, if there is a significant or prolonged decline in the fair value of a financial instrument below its cost, or if legal proceedings are opened), individual allowances are recorded using an allowance account to reflect these factors. To the extent that impairment is derived from historical bad debt rates on a portfolio basis, a fall in the total volume of receivables reduces such allowances and vice versa. Impaired receivables are derecognized when they are assessed as uncollectible. Interest-free or low-interest receivables due in more than one year are discounted.

### Cash and cash equivalents

Cash and cash equivalents include cash in hand and checks, cash at banks and cash equivalents. Cash at banks includes both monies payable on demand and time deposits with fixed maturities of up to three months.

### Discontinued operations and non-current assets held for sale

Non-current assets and disposal groups held for sale are classified as non-current assets held for sale or as liabilities directly associated with assets classified as held for sale, respectively, if their carrying amount is to be recovered through sale rather than through continuing use. This condition is regarded as met when the sale is highly probable and the asset or disposal group is available for immediate sale in its present condition. In this case, management has decided to sell the asset and it is expected that the sale will take place within 12 months from the date of classification. Non-current assets held for sale are measured at the lower of their carrying amount and their fair value less costs to sell. Assets held for sale are not subject to depreciation and amortization.

Discontinued operations are recognized as soon as any component of an entity with business activities and cash inflows and outflows that can be clearly distinguished from the rest of the entity for operational and accounting purposes is classified as held for sale or has already been disposed of, and such Division either (1) represents a separate major line of business or a geographical area of operations, and (2) is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations, or (3) is a subsidiary exclusively acquired with a view to resale. The net result of discontinued operations is reported separately from income and expenses from continuing operations in the consolidated statement of income. Figures shown for previous years are presented on a comparable basis. Cash inflows and outflows from discontinued and continuing operations are not presented separately in the consolidated cash flow statement, and figures shown for previous years in the cash flow statement are not restated. Figures disclosed in the notes to the consolidated financial statements for items in the consolidated statement of income relate to continuing operations. Information on discontinued activities is provided in the section “Disposals and discontinued operations”. Sales and expenses generated within the Group have been eliminated in order to present the financial effect of the discontinued operations with the exception of sales and expenses which are expected to continue after the sale of the discontinued operations.

### Deferred and current taxes

Deferred tax assets and liabilities are recognized for temporary differences between the amounts carried in the tax accounts and the amounts reported for IFRS purposes (temporary concept) in accordance with IAS 12. Deferred tax assets are also recognized for unused tax losses insofar as it is reasonable to expect that they will be realized in the near future. Deferred taxes that relate to items recognized under other comprehensive income are also themselves recognized in equity. Deferred taxes are calculated based on the tax rates enacted or substantively enacted by the reporting date that apply or are expected to apply in the countries concerned at the time of realization. Deferred tax assets on unused tax losses that are not likely to be realized within a foreseeable period (normally two years) or that are not covered by deferred tax liabilities are either written down or not recognized at all. Deferred tax assets and deferred tax liabilities are presented on a net basis if the Group has a legal right to offset current tax assets against current tax liabilities and they relate to income taxes levied by the same taxation authority.

Current taxes are calculated and reported in accordance with the tax laws and regulations valid for each company.

### Profit participation rights

The profit participation rights amounting to €103,400 thousand are reported as a separate component of the Group's equity, based on their contractual terms and in accordance with IAS 32. Interest is not reported as interest expenses, but is treated in a similar manner to a dividend obligation.

### Provisions for pensions and similar obligations

Provisions for pension obligations are measured based on actuarial valuation methods using the prescribed projected unit credit method for defined benefit plans as required by IAS 19. This method considers not only the pensions and future claims known at the end of the year under review but also future anticipated increases in salaries and pensions. Defined benefit obligations are measured based on the proportion of future benefits accrued at the reporting date. Measurement includes assumptions about the future development of certain parameters that could affect the actual future benefit amount. The expenses for these benefit plans are divided into service cost and interest cost on the net debt from the obligations and plan assets. Both expense items are recognized in the statement of income. Revaluations of the net debt recognized are disclosed under other comprehensive income net of deferred taxes.

### Other provisions

Provisions are recognized for all discernible risks and uncertain obligations at the amount that is likely to be realized. These provisions are not netted against recourse claims. Provisions are recognized when the Group has a present obligation to a third party as a result of a past event and it is probable that an outflow of resources will be required whose amount can be estimated reliably. Provisions for warranty claims are based on historical claim trends and estimated future trends. Specific provisions are set up for known claims. Provisions for outstanding expenses, onerous contracts and other business-related obligations are measured based on services still to be rendered, usually at the amount of the costs to sell.

Provisions which do not lead to an outflow of resources in the following year are carried at the discounted settlement amount at the end of the year under review. The discount rate used is derived from market interest rates. The settlement amount also includes the estimated cost increases. If an amount set aside as a provision is expected to be refunded (through an insurance claim, for example), the refund amount is stated separately as an asset only if it is virtually certain. Income from refunds is not netted against expenses.

### Liabilities

Current liabilities are stated at the amount needed to settle the obligation. Financial liabilities are measured at their amortized cost. Amortized cost corresponds to the cost of the financial liabilities adjusted for repayments, issue costs and the amortization of any debt discounts or debt premiums.

Where liabilities are accounted for as hedged transactions, they are measured taking into account the market value of the hedged risk. Gains and losses are recognized in profit or loss.

Liabilities arising from leases that are classified as finance leases in accordance with the criteria laid out in IAS 17 are recognized at the present value of the minimum lease payments at the start of the lease and subsequently stated under financial liabilities at their amortized cost. Lease payments are split into an interest component and a principal component. The interest component of each payment is recognized as an expense in the statement of income.

### Classification of non-controlling interests in limited partnerships based on termination rights of non-controlling interests and put options

In accordance with IAS 32, financial instruments that entitle the holder to repayment of the capital made available to the partnership must be classified as liabilities. In companies that operate as limited partnerships, partners have the right under German law to demand repayment of the capital they have made available to the partnership. This right cannot be excluded by the partnership agreement. This provision also extends to other comparable repayment rights of holders of non-controlling interests with a settlement agreement. Put options create sale rights for the holder of the put pursuant to IAS 32.

a) Put options

Where the right to terminate on the part of non-controlling interests exists in the form of a put option, the corresponding non-controlling interests are not derecognized but are treated as a component of equity during the year under review. Based on this, a share of net income for the year is allocated to holders of non-controlling interests. At each reporting date, it is assumed that the put option will be exercised and the corresponding non-controlling interests are reclassified from equity to financial liabilities. This financial liability is recognized in the amount of the estimated compensation obligation and measured at fair value. The difference between this liability and the share of equity attributable to non-controlling interests is treated as a transaction between owners and has been recognized from the 2009/10 fiscal year onwards as a change in equity without any effect on the statement of income. Until and including the 2008/09 fiscal year such transactions were regarded as a business combination achieved in stages and the difference stated as goodwill. The Group elected to retain these amounts under the transitional arrangements provided for under IAS 27 (2008).

The amounts reclassified from equity to financial liabilities totaled €40,401 thousand in the 2017/18 fiscal year (previous year: €42,495 thousand).

b) Limited partnerships
Up to and including the 2014/15 fiscal year, the interests held in limited partnerships as well as non-controlling interests with comparable termination rights were treated in the same way as put options. The liability was measured at amortized cost taking account of the attributable share of total comprehensive income. The accounting treatment changed from the 2015/16 fiscal year onwards. The liability continues to be measured in a similar manner to amortized cost. It is no longer treated as a component of equity during the year under review. From now on, the measurement-related changes in the liability are recognized in interest income/expense in the consolidated statement of income.

If the non-controlling interests in limited partnerships are terminated or if the respective comparable termination rights or put options are exercised, the financial liabilities recognized prior to termination or exercise of the put options are reclassified as other financial liabilities.

### Financial guarantee contracts

Financial guarantee contracts issued by the Group are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. These financial guarantee contracts are treated as insurance contracts as defined by IFRS 4, i.e. the financial guarantee contracts are disclosed as contingent liabilities until utilization becomes probable. When this is the case, the corresponding obligation is recognized.

### Exercise of judgment and estimates by management

The presentation of net assets, financial position and earnings position in the consolidated financial statements requires the exercise of judgment by management. Management has exercised judgment in the following instances:

- Income taxes: management must exercise judgment in determining current and deferred taxes, as deferred taxes are recognized to the extent that their realization is probable
- Determining the requirement for, and measuring the amount of, impairment of intangible assets and property, plant and equipment
- Determining the requirement for allowances against doubtful receivables
- Sales revenues from construction contracts: determining the percentage of completion and estimation of whether a contract is associated with the inflow of future economic benefits
- Measurement of provisions and assessment of the likelihood of their utilization

Some accounting policies require critical estimates that involve complex and subjective assessments and the use of assumptions, some of which are inherently uncertain and subject to change. These critical accounting estimates can vary from period to period and significantly impact a company's financial position and/or earnings. The management explicitly points out that future events will often deviate from planning assumptions, and that it is normal for estimates to have to be adjusted.

Significant estimates and assumptions have to be made in the following areas of accounting:

**Revenue recognition from long-term construction contracts**
The Group generally accounts for construction contracts using the PoC method, according to which revenue is recognized based on the percentage of completion. Accurate estimates of the percentage of completion are of vital importance under this method. Depending on the method used to measure the percentage of completion, the most significant estimates concern the total contract cost, the remaining costs to complete the contract, the total contract revenue and contract risks.

The management of Voith's operating subsidiaries constantly reviews all estimates that are needed in the accounting for construction contracts and adjusts them as and when necessary.

Such examinations are part of management's normal accounting activities at operating level. We refer to note 14 for details of the carrying amounts.

**Trade and other receivables**
Determining allowances for doubtful receivables requires significant judgment on the part of management as well as an analysis of the individual debtors that covers their creditworthiness, current economic trends and an examination of historic default scenarios. We refer to note 14 for details of the carrying amounts.

**Impairment of goodwill**
Determining the recoverable amount of a Group Division to which goodwill was allocated involves estimates by management. The value in use is measured based on planning for the first five years, which is based on taking management's expectations and adjusting them for economic trends and historic developments. Estimates of growth, the weighted average cost of capital and tax rates are likewise based on reliable information that reflects the risks associated with operating business in each given industry or Division. We refer to note 10 and to the segment reporting for details of the carrying amounts.

**Development costs**
Development costs are capitalized if the recognition criteria described in IAS 38 are met. Initial capitalization is based on management's estimate that the technical and economic feasibility is demonstrated; the forecast of the expected future economic benefit to be gained from assets is essential to the decision whether or not costs are to be capitalized. We refer to note 10 for details of the carrying amounts.

**Pension obligations**
Estimates of pension obligations depend significantly on key assumptions including discount factors, expected salary increases, mortality rates and healthcare trends. The assumptions used to calculate the discount factor reflect the interest rates that can be realized on high-quality fixed-income instruments with appropriate maturities. We refer to note 20 for details of the carrying amounts.

**Other provisions**

Recognizing provisions for anticipated losses on contracts, warranty-related costs and litigation involves the use of significant estimates. Voith recognizes provisions for anticipated losses in all cases where current estimates of the total contract costs exceed expected contract revenues. Onerous contracts are identified by estimating the total costs of the contract, which requires significant judgment. Estimates are also necessary for assessing obligations from warranties and litigation. Provisions for restructuring are based on detailed plans for expected activities which are reviewed and approved by the Board of Management. We refer to note 21 for details of the carrying amounts.

**Taxes**

The Voith Group has business operations in many countries and is subject to many different tax laws. Both current and deferred taxes on income must be calculated for each individual taxable entity. To calculate deferred tax assets on unused tax losses and temporary differences, for example, assumptions must be made about the possibility of realizing sufficient taxable income in the future and the interpretation of complex tax laws and regulations. We refer to note 9 for details of the carrying amounts.

## Adoption of amended and new standards and interpretations

### Changes in accounting and measurement policies due to first-time adoption of revised and new IFRS and IFRICs

The following new and revised IAS and IFRS standards were applied for the first time in the 2017/18 fiscal year:

| Standard/interpretation | Amendment/new standard or interpretation |
|---|---|
| Amendments to IAS 7: Disclosure Initiative | Project as part of the disclosure initiative for IAS 7 Statement of Cash Flows to improve information provided to users of financial statements about an entity's financing activities and liquidity. |
| Amendments to IAS 12: Recognition of Deferred Tax Assets for Unrealized Losses | Clarification of the accounting for deferred tax assets for unrealized losses in the case of assets accounted for at fair value. |
| Improvements to IFRS (2014–2016) | Amendments to standard IFRS 12. |

None of the IAS and IFRS standards applied for the first time had a significant effect on the net assets, financial position and earnings position of the Group.

The adoption of the following revised and newly issued IFRS and IFRICs was not yet mandatory in the 2017/18 fiscal year, and/or they had not yet been endorsed by the European Commission for adoption in the European Union.

| Standard/interpretation | Amendment/new standard or interpretation | Mandatory effective date |
|---|---|---|
| Revised conceptual framework and amendments to the references to the conceptual framework in IFRS standards | This includes revised definitions of assets and liabilities and new guidelines on measurement and derecognition, disclosure and notes. | Periods beginning on or after January 1, 2020 |
| Amendments to IFRS 2: Classification and Measurement of Share-based Payment Transactions | Clarification of the classification and measurement of transactions involving share-based payments. | Periods beginning on or after January 1, 2018 |
| Amendments to IFRS 4: Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts | The objective of the amendment is to reduce the effects of the different effective dates of IFRS 9 Financial Instruments and the successor standard to IFRS 4. | Periods beginning on or after January 1, 2018 |
| IFRS 9 Financial Instruments | Regulations for the classification and the measurement, impairment and hedge accounting of financial instruments. | Periods beginning on or after January 1, 2018 |
| Amendments to IFRS 9: Financial Instruments | The amendments relate to premature repayment options with negative early repayment compensation. | Periods beginning on or after January 1, 2019 |
| IFRS 15 Revenue from Contracts with Customers incl. amendment of the effective date | Combination of revenue recognition rules previously contained in various standards and interpretations. | Periods beginning on or after January 1, 2018 |
| Clarifications to IFRS 15: Revenue from Contracts with Customers | The amendments are aimed at providing transition relief in the case of modified agreements and completed contracts. | Periods beginning on or after January 1, 2018 |
| IFRS 16 Leases | IFRS 16 governs the recognition, measurement, presentation and disclosure of leases in financial statements. | Periods beginning on or after January 1, 2019 |
| IFRS 17 Insurance Contracts | IFRS 17 establishes principles for the identification, recognition, measurement, presentation and disclosure in the notes of insurance contracts. | Periods beginning on or after January 1, 2021 |
| Amendments to IAS19: Plan Amendment, Curtailment or Settlement | According to this amendment, in the event of amendment, curtailment or settlement of a defined benefit plan, it is now mandatory to use updated actuarial assumptions to redetermine current service cost and the net interest for the remainder of the period used for the required remeasurement of the net liability. In addition, amendments were included to clarify the effect of a plan amendment, curtailment or settlement on the requirements regarding the asset ceiling. | Periods beginning on or after January 1, 2019 |
| Amendments to IAS 28: Investments in Associates and Joint Ventures | According to this amendment, long-term interests that in substance form part of the net investment in an entity accounted for using the equity method are to be accounted for and measured pursuant to IFRS 9. | Periods beginning on or after January 1, 2019 |
| Amendments to IAS 40: Transfers of Investment Property | Clarification relating to transfers to or from the portfolio of investment properties. | Periods beginning on or after January 1, 2018 |
| IFRIC 22 Foreign Currency Transactions and Advance Consideration | IFRIC 22 clarifies the accounting for transactions involving the receipt or payment of consideration in a foreign currency. | Periods beginning on or after January 1, 2018 |
| IFRIC 23 Uncertainty over Income Tax Treatments | IFRIC 23 supplements the provisions in IAS 12 regarding accounting treatment of uncertainties in connection with the income tax treatment of issues and transactions. | Periods beginning on or after January 1, 2019 |
| Improvements to IFRS (2014–2016) | Amendments to standards IFRS 1 and IAS 28. | Periods beginning on or after January 1, 2018 |
| Improvements to IFRS (2015–2017) | Amendments to standards IFRS 3, IFRS 11, IAS 12 and IAS 23. | Periods beginning on or after January 1, 2019 |

The significant effects of revised and newly issued IFRS and IFRICs subject to mandatory adoption from the 2018/19 fiscal year onwards are explained below. Furthermore, no significant impact on the net assets, financial position and earnings position of the Voith Group is anticipated. The impact of revised or newly issued standards and interpretations that will be subject to mandatory adoption by the Voith Group at a later date is currently being investigated.

IFRS 9 Financial Instruments replaces the existing requirements of IAS 39 Financial Instruments: Recognition and Measurement and restructures the classification and measurement, impairment and general hedge accounting for financial assets and liabilities. For mandatory first-time adoption, the amended accounting methods are generally to be applied retrospectively. With regard to the amendments to the classification and measurement (including impairment), Voith will make use of the exemption contained in IFRS 9 and not make any adjustments to comparative information for previous periods. Differences between the carrying amounts of the financial assets and financial liabilities arising from the first-time adoption of IFRS 9 are reported in the revenue reserves and the other reserves at the time of first-time adoption.

IFRS 9 introduces a new approach to the classification and measurement of financial assets. The criteria for classification consist of the cash flow characteristics and the business model according to which the assets are managed. Voith has examined the financial assets for compliance with the cash flow condition and assigned them to the corresponding business models. Trade receivables and other financial assets will in all probability continue to be measured at amortized cost. Exceptions to this consist of equity instruments that were measured at amortized cost pursuant to IAS 39 and are to be recognized at fair value pursuant to IFRS 9 in the future. In the case of equity instruments held as a strategic investment, Voith will exercise the OCI option and assign them to the category “FVTOCI” (“fair value through other comprehensive income”). Changes in the market value arising from first-time adoption, subsequent measurement and accumulated gains/losses in the event of derecognition at a later date are posted directly in equity and are never reclassified with an effect on profit or loss.

With regard to the equity instruments held for strategic purposes, Voith does not anticipate as at the effective date any material increase in the carrying amounts at September 30, 2018 to the fair values at October 1, 2018. Financial investments that are not held as strategic investments are assigned to the measurement category “FVTPL” (“fair value through profit or loss”). Upon first-time adoption, changes in value are reported in the revenue reserves but future changes in value are fully reflected through profit or loss in the statement of income. As at the date of first adoption, Voith does not expect there to be a material difference between the carrying amounts as at September 30, 2018 and the fair values as at October 1, 2018 with regard to investments assigned to the measurement category “FVTPL”.

IFRS 9 has to a great extent taken on the classification and measurement of financial liabilities used in IAS 39. Voith continues to measure financial liabilities at amortized cost; there are no financial liabilities that were modified in the past. In this respect, first-time adoption of IFRS 9 does not have any implications.

The requirements on reporting impairment losses that are now no longer exclusively based on losses that have already occurred but on a model of losses that can be expected are fundamentally new. For trade receivables and contract assets, Voith will use the simplified impairment model under which the credit losses anticipated over the entire term are recorded. The general impairment model is employed for other financial assets, particularly cash and cash equivalents, that are not classified at fair value through profit or loss. Allowances for the credit losses anticipated over the next 12 months are determined with this model unless the credit risk has significantly increased since initial recognition. In the event of a significant increase in the credit risk, allowances are to be determined in the amount of the credit defaults expected over the remaining term. The impairment models are based on specific probabilities of default taking account of forward-looking data. A model suitable for determining the anticipated credit losses is currently being implemented. First-time adoption of IFRS 9 is not expected to have any material impact on the Group's assets or equity with regard to the measurement of trade receivables, contract assets and other financial assets.

In its first-time adoption of IFRS 9, Voith is exercising the option not to apply the new requirements in its accounting treatment of hedges. Hedges continue to be accounted for according to the provisions of IAS 39. In addition, IFRS 9 introduces new, more extensive disclosure requirements in notes to financial statements, including, but not limited to, the accounting treatment of hedges, credit risk and expected credit losses.

IFRS 15 Revenue from Contracts with Customers: in May 2014, the IASB published this new standard on revenue recognition. The objective of the new standard is to bring the many different requirements on revenue recognition together in one standard. Consequently, IFRS 15 replaces the previous revenue recognition standards IAS 18: Revenue and IAS 11 Construction Contracts and the associated interpretations. The clarifications to IFRS 15 (Clarifications) published in April 2016 will likewise be taken into consideration at Voith. The new standard means that there are now consistent basic principles for all industries and all kinds of sales transactions. The central issue in this respect is that the sales are to be recorded following transfer of control. This replaces the principle of transfer of opportunities and risk previously applied. A five-step model is used to identify the amount of revenue and the date on which, or the period in which, the sales are recognized.

For first-time adoption, Voith has chosen the modified retrospective approach where the previous-year figures are not restated but the cumulative effects of first-time adoption of the standard as at October 1, 2018 is recorded in the revenue reserves. In addition, the option relating to simplified first-time adoption is exercised and IFRS 15 is only applied to those contracts that had not been fulfilled by October 1, 2018.

Within the scope of a group-wide implementation project, the business models of all Group Divisions at Voith were analyzed for potential changes arising from IFRS 15. All in all, we do not expect any material impact on the net assets, financial position and earnings position of Voith. As at October 1, 2018, it is assumed that the revenue reserves will rise by a very low single-digit percentage.

The changes will originate from the following issues, in particular:

The Group Division Turbo and some Paper business lines previously did not apply the percentage-of-completion method, i.e. revenue recognition was performed as soon as goods had been delivered or services rendered, i.e. when risk of ownership had been transferred to the customer. In the future, revenue will be recognized over time in some product lines, which will lead to earlier revenue recognition because the new IFRS 15 criteria for revenue recognition over time are met. The prerequisites for revenue recognition over time under IFRS 15 will generally continue to be met at Hydro and in a large part of the Group Division Paper that previously accounted for its construction contracts using the percentage-of-completion method. Only in some individual cases will revenue be recognized at a point in time (and consequently at a later date) in the future as Voith does not have an enforceable right to payment for performance completed to date as specified in IFRS 15.35c in the event of termination.

In addition, we expect the new concept relating to transfer of control to lead to earlier revenue recognition than before in the case of some consignment warehouses. In connection with the costs of contract initiation, commissions will not be included in the calculation of the percentage of completion in the future but will be capitalized upon conclusion of the contract and amortized over the term of the contract.

Furthermore, the separation or merging of obligations and special issues, such as variable compensation, may give rise to a different change in the accounting treatment unlikely to be material as things currently stand.

In addition, reclassifications within the balance sheet, new balance sheet items and expanded qualitative and quantitative disclosures in the notes are to be expected on account of the new standard.

IFRS 16 Leases replaces the previous requirements of IAS 17 Leases, and does away with the previous classification, on the part of the lessee, of leases into operating and financial leases. The lessee will report most leases and the associated rights to use and lease liabilities on the balance sheet in the future. There are exceptions for low-value leased assets and for short-term leases. The right of use is amortized over the term of the lease. In contrast, the lease liability is carried forward applying the effective interest method and taking account of the lease payments. The accounting treatment by lessors is not materially different from the provisions of IAS 17.

In the past, as a lessee Voith had only operating leases and immaterial financing leases. The first-time adoption of IFRS 16 is expected give rise to an increase in total assets of a low to mid-single-digit percentage. In addition, an immaterial increase in EBIT is anticipated. The effects on cash flow consist of an increase in cash flow from operating activities in the mid-double-digit millions (€) and a decrease in cash flow from financing activities of the same amount. For the transition, Voith has chosen the modified retrospective approach and will make use of the simplifications for short-term leases and low-value leased assets. With regard to existing leases, the assessment to date used to identify leases (grandfathering clause) will be carried forward. Intercompany leases are not likely to be presented in the internal reporting according to IFRS 16 and consequently will not give rise to any changes in the segment reporting pursuant to IFRS 8. Voith furthermore anticipates an increase in the qualitative and quantitative disclosures in the notes relating to leases.

At present, the Voith Group does not plan to adopt the new or amended standards and interpretations early.

# Notes to the consolidated statement of income

## 01. Sales

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Sale of goods | 2,864,851 | 2,941,309 |
| Rendering of services | 1,344,206 | 1,282,747 |
| | **4,209,057** | **4,224,056** |

## 02. Changes in inventories and other own work capitalized

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Changes in inventories of finished goods and work in progress | 37,555 | 7,311 |
| Other own work capitalized | 4,720 | 7,611 |
| | **42,275** | **14,922** |

## 03. Other operating income

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Income from the utilization of contract-specific provisions | 126,068 | 118,033 |
| Income from the reversal of provisions and accruals | 70,614 | 66,719 |
| Foreign exchange gains | 76,977 | 92,689 |
| Recovered bad debts | 13,607 | 12,005 |
| Gains on the disposal of intangible assets and property, plant and equipment | 1,555 | 7,647 |
| Rental and lease income | 2,180 | 1,856 |
| Income from insurance indemnification payments | 20,908 | 15,532 |
| Other income | 79,222 | 86,004 |
| | **391,131** | **400,485** |

# 04. Cost of materials

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Cost of raw materials and supplies and of purchased merchandise | 1,521,286 | 1,497,905 |
| Cost of purchased services | 366,348 | 342,478 |
| | **1,887,634** | **1,840,383** |

# 05. Personnel expenses

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Wages and salaries | 1,193,782 | 1,158,793 |
| Social security, pension and other benefit costs | 253,103 | 249,467 |
| | **1,446,885** | **1,408,260** |

## Number of employees

| | Annual average | | As at the reporting date | |
|---|---|---|---|---|
| | 2017/18 | 2016/17 | 2018-09-30 | 2017-09-30 |
| Direct production employees | 9,570 | 9,472 | 9,750 | 9,559 |
| Administration staff/indirect production | 9,652 | 9,479 | 9,877 | 9,486 |
| | **19,222** | **18,951** | **19,627** | **19,045** |
| Apprentices and interns | 818 | 953 | 818 | 953 |
| | **20,040** | **19,904** | **20,445** | **19,998** |

## Number of employees by region

| | Annual average | | As at the reporting date | |
|---|---|---|---|---|
| | 2017/18 | 2016/17 | 2018-09-30 | 2017-09-30 |
| Germany | 7,815 | 7,428 | 7,944 | 7,641 |
| Europe excluding Germany | 2,670 | 2,689 | 2,642 | 2,662 |
| Americas | 4,413 | 4,752 | 4,133 | 4,650 |
| Asia | 4,152 | 3,914 | 4,732 | 3,925 |
| Other | 172 | 168 | 176 | 167 |
| | **19,222** | **18,951** | **19,627** | **19,045** |

# 06.

## Other operating expenses

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Increase in provisions and accruals | 184,529 | 228,990 |
| Other selling expenses | 281,437 | 306,825 |
| Other administrative expenses | 241,820 | 239,680 |
| Foreign exchange losses | 88,824 | 90,945 |
| Rent for buildings and machinery | 49,417 | 51,029 |
| Bad debt allowances | 22,479 | 18,070 |
| Losses on the disposal of intangible assets and property, plant and equipment | 993 | 3,368 |
| Other expenses | 148,070 | 101,045 |
| | **1,017,569** | **1,039,952** |

# 07.

## Non-recurring result

Voith generally defines expenses and income arising from major restructuring activities, measures addressing personnel capacity and the discontinuation of operations as exceptional items and presents them under the non-recurring result.

The non-recurring result totaled €-22 million (previous year: €-32 million).

In the reporting period, the non-recurring result primarily comprises personnel-related expenses arising from measures to consolidate production capacities and improve competitiveness at Hydro in Brazil and Europe as well as at Paper in the UK and in the USA.

The non-recurring result for the previous-year period essentially comprised personnel-related and other expenses arising from measures designed to consolidate production capacities and improve competitiveness at Hydro in Brazil, at Paper in the USA and Turbo in Germany. Besides this, expenses arising from donor pledges amounting to €13 million were included here in the previous year.

Specifically, Hydro contributed €-12 million to the non-recurring result (previous year: €-7 million), Paper €-7 million (previous year: €-5 million, Turbo €0 (previous year: €-6 million) and the Corporate Functions & Services Division €-3 million (previous year: €-14 million).

In detail, the non-recurring result includes the following:

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Personnel expenses | -16,393 | -15,734 |
| Depreciation and amortization of non-current assets | -41 | 0 |
| Gain on the disposal of property, plant and equipment | -803 | -873 |
| Sundry other expenses | -7,218 | -20,169 |
| Gain on the disposal of property, plant and equipment | 19 | 389 |
| Income from the reversal of provisions | 1,983 | 2,728 |
| Sundry other income | 554 | 1,480 |
| | **-21,899** | **-32,179** |

The personnel expenses presented mostly comprise payments in connection with termination of employment relationships relating to measures to adjust personnel capacity.

## 08. Other financial result

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Gains/losses from investments | 24,438 | 20,369 |
| Impairment of other investments and loans | -1,590 | -408 |
| Income from securities and loans | 441 | 453 |
| Expenses from securities and loans | 0 | -2,097 |
| Currency gains on long-term financing positions | 23,880 | 6,519 |
| Currency losses on long-term financing positions | -36,692 | -36,557 |
| Valuation of derivatives used to hedge financial transactions | 8,542 | 1,891 |
| | **19,019** | **-9,830** |

The impairment losses recognized on other investments and loans mainly concern available-for-sale financial instruments.

The currency gains and losses on long-term financing positions result from currency gains and losses on long-term intragroup and external loans and liability balances. The valuation effects of derivatives used to hedge financial transactions relate to the hedging instruments associated with these long-term financing positions.

# 09. Income taxes

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Current taxes | -56,627 | -67,164 |
| Deferred taxes | -10,063 | -15,142 |
| | **-66,690** | **-82,306** |

Current taxes include domestic income taxes and comparable foreign income taxes that are calculated in accordance with the local tax laws valid for each subsidiary.

Deferred taxes are recognized for temporary differences between carrying amounts for tax reporting and carrying amounts recognized under IFRS at the individual Group companies as well as for consolidation measures recognized in profit or loss. Deferred tax assets are also recognized for unused tax losses that can be reasonably expected to be realized in the near future. The average income tax rate for German companies is 29.84% (previous year: 29.84%).

Deferred taxes are calculated at the tax rates valid in the respective countries. The deferred tax expense from temporary differences amounted to €16,194 thousand (previous year: tax expense of €3,934 thousand).

The deferred tax income from unused tax losses amounted to €6,131 thousand in the 2017/18 fiscal year. This primarily includes the impairment of deferred tax assets of €7,190 thousand which were recognized in the 2016/17 fiscal year, a reduction of deferred tax assets on tax losses carried forward of €86 thousand as a result of adjustments of tax losses carried forward from the previous year, income of €10,910 thousand from the initial recognition of deferred tax assets on tax losses, expenses of €4,416 thousand from the utilization of tax losses recognized in the previous year and income of €7,262 thousand from the initial recognition of previously unrecognized tax losses.

The deferred tax expense from unused tax losses amounted to €11,208 thousand in the 2016/17 fiscal year. This primarily includes the impairment of deferred tax assets of €6,882 thousand which were recognized in the 2015/16 fiscal year, a reduction of deferred tax assets on tax losses carried forward of €5,622 thousand as a result of adjustments of tax losses carried forward from the previous year, income of €7,153 thousand from the initial recognition of deferred tax assets on tax losses, expenses of €12,150 thousand from the utilization of tax losses recognized in the previous year and income of €7,541 thousand from the initial recognition of previously unrecognized tax losses.

In addition, the current income tax charge was reduced by the use of previously unrecognized deferred tax assets on unused tax losses of €337 thousand (previous year: €5,961 thousand).

As at September 30, 2018, no deferred tax assets were recognized on German trade tax losses of €687,011 thousand (previous year: €649,593 thousand), on German corporate income taxes of €406,418 thousand (previous year: €158,702 thousand) or on interest expenses currently not deductible under German tax law of €112,752 thousand (previous year: €178,459 thousand) as it is not likely that the tax losses carried forward can be utilized in the near future.

In addition, no deferred tax assets were recorded on foreign federal tax losses carried forward of €107,149 thousand (previous year: €65,836 thousand) or foreign state taxes of €99,579 thousand (previous year: €104,704 thousand), also due to the fact that the utilization of the losses is not probable in the near future.

Further changes in unused tax losses may arise as a result of the current external tax audit of the companies in Germany and abroad.

In Germany, unused tax losses can be carried forward indefinitely. Outside Germany, tax losses can usually be carried forward for a limited period of no more than five to ten years.

| | 2018-09-30 | | 2017-09-30 | |
|---|---|---|---|---|
| in € thousands | Deferred tax assets | Deferred tax liabilities | Deferred tax assets | Deferred tax liabilities |
| Intangible assets | 11,950 | 49,748 | 12,635 | 46,680 |
| Property, plant and equipment | 1,908 | 33,616 | 1,918 | 34,131 |
| Financial assets and securities | 706 | 6,101 | 900 | 12,825 |
| Inventories and receivables | 40,059 | 19,089 | 29,768 | 41,853 |
| Other assets | 9,313 | 26,240 | 6,518 | 11,978 |
| Pension provisions | 111,068 | 1,119 | 124,661 | 10,960 |
| Financial liabilities | 2,883 | 2,991 | 9,486 | 2,207 |
| Other provisions and liabilities | 71,406 | 2,792 | 119,788 | 10,042 |
| Tax effect on distributable earnings of Group companies | | 4,837 | | 3,851 |
| Impairment of deferred tax assets on temporary differences | -6,928 | | -12,688 | |
| Unused tax losses | 36,812 | | 32,335 | |
| Netting | -106,394 | -106,394 | -120,783 | -120,783 |
| | **172,783** | **40,139** | **204,538** | **53,744** |

For details of the origin of deferred taxes on items recorded directly in equity, please refer to note 19.

Reconciliation of deferred tax assets and liabilities:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| **Balance, October 1** | **150,794** | **197,494** |
| thereof: deferred tax assets | 204,538 | 248,693 |
| thereof: deferred tax liabilities | -53,744 | -51,199 |
| Deferred tax income/(expense) reported in the statement of income in the reporting period | -10,063 | -15,142 |
| Deferred tax income/(expense) reported in other comprehensive income in the reporting period | 256 | -21,725 |
| Business acquisitions and disposals | -2,927 | -4,410 |
| Currency | -5,416 | -5,423 |
| **Balance, September 30** | **132,644** | **150,794** |
| thereof: deferred tax assets | 172,783 | 204,538 |
| thereof: deferred tax liabilities | -40,139 | -53,744 |

Reconciliation of expected and effective tax expense:

The income of Voith GmbH & Co. KGaA and its subsidiaries in Germany is subject to corporate income tax and trade tax. Profits earned outside Germany are taxed at the current rates valid in the countries concerned. The expected tax expense was calculated based on a tax rate of 29.84% (previous year: 29.84%) that takes into account the legal structure of the Voith Group relevant for tax purposes.

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Result before income taxes | 151,836 | 694,343 |
| Expected tax expense (+)/tax income (-) | 45,308 | 207,192 |
| Deviations from expected tax rates | 2,957 | -7,556 |
| Effect of changes in tax rates | -3,084 | 625 |
| Tax-free income | -18,581 | -173,132 |
| Non-deductible expenses | 28,322 | 34,146 |
| Taxes relating to other periods | -11,139 | -4,192 |
| Change in impairments of deferred tax assets | 23,210 | 26,546 |
| Other tax effects | -303 | -1,323 |
| **Income taxes** | **66,690** | **82,306** |
| **Effective tax rate (in %)** | **43.9** | **11.9** |

No deferred tax was recorded on temporary differences on investments in subsidiaries of €1,105,912 thousand (previous year: €1,025,322 thousand because the criteria specified in IAS 12.39 were met.

When distributions by foreign subsidiaries to Germany are made, 5% of the distribution is subject to German taxation. In addition, withholding taxes and dividend-related taxes abroad may also be incurred. Further income tax implications must also be observed in the case of distributions from subsidiaries abroad to another foreign company.

# Notes to the consolidated balance sheet

## 10. Intangible assets

### Development of intangible assets from 2016-10-01 to 2017-09-30

| in € thousands | Franchises, industrial rights and similar rights and assets as well as licenses in such rights and assets | Goodwill | Development costs | Prepayments | Total |
|---|---|---|---|---|---|
| **Cost 2016-10-01** | **195,698** | **440,177** | **124,505** | **189** | **760,569** |
| Business combinations | 13,492 | 54,741 | 0 | 0 | 68,233 |
| Currency translation differences | -2,679 | -251 | -2 | -9 | -2,941 |
| Additions | 2,550 | 0 | 13,493 | 89 | 16,132 |
| Disposals | -4,516 | 0 | -2,088 | 0 | -6,604 |
| Other adjustments | 9 | 0 | 0 | 0 | 9 |
| Transfers | 3,055 | 0 | 0 | -175 | 2,880 |
| Reclassification to assets held for sale | 0 | 0 | 0 | 0 | 0 |
| **Cost 2017-09-30** | **207,609** | **494,667** | **135,908** | **94** | **838,278** |
| **Accumulated amortization and impairments 2016-10-01** | **-150,507** | **-54,179** | **-105,133** | **0** | **-309,819** |
| Business combinations | -215 | 0 | 0 | 0 | -215 |
| Currency translation differences | 1,743 | 0 | 23 | 0 | 1,766 |
| Amortization | -10,053 | 0 | -6,440 | 0 | -16,493 |
| Impairment losses | 0 | 0 | -970 | 0 | -970 |
| Disposals | 4,073 | 0 | 1,666 | 0 | 5,739 |
| Transfers | -2,601 | 0 | 0 | 0 | -2,601 |
| Reclassification to assets held for sale | 0 | 0 | 0 | 0 | 0 |
| Other adjustments | -9 | 0 | 0 | 0 | -9 |
| **Accumulated amortization and impairments 2017-09-30** | **-157,569** | **-54,179** | **-110,854** | **0** | **-322,602** |
| **Carrying amount 2017-09-30** | **50,040** | **440,488** | **25,054** | **94** | **515,676** |

## Development of intangible assets from 2017-10-01 to 2018-09-30

| in € thousands | Franchises, industrial rights and similar rights and assets as well as licenses in such rights and assets | Goodwill | Development costs | Prepayments | Total |
|---|---|---|---|---|---|
| **Cost 2017-10-01** | **207,609** | **494,667** | **135,908** | **94** | **838,278** |
| Business combinations | 2,118 | 2,383 | 0 | 0 | 4,501 |
| Currency translation differences | -1,529 | -19 | 37 | 0 | -1,511 |
| Additions | 7,038 | 0 | 12,862 | 105 | 20,005 |
| Disposals | -1,578 | 0 | -1,021 | 0 | -2,599 |
| Other adjustments | 0 | -35 | 0 | 0 | -35 |
| Transfers | 84 | 0 | 0 | 0 | 84 |
| Reclassification to assets held for sale | -598 | 0 | -3,746 | 0 | -4,344 |
| **Cost 2018-09-30** | **213,144** | **496,996** | **144,040** | **199** | **854,379** |
| **Accumulated amortization and impairments 2017-10-01** | **-157,569** | **-54,179** | **-110,854** | **0** | **-322,602** |
| Business combinations | 0 | 0 | 0 | 0 | 0 |
| Currency translation differences | 1,209 | 0 | 26 | 0 | 1,235 |
| Amortization | -10,881 | 0 | -4,413 | 0 | -15,294 |
| Impairment losses | 0 | 0 | -247 | 0 | -247 |
| Disposals | 1,253 | 0 | 1,020 | 0 | 2,273 |
| Transfers | 0 | 0 | 0 | 0 | 0 |
| Reclassification to assets held for sale | 336 | 0 | 520 | 0 | 856 |
| Other adjustments | 0 | 0 | 0 | 0 | 0 |
| **Accumulated amortization and impairments 2018-09-30** | **-165,652** | **-54,179** | **-113,948** | **0** | **-333,779** |
| **Carrying amount 2018-09-30** | **47,492** | **442,817** | **30,092** | **199** | **520,600** |

The impairment losses for the 2017/18 fiscal year (€247 thousand) and for the previous year (€970 thousand) on capitalized development costs are based on updated commercial profitability assessments and relate to the Paper segment.

# 11. Property, plant and equipment

## Development of property, plant and equipment from 2016-10-01 to 2017-09-30

| in € thousands | Land and buildings, including buildings on third-party land | Plant and machinery | Other equipment, furniture and fixtures | Prepayments and assets under construction | Total |
|---|---|---|---|---|---|
| **Cost 2016-10-01** | **813,921** | **1,432,854** | **506,024** | **68,054** | **2,820,853** |
| Business combinations | 497 | 26 | 1,166 | 0 | 1,689 |
| Currency translation differences | -15,694 | -37,004 | -4,811 | -1,927 | -59,436 |
| Additions | 5,834 | 23,473 | 28,371 | 22,080 | 79,758 |
| Capitalized interest | 1 | 0 | 0 | 220 | 221 |
| Disposals | -14,818 | -15,933 | -23,431 | -1,850 | -56,032 |
| Transfers | 24,281 | 27,076 | 2,025 | -56,262 | -2,880 |
| Reclassification to assets held for sale | 0 | 0 | 0 | 0 | 0 |
| Other adjustments | -40 | 1,569 | 1,918 | 1 | 3,448 |
| **Cost 2017-09-30** | **813,982** | **1,432,061** | **511,262** | **30,316** | **2,787,621** |
| **Accumulated depreciation and impairments 2016-10-01** | **-362,231** | **-1,025,341** | **-392,604** | **0** | **-1,780,176** |
| Business combinations | -229 | -10 | -666 | 0 | -905 |
| Currency translation differences | 5,887 | 25,723 | 3,932 | 0 | 35,542 |
| Depreciation | -18,054 | -61,453 | -32,400 | 0 | -111,907 |
| Impairment losses | 0 | -150 | -68 | 0 | -218 |
| Disposals | 9,879 | 14,875 | 22,503 | 0 | 47,257 |
| Transfers | -155 | -423 | 3,179 | 0 | 2,601 |
| Reclassification to assets held for sale | 0 | 0 | 0 | 0 | 0 |
| Reversal of impairment losses | 0 | 0 | 0 | 0 | 0 |
| Other adjustments | 0 | 267 | -1,623 | 0 | -1,356 |
| **Accumulated depreciation and impairments 2017-09-30** | **-364,903** | **-1,046,512** | **-397,747** | **0** | **-1,809,162** |
| **Carrying amount 2017-09-30** | **449,079** | **385,549** | **113,515** | **30,316** | **978,459** |

## Development of property, plant and equipment from 2017-10-01 to 2018-09-30

| in € thousands | Land and buildings, including buildings on third-party land | Plant and machinery | Other equipment, furniture and fixtures | Prepayments and assets under construction | Total |
|---|---|---|---|---|---|
| **Cost 2017-10-01** | **813,982** | **1,432,061** | **511,262** | **30,316** | **2,787,621** |
| Business combinations | 9,180 | 14,607 | 1,005 | 0 | 24,792 |
| Currency translation differences | -11,319 | -22,793 | -3,834 | -437 | -38,383 |
| Additions | 3,998 | 19,139 | 26,821 | 23,670 | 73,628 |
| Capitalized interest | 5 | 0 | 0 | 21 | 26 |
| Disposals | -1,306 | -30,355 | -23,919 | -768 | -56,348 |
| Transfers | 2,153 | 10,627 | 1,380 | -14,245 | -85 |
| Reclassification to assets held for sale | -17,639 | -35,476 | -8,584 | -96 | -61,795 |
| Other adjustments | 338 | -17 | -888 | -156 | -723 |
| **Cost 2018-09-30** | **799,392** | **1,387,793** | **503,242** | **38,305** | **2,728,732** |
| **Accumulated depreciation and impairments 2017-10-01** | **-364,903** | **-1,046,512** | **-397,747** | **0** | **-1,809,162** |
| Business combinations | -1,305 | -7,932 | -768 | 0 | -10,005 |
| Currency translation differences | 3,356 | 14,473 | 3,148 | 0 | 20,977 |
| Depreciation | -17,899 | -56,283 | -30,830 | 0 | -105,012 |
| Impairment losses | -118 | -1,036 | -73 | 0 | -1,227 |
| Disposals | 904 | 27,031 | 23,194 | 0 | 51,129 |
| Transfers | 0 | -68 | 68 | 0 | 0 |
| Reclassification to assets held for sale | 7,312 | 10,475 | 4,551 | 0 | 22,338 |
| Reversal of impairment losses | 0 | 0 | 22 | 0 | 22 |
| Other adjustments | 98 | 32 | 841 | 0 | 971 |
| **Accumulated depreciation and impairments 2018-09-30** | **-372,555** | **-1,059,820** | **-397,593** | **0** | **-1,829,968** |
| **Carrying amount 2018-09-30** | **426,837** | **327,973** | **105,649** | **38,305** | **898,764** |

Of the total impairment losses of €1,227 thousand recognized on property, plant and equipment in the 2017/18 fiscal year, an amount of €1,136 thousand was attributable to the Paper segment. In the previous year, these figures were already included as an addition to provisions in the non-recurring result and ultimately do not have any effect on the profit or loss for the period in 2017/18.

An interest rate of 2.2% was used to calculate capitalized interest (previous year: 6.0%).

The prepayments and assets under construction include buildings of €6,250 thousand (previous year: €1,041 thousand), plant and machinery of €29,219 thousand (previous year: €27,217 thousand) and non-production-related equipment of €2,836 thousand (previous year: €2,058 thousand).

# 12. Investments accounted for using the equity method

## Associates

The following table summarizes the financial information for associates (all amounts relate to the Group's proportionate share of the respective associates):

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Carrying amount of the investments in associates | 1,457 | 1,495 |
| Share of: | | |
| Net result of continuing operations | 92 | 158 |
| **Total comprehensive income** | **92** | **158** |

## Joint ventures

The Group has interests in joint ventures which are not individually material. The following table summarizes the financial information for these joint ventures (all amounts relate to the Group's proportionate share of the respective joint ventures):

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Carrying amount of the investments in joint ventures | 20,463 | 30,511 |
| Share of: | | |
| Net result of continuing operations | 2,459 | 7,434 |
| Other comprehensive income | -2,014 | -386 |
| **Total comprehensive income** | **445** | **7,048** |

In some cases, the companies accounted for using the equity method have reporting periods which do not end on September 30. Accordingly, some companies prepare interim financial statements as at September 30. For other companies the effects of the different reporting periods are not significant for the Voith Group's earnings position and net assets.

# 13. Inventories

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Raw materials and supplies | 216,416 | 194,785 |
| Work in progress | 173,550 | 146,166 |
| Finished goods and merchandise | 133,484 | 131,483 |
| Prepayments | 80,066 | 75,391 |
| | **603,516** | **547,825** |

Write-downs of inventories recognized as expenses amounted to €7,038 thousand (previous year: €9,604 thousand). Obligatory reversals of write-downs totaling €6,739 thousand (previous year: €8,090 thousand) were made. These amounts are recognized in the cost of materials.

# 14. Trade receivables and receivables from customer-specific contracts

Trade receivables consist of the following items:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Trade receivables | 739,647 | 761,727 |
| Bad debt allowances | -51,663 | -47,828 |
| Receivables from customer-specific contracts | 346,729 | 323,929 |
| | **1,034,713** | **1,037,828** |

Trade receivables are classified as current assets. As at September 30, 2018, the volume of receivables that is not expected to be realized within one year is €13,212 thousand (previous year: €13,269 thousand).

Movements in the allowance account for the impairment of trade receivables were as follows:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| **Impairment at the beginning of the fiscal year** | **-47,828** | **-48,492** |
| Additions | -22,145 | -16,703 |
| Utilization | 7,078 | 4,579 |
| Reversal | 10,547 | 11,925 |
| Changes in consolidated group/exchange differences | 678 | 863 |
| Reclassification to assets held for sale | 7 | 0 |
| **Impairment at the end of the fiscal year** | **-51,663** | **-47,828** |

The total reversal of €10,547 thousand (previous year: €11,925 thousand) is comprised exclusively of specific bad debt allowances. Additions of €22,145 thousand (previous year: €16,703 thousand) consist of additions to specific bad debt allowances of €21,962 thousand (previous year: €16,318 thousand) and portfolio-based allowances of €183 thousand (previous year: €385 thousand).

Credit insurance is used to manage default risk in trade receivables. For this purpose, Hermes cover is used to secure receivables from foreign customers in particular.

Future receivables from customer-specific construction contracts recognized using the percentage-of-completion method are determined as follows:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Costs incurred and recognized profits less recognized losses to date on current customer-specific projects | 5,369,492 | 6,537,092 |
| Progress billings to date | -3,965,621 | -5,137,716 |
| **Future receivables from customer-specific construction contracts before advances received** | **1,403,871** | **1,399,376** |
| Advances received (progress billings) | -1,150,862 | -1,121,070 |
| | **253,009** | **278,306** |
| Thereof receivables from construction contracts | 346,729 | 323,929 |
| Thereof liabilities from construction contracts | -93,720 | -45,623 |

Other liabilities include further advances received on customer-specific contracts of €509,860 thousand (previous year: €477,734 thousand), for which no production costs have been incurred to date.

Sales from customer-specific contracts totaled €2,198,257 thousand (previous year: €2,226,098 thousand).

An amount of €21,816 thousand (previous year: €17,233 thousand) from progress billings has been retained by customers as the amounts are payable only on fulfillment of agreed contractual conditions.

# 15. Other financial receivables and other assets

## Other financial receivables

| in € thousands | Current | Non-current | 2018-09-30 | Current | Non-current | 2017-09-30 |
|---|---|---|---|---|---|---|
| Derivatives used to hedge operational transactions | 7,206 | 3,773 | 10,979 | 23,775 | 21,268 | 45,043 |
| Derivatives used to hedge financial transactions | 356 | 1,445 | 1,801 | 483 | 1,062 | 1,545 |
| Financial receivables | 8,019 | 158 | 8,177 | 24,695 | 1,280 | 25,975 |
| Sundry financial assets | 77,587 | 56,531 | 134,118 | 52,336 | 65,801 | 118,137[1)] |
| | **93,168** | **61,907** | **155,075** | **101,289** | **89,411** | **190,700** |

[1)] Includes assets of €29,657 thousand (previous year: €37,634 thousand) which are no financial instruments and which are accordingly excluded from the disclosures made in the section “Additional information on financial instruments”.

## Other assets

| in € thousands | Current | Non-current | 2018-09-30 | Current | Non-current | 2017-09-30 |
|---|---|---|---|---|---|---|
| Deferred income | 27,019 | 6,733 | 33,752 | 20,228 | 6,930 | 27,158 |
| Other taxes (without income tax) | 89,208 | 9,206 | 98,414 | 90,316 | 3,819 | 94,135 |
| | **116,227** | **15,939** | **132,166** | **110,544** | **10,749** | **121,293** |

# 16. Securities

Current securities of €617,974 thousand (previous year: €601,812 thousand) contain term deposits of Voith GmbH & Co. KGaA of €575 million (previous year: €560 million) at selected banking partners with original maturity dates of more than 90 days that had residual terms of 20–185 days as at the reporting date.

Further information on securities can be found in the section “Additional information on financial instruments”.

# 17. Cash and cash equivalents

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Checks | 229 | 0 |
| Cash on hand | 447 | 348 |
| Cash equivalents | 3,484 | 31,415 |
| Cash at bank | 337,531 | 550,184 |
| | **341,691** | **581,947** |

Cash at banks earns interest at floating rates based on daily bank deposit rates.

Short-term deposits are made for varying periods of between one day and three months, depending on the cash requirements of the Group. These deposits earn interest at the respective short-term deposit rates.

### Notes on net liquidity

Net debt as defined within the Company includes the following:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Cash and cash equivalents | 341,691 | 581,947 |
| Securities | 629,661 | 613,546 |
| Other realizable financial receivables and loans | 36,828 | 86,159 |
| Bank loans | -258,134 | -418,347 |
| Bonds | -17,574 | -17,935 |
| Other interest-bearing financial liabilities | -175,355 | -197,597 |
| | **557,117** | **647,773** |

Net liquidity as the difference between realizable financial assets and interest-bearing financial liabilities is an important indicator for banks, analysts and rating agencies. This net liquidity indicator is not defined under International Financial Reporting Standards (IFRS) accounting policies, which means that its definition and calculation might diverge from practice at other companies.

## 18. Assets held for sale and liabilities directly associated with assets classified as held for sale

As at September 30, 2018, this item contains the assets and liabilities of Voith Composites SE & Co. KG, which is intended for sale as part of the planned disposal of the business operations. The item further includes property, plant and equipment of the Group Division Hydro in Brazil and the Group Division Paper in Austria. The disposal of these assets and liabilities is planned for the 2018/19 fiscal year. The assets held for sale of €23,411 thousand are other intangible assets and property, plant and equipment of €20,880 thousand, inventories of €1,382 thousand, trade receivables of €925 thousand and other assets of €224 thousand. The liabilities directly associated with assets classified as held for sale of €892 thousand consist of trade payables.

In the previous year, this item contained an investment classified as held for sale that was sold in the 2017/18 fiscal year.

## 19. Equity

### Issued capital

The share capital of Voith GmbH & Co. KGaA of €120,000 thousand comprises 108,000 thousand ordinary shares with an arithmetical share of €1.00 each and 12,000 thousand preference shares with an arithmetical share of €1.00 each.

### Revenue reserves and other reserves

The revenue reserves and other reserves consist of retained earnings generated by Voith GmbH & Co. KGaA and its consolidated subsidiaries as well as the effects of the remeasurement of defined benefit plans, the currency translation of foreign subsidiaries, the valuation of net investments in foreign operations, gains/losses from available-for-sale financial assets recognized directly in equity without effect on profit or loss and cash flow hedges pursuant to IAS 39.

The statement of comprehensive income shows the individual components of other comprehensive income. Other comprehensive income consists of:

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| **Remeasurement of defined benefit plans** | **12,804** | **67,780** |
| · Gains/losses in the current period | 12,804 | 67,780 |
| **Gains/losses on available-for-sale financial assets** | **2,596** | **-12,222** |
| · Gains/losses in the current period | 2,796 | -2,392 |
| · Transfers to profit and loss | -200 | -9,830 |
| **Gains/losses on cash flow hedges** | **1,873** | **2,375** |
| · Gains/losses in the current period | 0 | 2,375 |
| · Transfers to profit and loss | 1,873 | 0 |
| **Gains/losses on currency translation** | **-61,781** | **-32,619** |
| · Gains/losses in the current period | -61,781 | -24,386 |
| · Transfers to profit and loss | 0 | -8,233 |
| **Gains/losses from the currency translation of net investments in foreign operations** | **-423** | **3** |
| · Gains/losses in the current period | -423 | 3 |
| · Transfers to profit and loss | 0 | 0 |
| **Tax on components of other comprehensive income** | **256** | **-21,724** |
| **Other comprehensive income** | **-44,675** | **3,593** |

Deferred taxes on the components of other comprehensive income are as follows:

| in € thousands | 2017/18 Before taxes | 2017/18 Deferred taxes | 2017/18 After taxes | 2016/17 Before taxes | 2016/17 Deferred taxes | 2016/17 After taxes |
|---|---|---|---|---|---|---|
| Remeasurement of defined benefit plans | 12,804 | 1,526 | 14,330 | 67,780 | -21,043 | 46,737 |
| Gains/losses on available-for-sale financial assets | 2,596 | -836 | 1,760 | -12,222 | 10 | -12,212 |
| Gains/losses on cash flow hedges | 1,873 | -560 | 1,313 | 2,375 | -691 | 1,684 |
| Gains/losses on currency translation | -61,781 | 0 | -61,781 | -32,619 | 0 | -32,619 |
| Gains/losses from the currency translation of net investments in foreign operations | -423 | 126 | -297 | 3 | 0 | 3 |
| **Other comprehensive income** | **-44,931** | **256** | **-44,675** | **25,317** | **-21,724** | **3,593** |

## Profit participation rights

Profit participation rights with a nominal volume of €103,400 thousand (previous year: €103,400 thousand) qualify as equity under the IAS 32 criteria. The rights are lower-ranking bearer profit participation rights with variable compensation, no fixed maturity date and no right of termination on the part of the creditors. Profit participation rights of €96,800 thousand were issued by a subsidiary of Voith GmbH & Co. KGaA. Profit participation rights of €6,600 thousand were issued by Voith GmbH & Co. KGaA. Subject to the approval of the appropriate governing body, profits totaling €5,590 thousand (previous year: €5,590 thousand) are scheduled to be distributed on the sum total of these rights for the 2017/18 fiscal year.

## Non-controlling interests

The majority of non-controlling interests are held by the co-owners of the subsidiaries Rif Roll Cover Srl, Italy, Voith Fuji Hydro K.K., Japan, Voith IHI Paper Technology Co., Ltd., Japan, Voith Hydro Shanghai Ltd., China, Voith Paper Fabrics India Ltd., India, and PT. Voith Paper Rolls Indonesia, Indonesia. Of the profit participation rights totaling €103,400 thousand, €96,800 thousand is attributable to non-controlling interests.

## Appropriation of retained earnings at Voith GmbH & Co. KGaA

The Board of Management proposes to pay a dividend of €0.16 per share (€19,000 thousand in total) out of revenue reserves and to carry forward the remaining balance. Of the total dividends proposed, €1,920 thousand is attributable to preference shares. Dividend payments in the fiscal year amounted to €25,000 thousand (previous year: €18,000 thousand). The distribution per share in the fiscal year amounted to €0.21 per share (previous year: €0.15 per share).

### Additional disclosures on capital management

Voith is a family-owned company. As such, it is obliged to maintain a robust and sustainable financial profile that enables the Group to meet its earnings and growth targets.

Voith manages its capital with the aim of maximizing the return on capital. The Group's managed capital consists of equity and interest-bearing financial liabilities.

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Equity | 1,340,319 | 1,365,924 |
| Interest-bearing financial liabilities | 451,063 | 633,879 |
| | **1,791,382** | **1,999,803** |

Equity fell by 1.9% compared to the previous year. This effect was primarily due to the negative currency developments in Brazil. Interest-bearing financial liabilities decreased by 28.9%. The composition of interest-bearing financial liabilities is described in note 22.

The articles of incorporation and bylaws of Voith GmbH & Co. KGaA do not prescribe any specific capital requirements.

## 20. Provisions for pensions and similar obligations

Provisions for pensions are recognized for benefit obligations in the form of retirement, invalidity and surviving dependents benefits payable under pension plans. The benefits provided by the Group vary according to local legal, tax and economic conditions in the respective countries and are usually based on the length of employee service and the level of remuneration.

The Group's post-employment benefits include both defined benefit plans and defined contribution plans. In the case of defined contribution plans, the Company pays contributions to state or private pension schemes based on either legal or contractual requirements or on a voluntary basis. Once the contributions have been paid, there are no further obligations for the Company. Current contributions are recognized as pension expenses in the period concerned and total €92,829 thousand for the Voith Group as a whole (previous year: €87,536 thousand).

The majority of the pension plans are defined benefit plans that take the form of provisions-based or externally funded schemes.

The pension provisions for defined benefit plans are determined in accordance with IAS 19 using the internationally recognized projected unit credit method. For this purpose, the future obligations are measured on the basis of the pro rata employee benefit obligations earned at the end of the fiscal year. Pension provisions are measured taking into account development assumptions for those factors which affect the benefit amount. All defined benefit plans require actuarial valuations. These are prepared annually by qualified actuaries.

The amount of the individual benefit payments is generally measured based on the wage or salary level and/or position in the corporate hierarchy, as well as the length of service. The features and related risks of the defined benefit plans available to employees vary according to local legal, tax and economic conditions in the respective countries. The features of the material defined benefit plans at Voith are described below.

a) Pension plans in Germany and Austria

The pension plans in Germany generally include retirement, invalidity and surviving dependents' benefits. Traditionally, the pension commitments are measured on the beneficiary's final salary. In recent years, these benefits have been increasingly replaced by capital savings models. Under capital savings models, the amount of the benefit is measured as the sum of the (annual) savings modules. The individual modules are measured from the defined salary-based contribution using a variable conversion factor for age and interest rates for a defined retirement age.

Numerous Group companies have introduced capital savings models to satisfy their obligation to pay an employer contribution.

In accordance with the German Company Pensions Act, current benefit payments are regularly reviewed with regard to the increase in the consumer price index.

In comparison to the older final-salary-based pension commitments, which involve a relatively high risk of extra funding requirements arising from salary trends, from external input parameters (e.g. the income threshold for the statutory pension insurance scheme) and from the adjustment of current pensions, the current capital savings models ultimately only involve the risk of a change in the interest rates used in the calculation.

Pension provisions are recognized for all pension commitments. Funding is therefore only obtained in exceptional cases. The plan assets of German companies take the form of insurance policies. They do not include any financial instruments issued by companies of the Voith Group.

For mortality and invalidity, the RT 2018G (as of July 2018) mortality tables by Heubeck are used. Employee turnover probabilities were calculated specifically for the Group.

In Austria, the obligations result primarily from a severance benefit scheme ("Abfertigungen"). Benefits become due upon termination of the employment relationship (provided the employee is not culpable for the termination), i.e. also upon retirement. Austrian severance benefits all qualify as capital savings. A few years ago, the nature of these benefits changed for new hires to post-employment benefits on account of new statutory requirements. These qualify as defined contribution plans and are organized via legally independent employee welfare funds. The employer's obligation is limited to payment of the contribution. In addition, obligations exist for retirement, invalidity and surviving dependents' benefits on the basis of individual commitments and a pension plan closed to new hires a long time ago at the St. Pölten location.

b) Pension plans in the United States and Canada

The companies of the Voith Holding Inc. Group in the United States have a number of defined benefit plans. The plans are closed to new entrants, who are offered defined contribution plans instead. All of the defined benefit pension plans are frozen. No new participants are accepted and no further provisions will be recognized for future benefit payments or future service cost (apart from a small group of participants in a plan for whom only salary rises are still considered in the calculation of the final average benefit payment). The pensions are primarily based on the final average salary or the length of service (i.e. the product of a fixed dollar amount and the number of years of service) and are paid monthly for life. Moreover, there are two unfunded supplementary plans for benefits paid to a small group of former employees beyond the normal upper limit for pension plans required by law. These plans have also been frozen and no active employees currently participate in these plans. Finally, there is a plan for post-employment medical benefits for a group of plan participants who met the age and length of service criteria when the plan was closed to new participants. This plan is unfunded. These defined benefit plans give rise to actuarial risks for the Voith Holding Inc. Group, arising from such factors as the investment risk, interest rate risk, longevity risk and the risk of a rise in the costs of medical care.

The plan assets for defined benefit plans are invested in a master trust. The companies in the Voith Holding Inc. Group paying the contributions have assigned the responsibility for overseeing the investment of plan assets to an investment committee. According to a trust agreement and US law, the members of the investment committee have a fiduciary duty to act solely in the best interests of the beneficiaries. The committee has drawn up an investment guideline that lays down the investment goals and procedures that must be followed. The trustee of the master trust only acts on the express instructions of the investment committee or an authorized representative of the investment committee. The trustee is responsible for the safe custody of the plan assets, but is not generally empowered with decision-making authority.

The legal and regulatory framework for calculating the minimum funding requirement for the pension plans is based on the relevant US laws, including the Employee Retirement Income Security Act (ERISA) as amended. An annual assessment of the minimum funding requirement is made by the plan's actuary on the basis of these laws. In the past, Voith paid into the plans to maintain a funded status of at least

80%, as required by local law. The annual employer's contributions correspond to the net present value of the benefit obligation accumulated in the year, plus the amortization of any plan deficit from the previous year.

If the employer's contribution exceeds the minimum funding requirement or if the plan assets exceed the liabilities, the surplus may be offset against future minimum funding requirements.

The Voith Group maintains two active defined benefit plans in Canada. Both plans are closed to new entrants, who participate in various defined contribution plans instead. The benefits paid under both of these plans take the form of lifelong monthly pensions.

The plan assets of the defined benefit plans are invested in insurance policies with an insurer who manages the plan assets as trustee. The companies in the Group paying the contributions have assigned the responsibility for overseeing the investment of plan assets to the managers and directors of various companies acting as representatives of the Company. According to Canadian law at both federal and provincial level, the Company and its representatives have a fiduciary duty as the managers of the plan assets to act solely in the best interests of the beneficiaries.

The legal and regulatory framework used to calculate the minimum funding requirement for pension plans is based on the relevant laws applying in the Province of Ontario and at federal level in Canada, including the Ontario Pension Benefits Act and the Ontario Income Tax Act as well as the associated laws and regulations as amended. Based on these laws, either an annual or a three-yearly assessment of the minimum funding requirement is made by the plan's actuary.

The following amounts were recorded in the consolidated financial statements for post-employment defined benefit pension plans:

| | Defined benefit obligation | | Fair value of plan assets | | Net carrying amount from defined benefit plans | |
|---|---|---|---|---|---|---|
| in € thousands | 2018-09-30 | 2017-09-30 | 2018-09-30 | 2017-09-30 | 2018-09-30 | 2017-09-30 |
| Germany and Austria | 744,464 | 748,167 | -24,135 | -23,340 | 720,329 | 724,827 |
| USA and Canada | 169,413 | 181,245 | -155,258 | -139,729 | 14,155 | 41,516 |
| Other | 30,849 | 31,656 | -21,044 | -21,398 | 9,805 | 10,258 |
| | **944,726** | **961,068** | **-200,437** | **-184,467** | **744,289** | **776,601** |

Movements in the net liability from defined benefit plans:

| in € thousands | 2018-09-30 Present value of defined benefit obligations | 2018-09-30 Fair value of plan assets | 2018-09-30 Total | 2017-09-30 Present value of defined benefit obligations | 2017-09-30 Fair value of plan assets | 2017-09-30 Total |
|---|---|---|---|---|---|---|
| **Balance, October 1** | **961,068** | **-184,467** | **776,601** | **1,094,223** | **-211,451** | **882,772** |
| Current service cost | 15,866 | - | **15,866** | 21,303 | - | **21,303** |
| Past service cost from plan curtailments | -206 | 0 | **-206** | -6,546 | 0 | **-6,546** |
| Interest expenses (+)/interest income (-) | 21,253 | -5,468 | **15,785** | 17,689 | -5,012 | **12,677** |
| Remeasurements: | | | | | | |
| Losses (+)/gains (-) from changes in demographic assumptions | 8,550 | - | **8,550** | 1,715 | - | **1,715** |
| Losses (+)/gains (-) from changes in financial assumptions | -19,348 | - | **-19,348** | -63,321 | - | **-63,321** |
| Losses (+)/gains (-) from experience adjustments | -2,185 | - | **-2,185** | -1,894 | - | **-1,894** |
| Remeasurement of plan assets (without amounts included in interest result) | - | 1,282 | **1,282** | - | -4,280 | **-4,280** |
| Employer contributions to the fund | - | -25,191 | **-25,191** | - | -7,877 | **-7,877** |
| Employee contributions to the fund | - | 229 | **229** | - | 62 | **62** |
| Benefits paid | -41,788 | 14,374 | **-27,414** | -72,352 | 26,075 | **-46,277** |
| Change to the Group's structure[1] | -865 | -401 | **-1,266** | -19,864 | 9,821 | **-10,043** |
| Other | 154 | 591 | **745** | 328 | -6 | **322** |
| Currency translation differences on foreign plans | 1,309 | -1,386 | **-77** | -10,213 | 8,201 | **-2,012** |
| Addition to termination benefits in accordance with IAS 19.159 et seq. | 918 | - | **918** | - | - | **0** |
| **Balance, September 30** | **944,726** | **-200,437** | **744,289** | **961,068** | **-184,467** | **776,601** |

[1] In previous year transfer to Voith Management GmbH.

Movements in the net liability from defined benefit plans in Germany and Austria:

## Germany and Austria

| in € thousands | 2018-09-30 Present value of defined benefit obligations | 2018-09-30 Fair value of plan assets | 2018-09-30 Total | 2017-09-30 Present value of defined benefit obligations | 2017-09-30 Fair value of plan assets | 2017-09-30 Total |
|---|---|---|---|---|---|---|
| **Balance, October 1** | **748,167** | **-23,340** | **724,827** | **842,953** | **-31,106** | **811,847** |
| Current service cost | 14,203 | - | **14,203** | 19,398 | - | **19,398** |
| Past service cost from plan curtailments | -657 | 0 | **-657** | -4,786 | 0 | **-4,786** |
| Interest expenses (+)/interest income (-) | 14,549 | -459 | **14,090** | 11,038 | -427 | **10,611** |
| Remeasurements: | | | | | | |
| Losses (+)/gains (-) from changes in demographic assumptions | 9,123 | - | **9,123** | -259 | - | **-259** |
| Losses (+)/gains (-) from changes in financial assumptions | -12,316 | - | **-12,316** | -53,551 | - | **-53,551** |
| Losses (+)/gains (-) from experience adjustments | -448 | - | **-448** | -1,673 | - | **-1,673** |
| Remeasurement of plan assets (without amounts included in interest result) | - | -235 | **-235** | - | -675 | **-675** |
| Employer contributions to the fund | - | -1,289 | **-1,289** | - | -2,029 | **-2,029** |
| Employee contributions to the fund | - | 0 | **0** | - | 0 | **0** |
| Benefits paid | -28,034 | 1,188 | **-26,846** | -46,355 | 1,076 | **-45,279** |
| Change to the Group's structure[1] | -1,215 | 0 | **-1,215** | -19,864 | 9,821 | **-10,043** |
| Other | 174 | 0 | **174** | 1,266 | 0 | **1,266** |
| Currency translation differences on foreign plans | 0 | 0 | **0** | 0 | 0 | **0** |
| Addition to termination benefits in accordance. with IAS 19.159 et seq. | 918 | 0 | **918** | - | - | **0** |
| **Balance, September 30** | **744,464** | **-24,135** | **720,329** | **748,167** | **-23,340** | **724,827** |

[1] in previous year transfer to Voith Management GmbH.

Movements in the net liability from defined benefit plans in USA and Canada:

## USA and Canada

| in € thousands | 2018-09-30 Present value of defined benefit obligations | 2018-09-30 Fair value of plan assets | 2018-09-30 Total | 2017-09-30 Present value of defined benefit obligations | 2017-09-30 Fair value of plan assets | 2017-09-30 Total |
|---|---|---|---|---|---|---|
| **Balance, October 1** | **181,245** | **-139,729** | **41,516** | **218,695** | **-159,082** | **59,613** |
| Current service cost | 1,019 | - | **1,019** | 1,554 | - | **1,554** |
| Past service cost from plan curtailments | 0 | 0 | **0** | -1,840 | 0 | **-1,840** |
| Interest expenses (+)/interest income (-) | 5,844 | -4,453 | **1,391** | 5,994 | -4,138 | **1,856** |
| Remeasurements: | | | | | | |
| Losses (+)/gains (-) from changes in demographic assumptions | -1,211 | - | **-1,211** | 2,206 | - | **2,206** |
| Losses (+)/gains (-) from changes in financial assumptions | -6,612 | - | **-6,612** | -10,010 | - | **-10,010** |
| Losses (+)/gains (-) from experience adjustments | -1,185 | - | **-1,185** | -975 | - | **-975** |
| Remeasurement of plan assets (without amounts included in interest result) | - | 903 | **903** | - | -3,375 | **-3,375** |
| Employer contributions to the fund | - | -22,777 | **-22,777** | - | -5,434 | **-5,434** |
| Employee contributions to the fund | - | 229 | **229** | - | 62 | **62** |
| Benefits paid | -11,669 | 11,669 | **0** | -24,310 | 23,828 | **-482** |
| Other | -169 | 675 | **506** | -903 | 772 | **-131** |
| Currency translation differences on foreign plans | 2,151 | -1,775 | **376** | -9,166 | 7,638 | **-1,528** |
| **Balance, September 30** | **169,413** | **-155,258** | **14,155** | **181,245** | **-139,729** | **41,516** |

Costs for defined benefit plans break down as follows:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Current service cost | 15,866 | 21,115 |
| Past service cost | -206 | -6,546 |
| Interest expenses from pension obligations and plan assets | 15,785 | 12,665 |

Current service cost and past service cost are stated under personnel expenses. Interest expenses on the obligation and interest income on plan assets are stated in the interest result. Past service cost includes the effects of the increase in the actuarial interest rate for the capital savings plans.

The fund assets consist of the following components:

| | Quoted prices in an active market | | No quoted prices in an active market | | Total | |
|---|---|---|---|---|---|---|
| in € thousands | 2018-09-30 | 2017-09-30 | 2018-09-30 | 2017-09-30 | 2018-09-30 | 2017-09-30 |
| Equity instruments | 44,870 | 70,061 | 0 | 0 | 44,870 | 70,061 |
| Debt instruments | 103,172 | 75,817 | 525 | 0 | 103,697 | 75,817 |
| Real estate | 4,122 | 7,128 | 2,102 | 1,949 | 6,224 | 9,077 |
| Cash and cash equivalents | 1,793 | 2,886 | 449 | 103 | 2,242 | 2,989 |
| Other[1] | 5,324 | 1,878 | 38,080 | 24,645 | 43,404 | 26,523 |
| | **159,281** | **157,770** | **41,156** | **26,697** | **200,437** | **184,467** |

[1] Primarily employer's pension liability insurance.

The calculation of pension provisions was based on the following assumptions:

| | Germany and Austria | | USA | |
|---|---|---|---|---|
| in % | 2018-09-30 | 2017-09-30 | 2018-09-30 | 2017-09-30 |
| Discount rate | 2.08 | 2.00 | 3.97 | 3.46 |
| Pension increases | 1.70 | 1.70 | 0 | 0 |

The inputs used in the calculation of the defined benefit obligation (DBO) include assumed discount rates, wage and salary trends, as well as mortality rates. These vary depending on the state of the economy and other factors in the respective country.

Changes to the relevant actuarial assumptions would have had the following impact on the defined benefit obligation:

| | | 2018-09-30 | | 2017-09-30 | |
|---|---|---|---|---|---|
| | | in € thousands | in % | in € thousands | in % |
| Discount rate | up 0.50% points | -63,053 | -6.7 | -64,282 | -6.7 |
| | down 0.50% points | 70,958 | 7.5 | 72,125 | 7.5 |
| Pension increases | up 0.25% points | 16,279 | 1.7 | 16,174 | 1.7 |
| | down 0.25% points | -15,545 | -1.6 | -15,449 | -1.6 |
| Life expectancy | + 1 year | 28,808 | 3.0 | 28,801 | 3.0 |

The sensitivity analyses presented here show the effect of changes to one assumption with no change in the other assumptions, i.e. possible correlations between the individual assumptions are not considered.

Increases or decreases in the discount rate, the wage and salary trends and the mortality rates do not have the same impact in absolute terms on the defined benefit obligation (DBO), primarily on account of discounting the obligation to net present value. If a number of assumptions are changed simultaneously, the total impact does not necessarily equate to the sum of the effects attributable to the individual assumptions changed. In addition, the sensitivity of the DBO to a change in an assumption is only a reflection of the specific magnitude of the change. If an assumption changes by a different magnitude than that assumed here, the impact on the DBO will not necessarily be linear.

### Asset-liability matching strategies

Due to the treasury guidelines of the Voith Group, which rule out any speculative transactions, the funded pension plans in the United States pursue an investment strategy that is oriented towards the obligations from the pension plans and not primarily towards maximizing the value of the securities portfolios. The goal of the investment strategy is to close any gaps in funding between the defined benefit obligation and the plan assets. If this is achieved, the goal is to maintain this funded status.

The main factors influencing the funded status include the development of interest rates and pricing risks inherent in the plan assets. In 2011, Voith installed a dynamic pension management with the involvement of international asset management experts and insurers. A new standard asset allocation is ratified each year by the Voith pension committee along the latest efficiency curves between income and risk. This is based on an individual limited risk strategy. However, a fixed percentage of the funding gap is always set as an upper risk limit.

The pension committee ratified an investment guideline that allows the external asset manager to use all defined asset classes from 0–100% for tactical purposes. This allows the asset manager to react ad hoc to market turbulence. In the mid-term, the portfolio will move towards the standard allocation depending on the residual risk budget. The success of such dynamic risk management is reviewed regularly by the pension committee and must be measured against a standard asset allocation without dynamic risk management.

The interfaces between the actuaries, the asset managers, the pension committee and the Group treasury are structured efficiently and functionally at Voith. In addition to a monthly comparison of the data and the reporting, the persons involved exchange information on the evolution of the pension strategy on the basis of a predefined schedule.

### Future cash flows

Contributions of €14,929 thousand are expected to be paid into the plans in the next reporting period.

The weighted average term of the DBO is 14 years.

# 21. Other provisions

The provisions consist of the following:

| in € thousands | At 2017-09-30 | Change in the consolidated Group | Utilization | Additions | Reversals | Transfers | Discounting effect | Currency translation differences | At 2018-09-30 |
|---|---|---|---|---|---|---|---|---|---|
| Personnel-related provisions | 71,375 | 140 | -8,321 | 17,981 | -1,576 | -21 | 336 | -362 | 79,552 |
| Other tax provisions | 3,980 | 0 | -934 | 1,853 | -346 | -7 | 0 | -228 | 4,318 |
| Warranty provisions | 217,086 | -52 | -81,538 | 83,147 | -32,113 | 1,044 | 0 | -3,597 | 183,977 |
| Other contract-related provisions | 146,764 | 0 | -23,916 | 44,466 | -45,190 | -3,721 | 13 | -747 | 117,669 |
| Other provisions | 94,488 | 333 | -41,035 | 6,361 | -9,153 | -998 | 0 | -582 | 49,414 |
| | **533,693** | **421** | **-155,744** | **153,808** | **-88,378** | **-3,703** | **349** | **-5,516** | **434,930** |

| in € thousands | 2018-09-30 < 1 year | 2018-09-30 > 1 year | 2017-09-30 < 1 year | 2017-09-30 > 1 year |
|---|---|---|---|---|
| Personnel-related provisions | 15,701 | 63,851 | 15,318 | 56,057 |
| Other tax provisions | 3,613 | 705 | 3,042 | 938 |
| Warranty provisions | 128,814 | 55,163 | 161,233 | 55,853 |
| Other contract-related provisions | 107,259 | 10,410 | 132,339 | 14,425 |
| Other provisions | 23,188 | 26,226 | 31,150 | 63,338 |
| | **278,575** | **156,355** | **343,082** | **190,611** |

Other provisions include restructuring provisions and provisions for personnel adjustments totaling €39.6 million (previous year: €62.2 million).

Refund claims totaling €6.9 million (previous year: €34.1 million) associated with other provisions were capitalized.

Personnel-related provisions mainly comprise the phased retirement scheme (“Altersteilzeit”) and long-service bonuses. In the case of provisions for phased retirement, the amount and maturity of the future payments to be made to the beneficiaries are uncertain. Warranty provisions are recorded based on past experience or on the basis of individual assessments and represent the legal and contractual warranty obligations as well as goodwill commitments to customers. The provisions generally represent amounts that will be payable within the next two fiscal years. Other contract-related provisions include obligations for services still to be rendered on customer orders or parts of orders that have been billed, obligations for service and maintenance contracts, and commission provisions. In these cases, the amount and timing of future expenses are dependent on completion of the orders concerned.

# 22. Bonds, bank loans and other interest-bearing financial liabilities

Financial liabilities include the following:

| in € thousands | Current | Non-current | 2018-09-30 | Current | Non-current | 2017-09-30 |
|---|---|---|---|---|---|---|
| Bonds | 17,574 | 0 | 17,574 | 0 | 17,935 | 17,935 |
| Bank loans | 59,771 | 198,363 | 258,134 | 23,947 | 394,400 | 418,347 |
| Financial liabilities from leases | 213 | 438 | 651 | 246 | 612 | 858 |
| Notes payable | 1,405 | 0 | 1,405 | 1,151 | 0 | 1,151 |
| Derivatives used to hedge financial transactions | 57 | 1,772 | 1,829 | 4,211 | 15,131 | 19,342 |
| Other loans and borrowings | 46,759 | 124,711 | 171,470 | 52,961 | 123,285 | 176,246 |
| | **125,779** | **325,284** | **451,063** | **82,516** | **551,363** | **633,879** |

Other loans and borrowings contain obligations from the classification of non-controlling interests in limited partnerships based on termination rights of holders of non-controlling interests and put options.

The Voith Group's current and non-current bonds and its bank loans are denominated in the following currencies:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Euro | 160,860 | 299,324 |
| Chinese renminbi | 45,136 | 107,962 |
| Canadian dollar | 21,108 | 3,020 |
| US dollar | 17,648 | 18,693 |
| Norwegian krone | 16,118 | 4,630 |
| Other currencies | 14,838 | 2,653 |
| | **275,708** | **436,282** |

# 23. Trade payables

Trade payables of €7,616 thousand (previous year: €3,481 thousand) are due after more than one year.

# 24. Other financial liabilities/other liabilities

## Other financial liabilities

| in € thousands | Current | Non-current | 2018-09-30 | Current | Non-current | 2017-09-30 |
|---|---|---|---|---|---|---|
| Derivatives used to hedge operational transactions | 20,683 | 8,179 | 28,862 | 7,877 | 1,063 | 8,940 |
| Personnel-related liabilities | 93,218 | 62 | 93,280 | 96,099 | 193 | 96,292 |
| Sundry financial liabilities | 116,608 | 18,437 | 135,045 | 130,104 | 34,379 | 164,483 |
| | **230,509** | **26,678** | **257,187** | **234,080** | **35,635** | **269,715** |

Personnel-related liabilities at fiscal year-end included outstanding annual bonus payments and outstanding payments for wages, salaries and social security contributions.

## Other liabilities

| in € thousands | Current | Non-current | 2018-09-30 | Current | Non-current | 2017-09-30 |
|---|---|---|---|---|---|---|
| Tax liabilities | 52,537 | 12,292 | 64,829 | 59,453 | 21,517 | 80,970 |
| Advances received | 605,138 | 0 | 605,138 | 578,021 | 0 | 578,021 |
| Deferred income | 7,609 | 5,989 | 13,598 | 2,487 | 8,503 | 10,990 |
| Other liabilities | 64,872 | 29,988 | 94,860 | 63,532 | 28,202 | 91,734 |
| | **730,156** | **48,269** | **778,425** | **703,493** | **58,222** | **761,715** |

Tax liabilities principally relate to sales taxes (VAT).

# Notes to the consolidated cash flow statement

The Industrial Services segment was disposed of in the 2015/16 fiscal year and a 20% investment was retained in the Industrial Services entities sold. This 20% investment was sold in the first half of 2017/18. In addition, a loan of €50 million was repaid to Voith. Within the scope of these transactions, we recorded a cash inflow of €86 million in the cash flow statement which is reported in the item "Proceeds from the disposal of financial assets".

| | | | Non-cash changes | | | | |
|---|---|---|---|---|---|---|---|
| in € thousands | 2017-10-01 | Cash changes | Changes arising from the acquisition/ disposal of companies | Changes due to currency effects | Changes in fair values | Other effects | 2018-09-30 |
| Bonds | 17,935 | 0 | 0 | 337 | -702 | 4 | 17,574 |
| Bank loans | 418,347 | -165,261 | 4,964 | -420 | 0 | 504 | 258,134 |
| Financial liabilities from leases | 858 | -207 | 0 | 0 | 0 | 0 | 651 |
| Notes payable | 1,151 | 240 | 0 | 14 | 0 | 0 | 1,405 |
| Derivatives used to hedge financial transactions | 19,342 | 0 | 0 | -1,512 | -16,001 | 0 | 1,829 |
| Other loans and borrowings | 176,246 | 10,103 | 121 | -445 | -11,294 | -3,261 | 171,470 |
| | **633,879** | **-155,125** | **5,085** | **-2,026** | **-27,997** | **-2,753** | **451,063** |
| Other financial receivables | -29,172 | 8,154 | -219 | 1,863 | 1,368 | -10,194 | -28,200 |
| | **604,707** | **-146,971** | **4,866** | **-163** | **-26,629** | **-12,947** | **422,863** |

# Notes on segment reporting

## Information on the segment data

The business is managed according to the different products and business segments and corresponds to the structure of internal reporting to the Board of Management of Voith Management GmbH.

The Group Division Digital Solutions reported as a stand-alone segment for the first time in the previous year brings together all the Group's expertise in the areas of automation, IT, software, data analytics and sensor technology. The sales with third parties reported in the Digital Solutions segment mainly originates from transactions with the entities Ray Sono AG, FlowLink Systems Private Ltd. and with the Group's own IT service provider with external customers. Sales with other segments relates to digital support for the established Group Divisions. Digital Solutions' sales with third parties included in the established Group Divisions are stated in the segment information by business segment. The profit from operations reflects to a great extent the build-up costs for this new Division.

As the business operations of Voith Composites SE & Co. KG is treated as a discontinued operation, the respective figures were eliminated in the segment reporting and the previous-year figures were correspondingly adjusted in the reconciliation and total column. In all other respects, the demarcation between the segments and the method used to calculate the segment information remains unchanged in comparison to September 30, 2017.

Segment information is generally based on the same presentation and measurement methods as the consolidated financial statements. Intercompany sales are effected at market prices and intersegment transactions and business are all reported in accordance with the accounting policies used for the consolidated financial statements.

In the Voith Group, the key indicator to assess and manage the individual segments is return on capital employed (ROCE). The calculation of ROCE is defined as profit from operations in relation to the average capital employed.

The operational result is the basis for calculating ROCE and is thus a key management indicator. It is essentially an operating earnings indicator derived from external reporting, comprising the operational result before non-recurring items. In line with the calculation of profit from operations, the following profit/loss components are taken into consideration.

Operating interest income is defined as interest received by the Company on the long-term financing of receivables from customers, or as the imputed interest effect attributable to that portion of customer advances that is not used to finance inventories and PoC receivables.

Capital employed is defined as operating net assets. It is the aggregate of property, plant and equipment and intangible assets (excluding goodwill), inventories, trade receivables, other non-interest-bearing assets and income tax assets as well as prepaid expenses, less trade payables, non-interest-bearing liabilities and income tax liabilities, deferred income and advances received, which are deducted up to the amount of inventories and PoC receivables.

The capital employed on the reporting date is an average value derived from the values as at the end of the fiscal year, as at the reporting date for the previous six-monthly financial statements and as at the end of the previous year. In contrast to the requirements of IAS 21, the assets and liabilities of foreign subsidiaries are translated at the average exchange rate for the year under review. Owing to the use of averages, capital employed cannot be reconciled to the figures in the consolidated balance sheet on any given reporting date.

Consolidation entries were taken into account in full in calculating capital employed.

Capital expenditures relate to intangible assets (excluding goodwill) and property, plant and equipment. Additions due to business combinations are not included.

Sales are broken down regionally, based on the customer's registered office. Non-current assets, consisting of property, plant and equipment, goodwill and other intangible assets, are allocated based on the location of the asset.

### Information on the activities of the segments presented

As a full-line supplier for equipping hydropower plants, the Group Division **Hydro** is one of the world's leading industrial partners for hydropower plant operators. This applies both to the field of electricity generation and to the pumped storage of energy. Hydro's portfolio of products and services covers the entire life cycle and supplies all major components for large and small hydropower plants: from generators, turbines, pumps, automation systems and digital solutions for smart hydropower right through to aftermarket business in spare parts and maintenance services, as well as training services. Voith Hydro is a joint venture with Siemens, in which Voith holds a majority (65%) of all shares and voting rights.

As a leading partner and pioneer in the paper industry, the Group Division **Paper** provides technologies, products and services for the entire paper manufacturing process, all from a single source. A constant stream of innovations allows the technology group to optimize the paper manufacturing process on an ongoing basis. The focus is placed on developing resource-saving products which reduce the consumption of energy, water and fibers. Furthermore, the Group Division Paper offers a broad service portfolio for all sections of the paper manufacturing process. Furthermore, the company's Papermaking 4.0 concept allows papermakers to network their equipment in the best possible way and improve their competitiveness through effective and secure use of the generated data.

The Group Division **Turbo** is the specialist for smart drive solutions and systems. Customers in numerous industries, such as oil and gas, energy, mining and mechanical engineering, marine technology, rail and commercial vehicles, value Voith's cutting-edge technology.

**Digital Solutions** brings together Voith's many years of automation and IT expertise with know-how in the fields of hydropower, paper machines and drive technology. The Group Division, which was newly created last year, develops innovative products and services with existing and new customers to advance the Internet of Things and to play a major role in the digitalization of plant and mechanical engineering. Digital Solutions was presented as a stand-alone segment for the first time in the 2016/17 fiscal year.

# Segment information by business segment

| | Hydro | | Paper | | Turbo | |
|---|---|---|---|---|---|---|
| in € millions | 2017/18 | 2016/17 | 2017/18 | 2016/17 | 2017/18 | 2016/17 |
| Sales with third parties | 1,103 | 1,381 | 1,746 | 1,527 | 1,302 | 1,283 |
| · Thereof attributable to Digital Solutions | 101 | 131 | 98 | 87 | 34 | 68 |
| Sales with other segments | 8 | 6 | 17 | 24 | 12 | 4 |
| Segment sales, total | 1,111 | 1,387 | 1,763 | 1,551 | 1,314 | 1,287 |
| Profit from operations | 77 | 106 | 114 | 107 | 76 | 91 |
| Depreciation and amortization of property, plant and equipment and intangible assets[2)] | 21 | 23 | 45 | 50 | 38 | 41 |
| Capital spending[3)] | 13 | 15 | 34 | 24 | 22 | 36 |
| Segment goodwill | 15 | 15 | 222 | 222 | 141 | 141 |
| Average capital employed | 456 | 489 | 627 | 721 | 681 | 703 |
| ROCE | 16.9% | 21.8% | 18.2% | 14.9% | 11.1% | 12.9% |
| Employees[4)] | 3,927 | 4,507 | 6,618 | 6,449 | 5,543 | 5,408 |

[1)] Sub-total of Hydro, Paper and Turbo.
[2)] Depreciation and amortization does not include depreciation and amortization recorded in the non-recurring result as it is not included in profit from operations.
[3)] Without additions due to business combinations and financial assets.
[4)] Statistical headcount on reporting date.

As the earnings component “Operating interest income” is not shown directly in the consolidated statement of income, this item is presented separately in the reconciliation of total profit from operations of the segments to result before taxes from continuing operations presented below.

The other adjustments mainly consist of effects from the handling of a warranty from previous periods.

| Total Core Business[1] | | Digital Solutions | | Reconciliation | | Total | |
|---|---|---|---|---|---|---|---|
| 2017/18 | 2016/17 | 2017/18 | 2016/17 | 2017/18 | 2016/17 | 2017/18 | 2016/17 |
| 4,151 | 4,191 | 40 | 13 | 18 | 20 | 4,209 | 4,224 |
| 233 | 286 | 40 | 13 | 0 | 0 | 273 | 299 |
| 37 | 34 | 163 | 132 | -200 | -166 | 0 | 0 |
| 4,188 | 4,225 | 203 | 145 | -182 | -146 | 4,209 | 4,224 |
| 267 | 304 | -46 | -43 | -10 | -7 | 211 | 254 |
| 104 | 114 | 12 | 8 | 5 | 4 | 121 | 126 |
| 69 | 75 | 21 | 15 | 4 | 2 | 94 | 92 |
| 378 | 378 | 58 | 55 | 7 | 7 | 443 | 440 |
| 1,764 | 1,913 | 95 | 44 | 137 | 100 | 1,996 | 2,057 |
| 15.1% | 15.9% | -47.7% | -97.3% | | | 10.6% | 12.4% |
| 16,088 | 16,364 | 2,256 | 1,397 | 1,191 | 1,196 | 19,535 | 18,957 |

## Reconciliation of total profit from operations to the Group's result before taxes from continuing operations:

| in € millions | 2017/18 | 2016/17 |
|---|---|---|
| **Total profit from operations** | **211** | **254** |
| Operating interest income | -24 | -30 |
| Other adjustments | -17 | 0 |
| Non-recurring result | -22 | -32 |
| Share of profit/loss from companies accounted for using the equity method | 2 | 8 |
| Gains/losses from the sale of associates | 0 | 563 |
| Interest income/expense | -17 | -59 |
| Other financial result | 19 | -10 |
| **Result before taxes from continuing operations** | **152** | **694** |

# Segment information by region

## External sales (registered office of customer)

| in € millions | 2017/18 | 2016/17 |
|---|---|---|
| Germany | 563 | 558 |
| Foreign countries | 3,646 | 3,666 |
| thereof Europe | 1,185 | 1,096 |
| thereof Americas | 1,067 | 1,195 |
| thereof Asia | 1,253 | 1,111 |
| · of which China | 780 | 543 |
| thereof others | 141 | 264 |
| | **4,209** | **4,224** |

## Non-current assets

| in € millions | 2017/18 | 2016/17 |
|---|---|---|
| Germany | 667 | 706 |
| Foreign countries | 752 | 788 |
| thereof Europe | 146 | 151 |
| thereof Americas | 259 | 293 |
| · of which USA | 192 | 193 |
| thereof Asia | 344 | 341 |
| · of which China | 285 | 304 |
| thereof others | 3 | 3 |
| | **1,419** | **1,494** |

# Other notes

## Contingent liabilities, contingent assets and other financial obligations

Appropriate provisions have been recognized in the relevant Group companies to cover potential obligations arising from taxation, legal and arbitration proceedings.

In addition, there are risks in connection with the recognition of transfer prices outside Germany amounting to €5 million (previous year: €5 million) and risks from legal disputes of €42 million (previous year: €27 million). A successful outcome is currently expected in both cases.

Neither Voith GmbH & Co. KGaA nor any of its Group companies are involved in any further current or foreseeable taxation, legal, or arbitration proceedings that could materially influence their economic situation.

Owing to the ongoing tax field audit of German companies, further changes may be made to tax items.

## Contingent liabilities

The contingent liabilities listed below are stated at face value. No provisions were recognized for these contingencies, as the probability of occurrence is regarded as low:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Guarantee obligations | 3,044 | 1,161 |
| Warranties | 451 | 313 |
| Provision of collateral for third-party liabilities | 1,000 | 0 |
| | **4,495** | **1,474** |

Most of the guarantee obligations expire in 2019.

## Other financial obligations

In addition to liabilities, provisions and contingent liabilities, the Voith Group also has other financial obligations, in particular arising from rental and lease agreements for buildings, land, plant, machinery and other non-production-related tools and equipment.

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Purchase commitments for capital expenditures | 19,243 | 10,935 |
| Obligations arising from non-cancelable operating leases | 120,472 | 120,506 |
| Other | 86,696 | 6,918 |
| | **226,411** | **138,359** |

Assets leased under operating leases led to cash outflows totaling €49,417 thousand (previous year: €51,314 thousand). These payments mostly relate to leased passenger vehicles, machinery and buildings. The majority of leases run for between 1 and 15 years. Some companies have the option of extending their rental contracts.

The total of future minimum lease payments for non-cancelable operating leases is shown below, broken down by maturity:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| Nominal value of future minimum lease payments | | |
| · due in less than one year | 51,231 | 42,091 |
| · due between one and five years | 64,118 | 68,262 |
| · due in more than five years | 5,123 | 10,153 |
| | **120,472** | **120,506** |

The future minimum lease payments from non-cancelable operating leases are partially offset by an immaterial amount of cash inflows expected from non-cancelable subleases.

## Additional information on financial instruments

Carrying amounts, amounts recognized in the balance sheet and fair values by measurement category.

| in € thousands | IAS 39 measurement category | Carrying amount 2018-09-30 | Amount recognized in the balance sheet in accordance with IAS 39: Amortized cost | Cost | Fair value through equity | Fair value through profit or loss | Amount recognized in the balance sheet in accordance with IAS 17 | Fair value 2018-09-30 |
|---|---|---|---|---|---|---|---|---|
| **Assets:** | | | | | | | | |
| Cash and cash equivalents | LaR | 341,691 | 341,691 | | | | | 341,691 |
| Trade receivables | LaR | 687,984 | 687,984 | | | | | 687,984 |
| Receivables from construction contracts | LaR | 346,729 | 346,729 | | | | | 346,729 |
| Other financial assets and securities | | 721,669 | | | | | | |
| · Financial investments | LaR | 616,154 | 616,154 | | | | | 616,154 |
| · Loans | LaR | 8,628 | 8,628 | | | | | 8,628 |
| · Investments | AfS | 83,380 | | 61,955 | 21,425 | | | 21,425[1] |
| · Securities | AfS | 13,507 | | | 13,507 | | | 13,507 |
| Derivative financial instruments | | 12,780 | | | | | | |
| · Forward exchange contracts | FAHfT | 4,058 | | | | 4,058 | | 4,058 |
| · Forward exchange contracts (fair value hedges) | n.a. | 8,391 | | | | 8,391 | | 8,391 |
| · Interest rate swaps (fair value hedges) | n.a. | 331 | | | | 331 | | 331 |
| Other receivables | | 112,638 | | | | | | |
| · Financial receivables | LaR | 8,177 | 8,177 | | | | | 8,177 |
| · Sundry financial assets | LaR | 104,461 | 104,461 | | | | | 104,461 |
| **Liabilities:** | | | | | | | | |
| Trade payables | FLAC | 510,585 | 510,585 | | | | | 510,585 |
| Bonds/bank loans/notes | FLAC | 277,113 | 277,113 | | | | | 291,736 |
| Financial liabilities from leases | n.a. | 651 | | | | | 651 | |
| Derivative financial instruments | | 30,691 | | | | | | |
| · Forward exchange contracts | FLHfT | 6,561 | | | | 6,561 | | 6,561 |
| · Forward exchange contracts (fair value hedges) | n.a. | 24,130 | | | | 24,130 | | 24,130 |
| Other loans and borrowings | FLAC | 171,470 | 133,858 | | 37,612 | | | 194,047 |
| Sundry financial liabilities | FLAC | 228,325 | 228,325 | | | | | 228,325 |
| **IAS 39 measurement categories:** | | | | | | | | |
| Loans and receivables (LaR) | LaR | 2,113,824 | 2,113,824 | | | | | |
| Available for sale (AfS) | AfS | 96,887 | | 61,955 | 34,932 | | | |
| Financial assets held for trading (FAHfT) | FAHfT | 4,058 | | | | 4,058 | | |
| Financial liabilities measured at amortized cost (FLAC) | FLAC | 1,187,493 | 1,149,881 | | 37,612 | | | |
| Financial liabilities held for trading (FLHfT) | FLHfT | 6,561 | | | | 6,561 | | |

[1] The financial assets available for sale (AfS) include investments whose fair value could not be determined reliably and that are currently not planned to be sold.

| | | | Amount recognized in the balance sheet in accordance with IAS 39 | | | | | |
|---|---|---|---|---|---|---|---|---|
| in € thousands | IAS 39 measurement category | Carrying amount 2017-09-30 | Amortized cost | Cost | Fair value through equity | Fair value through profit or loss | Amount recognized in the balance sheet in accordance with IAS 17 | Fair value 2017-09-30 |
| **Assets:** | | | | | | | | |
| Cash and cash equivalents | LaR | 581,947 | 581,947 | | | | | 581,947 |
| Trade receivables | LaR | 713,899 | 713,899 | | | | | 713,899 |
| Receivables from construction contracts | LaR | 323,929 | 323,929 | | | | | 323,929 |
| Other financial assets and securities | | 719,500 | | | | | | |
| · Financial investments | LaR | 599,965 | 599,965 | | | | | 599,965 |
| · Loans | LaR | 56,987 | 56,987 | | | | | 56,987 |
| · Investments | AfS | 48,967 | | 27,367 | 21,600[2] | | | 21,600[1] |
| · Securities | AfS | 13,581 | | | 13,581 | | | 13,581 |
| Derivative financial instruments | | 46,588 | | | | | | |
| · Forward exchange contracts | FAHfT | 4,820 | | | | 4,820 | | 4,820 |
| · Forward exchange contracts (fair value hedges) | n.a. | 40,735 | | | | 40,735 | | 40,735 |
| · Interest rate swaps (fair value hedges) | n.a. | 1,033 | | | | 1,033 | | 1,033 |
| Other receivables | | 106,478 | | | | | | |
| · Financial receivables | LaR | 25,975 | 25,975 | | | | | 25,975 |
| · Sundry financial assets | LaR | 80,503 | 80,503 | | | | | 80,503 |
| **Liabilities:** | | | | | | | | |
| Trade payables | FLAC | 509,741 | 509,741 | | | | | 509,741 |
| Bonds/bank loans/notes | FLAC | 437,433 | 437,433 | | | | | 454,275 |
| Financial liabilities from leases | n.a. | 858 | | | | | 858 | |
| Derivative financial instruments | | 28,282 | | | | | | |
| · Forward exchange contracts | FLHfT | 13,892 | | | | 13,892 | | 13,892 |
| · Call option | FLHfT | 3,500 | | | | 3,500[2] | | 3,500 |
| · Forward exchange contracts (fair value hedges) | n.a. | 8,299 | | | | 8,299 | | 8,299 |
| · Forward exchange contracts (cash flow hedges) | n.a. | 1 | | | 1 | | | 1 |
| · Interest rate swaps (cash flow hedges) | n.a. | 2,590 | | | 2,590 | | | 2,590 |
| Other loans and borrowings | FLAC | 176,246 | 136,065 | | 40,181 | | | 210,673 |
| Sundry financial liabilities | FLAC | 260,775 | 260,775 | | | | | 260,775 |
| **IAS 39 measurement categories:** | | | | | | | | |
| Loans and receivables (LaR) | LaR | 2,383,205 | 2,383,205 | | | | | |
| Available for sale (AfS) | AfS | 62,548 | | 27,367 | 35,181 | | | |
| Financial assets held for trading (FAHfT) | FAHfT | 4,820 | | | | 4,820 | | |
| Financial liabilities measured at amortized cost (FLAC) | FLAC | 1,384,195 | 1,344,014 | | 40,181 | | | |
| Financial liabilities held for trading (FLHfT) | FLHfT | 17,392 | | | | 17,392 | | |

[1] The financial assets available for sale (AfS) include investments whose fair value could not be determined reliably.
[2] A call option embedded in the investment (equity instrument) held by Voith was accounted for separately. The call option in which Voith is the writer grants the majority owner the right to acquire all shares held by Voith in the period up to 2019.

Fair value hierarchy for the financial assets and liabilities recognized at fair value listed in the table above:

| in € thousands | 2018-09-30 | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| **Assets** | | | | |
| Securities | 13,507 | 13,507 | 0 | 0 |
| Derivative financial instruments | 12,780 | 0 | 12,780 | 0 |
| Investments | 21,425 | 0 | 0 | 21,425 |
| **Liabilities** | | | | |
| Derivative financial instruments | 30,691 | 0 | 30,691 | 0 |
| Liabilities arising from the acquisition of investment shareholdings | 37,612 | 0 | 0 | 37,612 |

| in € thousands | 2017-09-30 | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| **Assets** | | | | |
| Securities | 13,581 | 13,581 | 0 | 0 |
| Derivative financial instruments | 46,588 | 0 | 46,588 | 0 |
| Investments | 21,600 | 0 | 0 | 21,600 |
| **Liabilities** | | | | |
| Derivative financial instruments | 28,282 | 0 | 24,782 | 3,500 |
| Liabilities arising from the acquisition of investment shareholdings | 40,181 | 0 | 0 | 40,181 |

The three-level fair value hierarchy divides the input factors used in the measurement techniques to measure the fair value into three levels, as follows:

Level 1:
Input factors quoted in active markets accessible to the Company for identical assets or liabilities on the measurement date.

Level 2:
Other inputs than those at level 1 for which observable market data which relates directly or indirectly to the financial assets or liabilities is available.

Level 3:
Input factors for which there are no observable market data.

No reclassifications were made between the levels of the fair value hierarchy in the 2017/18 fiscal year.

The fair values of derivative financial instruments allocated to level 2 of the fair value hierarchy are taken from the daily observable exchange rates, associated forward rates and yield curves. In addition, fair value measurement includes both the counterparty credit risk and the Group's own credit risk. Input factors that take account of counterparty credit risk can be obtained from observable credit default swaps (CDS) from the banks participating in the respective transaction. At Voith the market CDS rate was used to calculate the Group's own credit risk.

The amount recognized in the balance sheet of the investments allocated to level 3 of the fair value hierarchy was changed. Previously, the exception contained in IAS 39.46(c) was exercised for these investments and they were measured at amortized cost. In order to determine the fair value of the investments as at September 30, 2018, in a first step the fair value of each investment was calculated from the total number of shares held and the cash and cash equivalents available as at the measurement date. The equity value of the respective investment is determined on the basis of a market-oriented approach to measurement, the multiplier method, and is calculated in each case from the overall business value minus the net financial position. In the present case, multipliers derived from representative external transactions are used, taking account of current developments up to the measurement date. These multipliers are multiplied by the average of operating result (EBITDA) achieved in the past in relation to the overall business value. In a second step, the fair values of the investments attributable to Voith are calculated in accordance with the existing ownership structure.

As at September 30, 2017, the fair value of the investment allocated to level 3 of the fair value hierarchy was determined by an impartial appraiser on the basis of an income-based measurement technique and contained parameters that cannot be observed on the market. On account of contractual subordination, the economic value of Voith's investment did not correspond to the proportionate market value of the equity. For this reason, the fair value was based on an options pricing model (binomial model), the input parameters used at the reporting date were the business model of the investment amounting to €138.7 million, capital market interest rates that reflect the term to maturity and the risk profile amounting to 0.02% per annum, and share price volatilities of a peer group amounting to 26.0% per annum.

The value of the embedded call option accounted for separately was determined indirectly from the difference in carrying amount of the investment with and without the option. In the event of the call option being exercised by the majority owner, Voith could, depending on the timing of the exercise of the call option, generate a gain on sale of up to a maximum of €40.2 million. In economic terms, the call option limited the maximum revenue Voith could generate from the investment to the option's strike price.

The call option was exercised by the majority owner in the first half of the 2017/18 fiscal year and the investment was sold. For more information on this, we refer to the section entitled "Disposal of shares".

The fair values of liabilities from the business combination allocated to level 3 of the fair value hierarchy concern put options held by non-controlling shareholders as well as contractually agreed purchase price instalments from future share acquisitions. The fair values were calculated on the basis of the latest business planning prepared by management applying the discounted cash flow method. The planning assumptions are adjusted to reflect the current information available. A risk-adjusted discount rate

(WACC) was applied. Shareholder agreements usually contain an agreed formula for the calculation of the purchase price when the put options are exercised. In this respect, the purchase prices result from the gross business values of the investments determined using the multiplier method in accordance with a contractually agreed definition, minus the net debt, multiplied by the non-controllers' shareholdings. If the put options can be exercised only at a later date, the purchase prices are discounted to the reporting date using an interest rate (WACC) appropriate for the term involved.

If the business value of the underlying companies were to increase (decrease), this would lead to an increase (decrease) in the liabilities from the acquisition of investment shareholdings.

The changes in the fair values of assets and liabilities classified as level 3 in the fair value hierarchy were as follows:

| in € thousands | 2018-09-30 | 2017-09-30 |
|---|---|---|
| **Balance, October 1** | **-22,081** | **9,511** |
| Change in valuation policy | 20,378 | 0 |
| Liabilities from acquisition of investments | -5,200 | 0 |
| Disposal of investments | -21,600 | 0 |
| Exercise of call option | 3,500 | 0 |
| Put options from business combinations | 0 | -33,367 |
| Fair value changes recorded in profit or loss | 2,010 | 1,300 |
| Fair value changes recorded in equity | 6,806 | 475 |
| **Balance, September 30** | **-16,187** | **-22,081** |

The fair values of financial assets and financial liabilities measured at cost or amortized cost, which need to be determined to meet disclosure requirements, are calculated as follows:

Cash and cash equivalents, trade receivables and other financial receivables are subject to floating interest and fall due within one year. For this reason, their carrying amounts approximate their market values on the reporting date.

Because trade payables and other financial liabilities generally have short residual terms, their carrying amounts approximate the market values.

The market value of the remaining fixed-interest portions of the note loan of €175 million (previous year: €316 million) is calculated in the same way as the market values of unlisted bonds, bank loans and other financial liabilities as the present value of the payments associated with the liabilities, based on the effective yield curve and Voith GmbH & Co. KGaA's credit spread curve determined for different currencies (fair value hierarchy level 2).

The market value of other financial liabilities totaling €94 million (previous year: €115 million) was determined based on internal planning data. These are measured using the discounted cash flow projections taken from the latest business planning prepared by management. The planning assumptions are adjusted to reflect the current information available (fair value hierarchy level 3).

Net gains and losses for each measurement category of financial instruments:

**2017/18**

| in € thousands | Impairments | Other net gains/ losses | Total |
|---|---|---|---|
| Loans and receivables (LaR) | -8,872 | 15,015 | 6,143 |
| Available-for-sale financial assets | -1,801 | 742 | -1,059 |
| Financial assets held for trading | 0 | 6,145 | 6,145 |
| Financial liabilities measured at amortized cost | 0 | -37,648 | -37,648 |

2016/17

| in € thousands | Impairments | Other net gains/ losses | Total |
|---|---|---|---|
| Loans and receivables (LaR) | -6,101 | -62,757 | -68,858 |
| Available-for-sale financial assets | -486 | -1,636 | -2,122 |
| Financial assets held for trading | 0 | 7,108 | 7,108 |
| Financial liabilities measured at amortized cost | 0 | 11,639 | 11,639 |

Further information on net gains and losses through equity from financial assets included in the available-for-sale category is provided in note 19.

Impairment losses recognized on loans and receivables primarily relate to trade receivables. Impairment losses in the category "available-for-sale financial assets" primarily relate to investments that have seen a significant decline in fair value.

All interest income and interest expenses for financial assets or financial liabilities relate to those assets or liabilities that are not measured at fair value through profit or loss.

### Offsetting of financial instruments

The following table shows the volume that can potentially be offset under master netting agreements. The agreements do not meet the criteria required for net presentation in the balance sheet due to the fact that the Group does not have a present legal right to offset the amounts recognized, as the right to offset is conditional on the occurrence of future events.

| in € thousands | Gross presentation balance sheet 2018-09-30 | Volume that can potentially be offset under master netting agreements | Potential net amount |
|---|---|---|---|
| **Assets** | | | |
| Derivative financial instruments | 12,780 | 7,983 | 4,797 |
| **Liabilities** | | | |
| Derivative financial instruments | 30,691 | 7,983 | 22,708 |

| in € thousands | Gross presentation balance sheet 2017-09-30 | Volume that can potentially be offset under master netting agreements | Potential net amount |
|---|---|---|---|
| **Assets** | | | |
| Derivative financial instruments | 46,588 | 16,103 | 30,485 |
| **Liabilities** | | | |
| Derivative financial instruments | 28,282 | 16,103 | 12,179 |

### Collateral

As of the reporting date, the financial assets include non-current securities totaling €8,955 thousand (previous year: €9,113 thousand) that are used to cover future pension obligations. Furthermore, €163 thousand of the sundry financial assets (previous year: €1,632 thousand) has been provided as collateral for liabilities and contingent liabilities. They may be drawn on if the underlying obligations are not fulfilled or if the contingent liabilities are realized.

Assets of €3,905 thousand (previous year: €0) have been provided as collateral for financial liabilities.

## Risk management

### Principles of financial risk management

The Voith Group is a global business and is exposed to risks arising from changes in interest rates and exchange rates in the course of its ordinary business activities which affect its liabilities, assets and transactions. These risks could affect its net assets, financial position and earnings position. The aim of financial risk management is to manage and limit these risks.

The principles of the Group's financial policy are laid down by the Voith GmbH & Co. KGaA Board of Management and monitored by the Supervisory Board. Voith Finance GmbH, a wholly-owned subsidiary of Voith GmbH & Co. KGaA, implements the financial policy and regularly reports to the Chief Financial

Officer on the financial position of the Group and current risk exposures. Certain financial transactions require special approval by the Corporate Board of Management. Long-term refinancing is obtained by Voith GmbH & Co. KGaA.

Simple derivative financial instruments are used to limit the risks arising both from operating business and from the resultant financing requirements. These instruments are used in accordance with clearly defined, consistent, Group-wide guidelines. Compliance with these guidelines is verified on an ongoing basis. Hedge transactions and cash investments are placed only with financial institutions that have first-class credit ratings.

## Credit risk

The Voith Group does business only with recognized, creditworthy third parties. We verify the creditworthiness of customers who wish to do credit-based business with us.

**Cash and cash equivalents:**
For the purposes of internal risk management, cash and cash equivalents consist essentially of cash and short-term securities. Counterparty default risks associated with term deposits are limited by selecting solvent banking partners and by spreading cash across multiple counterparties. For banks, a ratings-based limit (derived from credit default swaps/rating) is monitored constantly. In addition, the Voith Group invests in securities and monitors the associated risks of these centrally. Securities may only be traded by Group companies with the approval of Voith Finance GmbH.

**Trade receivables:**
Credit risk arising from the delivery of goods and services stems from counterparty risks, manufacturing risks and political export-related risks. Handling of these risks is governed by rules that are binding throughout the Voith Group. The maximum default risk is limited to the carrying amount of trade receivables, which is €687,984 thousand (previous year: €713,899 thousand). The maximum default risk for receivables from construction contracts is €346,729 thousand (previous year: €323,929 thousand). On account of the collateral held, the maximum default risk for trade receivables is reduced by €89,677 thousand (previous year: €118,114 thousand) and that for receivables from construction contracts by €12,002 thousand (previous year: €58,118 thousand).

All orders above a defined contract value are subject to general risk assessment requirements. Without special permission from the relevant decision-making bodies, Group companies do not accept unsecured orders from customers whose credit rating is below a defined threshold and who cannot furnish an adequate guarantor.

Political export-related risks classified as Euler Hermes country category 3 or higher must, as a rule, be hedged, unless approval is issued by the decision-making bodies in individual cases. Further risk assessment is also activated for orders upward of defined contract values. Necessary credit insurance is obtained via export credit agencies (ECAs), on the private insurance market or by means of bank products.

With respect to credit risk arising from the Group's other financial assets, which comprise cash and cash equivalents, available-for-sale financial assets and certain derivative financial instruments, the Group's exposure to credit risk arises from default of the counterparty, with a maximum exposure equal to the carrying amount of these instruments. For details of financial guarantees, please refer to the discussion of contingent liabilities. This kind of loss can occur if individual business partners fail to meet their contractual obligations. As a rule, no collateral exists for such an eventuality.

The Voith Group is not exposed to any material concentration of risks. Corporate policy is to avoid concentration of credit risk in a single financial institution. Instead, the Group invests with a variety of creditworthy financial institutions. The Group's customer structure is not materially concentrated in any particular geographic region. The Group tests doubtful accounts for impairment considering certain customers, historical trends, branches of industry and various other information.

The following credit risks are inherent in financial assets:

| 2018-09-30 | | | Thereof not impaired but past due at the reporting date by: | | |
|---|---|---|---|---|---|
| in € thousands | Gross value | Thereof neither impaired nor past due | less than 90 days | between 90 and 180 days | more than 180 days |
| Trade receivables | **739,647** | 518,319 | 98,983 | 62,330 | 24,724 |
| Other financial assets and securities | **773,386** | 712,442 | | | |
| Other financial receivables | **121,150** | 107,026 | 2,618 | 512 | 1,740 |

| 2017-09-30 | | | Thereof not impaired but past due at the reporting date by: | | |
|---|---|---|---|---|---|
| in € thousands | Gross value | Thereof neither impaired nor past due | less than 90 days | between 90 and 180 days | more than 180 days |
| Trade receivables | **761,727** | 505,323 | 107,767 | 59,972 | 46,928 |
| Other financial assets and securities | **772,226** | 665,092 | | | |
| Other financial receivables | **118,171** | 98,816 | 3,945 | 170 | 1,532 |

The carrying amounts of cash and cash equivalents, receivables from construction contracts and derivatives are neither impaired nor past due.

## Liquidity risk

To ensure that it can always meet its financial obligations, the Voith Group has negotiated sufficient cash lines and syndicated credit facilities with its banking partners.

The syndicated loan placed in China in 2012 and extended until 2020 by amendment agreement in 2015 secures the finance for future investments and for the operating business in the same currency on the local market. This loan was drawn on during the year under review as planned.

The syndicated euro loan of €770 million was refinanced in April 2018 and adjusted to €550 million. It remains available until 2023, with two renewal options until 2025. No financial covenants were arranged. It has not been drawn on and is available as a strategic liquidity reserve if needed, as are available bilateral lines of credit from banks. To safeguard internal and external growth, the Voith Group procures long-term funding on the capital markets by issuing bonds, through private placements and individual bank loans.

The floating-rate portion of the note loan of €139 million was prematurely repaid from own funds in the second half of the 2017/18 fiscal year.

The credit facilities are subject to the customary market conditions and contractual terms and conditions based on Voith's rating. As in previous years, all contractual terms and conditions were complied with in the 2017/18 fiscal year. The rating given by Moody's was raised from Ba1 to an investment grade of Baa3 in December 2017. In addition, the rating agency S&P issued its first rating of BBB-. Scope Ratings published its first rating assessment of BBB flat in the second half of the 2017/18 fiscal year.

The liquidity of Group companies is ensured by means of cash pools, intercompany loans and the allocation of external bank credit lines to individual operating units. Voith Finance GmbH produces monthly finance status reports for the entire Group. Balances of central bank and cash pool accounts and bank guarantees are available on a daily basis.

The table below lists the undiscounted, contractually agreed cash outflows for financial instruments:

| in € thousands | 2018-09-30 | Cash flows < 1 year | Cash flows 1–5 years | Cash flows > 5 years |
|---|---|---|---|---|
| Trade payables | 510,585 | 502,969 | 7,775 | 0 |
| Bonds/bank loans/notes | 277,113 | 84,317 | 188,438 | 22,887 |
| Financial liabilities from leases | 651 | 229 | 455 | 0 |
| Other loans and borrowings | 171,470 | 47,280 | 18,120 | 106,624 |
| Other financial liabilities | 228,325 | 209,826 | 17,926 | 573 |
| Derivative financial instruments | 30,691 | | | |
| · Outflows | | 293,178 | 112,955 | 305 |
| · Inflows | | -273,658 | -98,077 | -339 |
| | **1,218,835** | **864,141** | **247,592** | **130,050** |

| in € thousands | 2017-09-30 | Cash flows < 1 year | Cash flows 1–5 years | Cash flows > 5 years |
|---|---|---|---|---|
| Trade payables | 509,741 | 506,260 | 3,170 | 16 |
| Bonds/bank loans/notes | 437,433 | 36,793 | 296,144 | 153,507 |
| Financial liabilities from leases | 858 | 275 | 638 | 0 |
| Other loans and borrowings | 176,246 | 53,547 | 207 | 123,069 |
| Other financial liabilities | 260,775 | 226,203 | 34,005 | 567 |
| Derivative financial instruments | 28,282 | | | |
| · Outflows | | 193,493 | 87,581 | 112 |
| · Inflows | | -185,721 | -50,467 | -108 |
| | **1,413,335** | **830,850** | **371,278** | **277,163** |

Solvency is ensured and liquidity managed using cash equivalents and short-term securities which can be transformed into cash at any time.

Derivatives include cash outflows for derivative financial instruments with negative market values for which gross cash settlement has been agreed. The cash outflows for these financial derivatives are matched by corresponding cash inflows which are shown separately in the table above under inflows and outflows (gross). On the other hand, where a net cash settlement is effected, cash outflows are presented on a net basis.

There are no expectations that cash flows presented in the maturity analysis could be incurred significantly earlier, or that there will be significant changes to the cash flow amounts.

### Financial market risk

**Foreign exchange risk:**

Global production and trading activities expose the Voith Group to risks arising from fluctuations in exchange rates. Foreign exchange risks exist in particular wherever receivables, liabilities, cash and cash equivalents, and orders received (fixed obligations/forecast transactions) are or will be denominated in a currency other than the functional currency of the Group company concerned.

Most currency hedging is undertaken by Voith Finance GmbH and its Regional Treasury and Finance Center. Transaction risks arising from the international delivery of goods and services are mainly limited by forward exchange contracts. In general, all foreign currency transactions at the Voith Group must be hedged. Major balance sheet items and orders upward of a value of USD 1.0 million are hedged individually within the framework of hedge accounting.

In the project business, both the hedge relationship and the risk management objectives and strategies must be documented in respect of the underlying hedged item or transactions before external hedges are entered into.

Hedges must be highly effective to be in compliance with the Voith Group's risk management strategy. Where hedges are demonstrated to be effective, the transactions qualify for hedge accounting. As a result, fluctuations in the exchange rate do not affect profit or loss, nor do they influence project costing.

In the Voith Group, derivative financial instruments are traded externally by Voith Finance GmbH on behalf of Group companies. Group companies in countries subject to foreign exchange restrictions hedge their currency risks locally. The Group-wide treasury management software tool is used for central scheduling, monitoring and documentation of all foreign currency hedges entered into by Voith Finance or Group companies.

Changes in the US dollar exchange rate are significant for the Voith Group. Based on the balance sheet items described above, the effects on the net result and consolidated equity are as follows: if the US dollar rises by 5%, the result before taxes increases by €6,442 thousand (previous year: increase of €7,462 thousand) and equity (including the effect from the result before taxes) by the same amount, as was the case in the previous year. If, on the other hand, the US dollar falls by 5%, the result before taxes decreases by €6,442 thousand (previous year: decrease of €7,462 thousand) and equity (including the effect from the result before taxes) by the same amount, as was the case in the previous year.

**Interest rate risk:**

The Voith Group's exposure to interest rate risks arising from external refinancing is analyzed and managed centrally by Voith Finance GmbH. Medium- to long-term assets and liabilities with fixed interest rates are the main source of interest rate risks at the Group, as changes in market rates of interest can cause the value of a financial instrument to fluctuate. Risks to the market value of fixed-interest receivables and liabilities are hedged on a case-by-case basis. Risks to market value are hedged by interest rate swaps and combined interest rate and currency swaps, which usually qualify for hedge accounting.

The relevant asset items are essentially cash at banks that is invested in the money market and/or is used to fund the existing cash pools. The Group companies that participate in the cash pool operate a daily zero-balancing policy and therefore have no exposure to external interest rate risks.

On the cost side, interest rate risks arise from a private placement in the United States, a note loan and a variety of bank loans. The fixed interest rate on the US private placement was swapped for a floating rate and the resulting cash flow risk hedged by interest rate caps accordingly.

The carrying amounts of the Group's significant financial instruments that are exposed to interest rate risks are grouped by their contractually agreed maturities in the following table:

| 2018-09-30<br>in € thousands | Less than 1 year | 1–2 years | 2–3 years | 3–4 years | 4–5 years | More than 5 years | Total |
|---|---|---|---|---|---|---|---|
| **Floating interest rate** | | | | | | | |
| Cash and cash equivalents | 341,691 | 0 | 0 | 0 | 0 | 0 | **341,691** |
| Bonds | 17,574 | 0 | 0 | 0 | 0 | 0 | **17,574** |
| Bank loans | 59,771 | 37,690 | 0 | 0 | 0 | 0 | **97,461** |
| **Fixed interest rate** | | | | | | | |
| Bank loans | 0 | 0 | 101,823 | 0 | 37,910 | 20,940 | **160,673** |

| 2017-09-30<br>in € thousands | Less than 1 year | 1–2 years | 2–3 years | 3–4 years | 4–5 years | More than 5 years | Total |
|---|---|---|---|---|---|---|---|
| **Floating interest rate** | | | | | | | |
| Cash and cash equivalents | 581,947 | 0 | 0 | 0 | 0 | 0 | **581,947** |
| Bonds | 0 | 17,935 | 0 | 0 | 0 | 0 | **17,935** |
| Bank loans | 23,948 | 0 | 95,229 | 0 | 0 | 0 | **119,177** |
| **Fixed interest rate** | | | | | | | |
| Bank loans | 0 | 0 | 0 | 152,113 | 0 | 147,057 | **299,170** |

If the market rate of interest had been 100 basis points higher (lower) at September 30, 2018, gains/losses from the significant floating-rate financial instruments would have been €2.3 million higher (lower) (previous year: €4.4 million higher (lower)). Equity would have changed accordingly. This effect chiefly originates from euro-denominated floating-rate financial instruments of €0.6 million (previous year: €2.5 million).

### Risks relating to securities and stock prices:

The Voith Group holds other securities in the available-for-sale category of €14 million (previous year: €14 million). Stock price risks are reflected in the balance sheet and not in the consolidated statement of income, unless the criteria for impairment are met. A 10% change in the underlying stock prices would cause equity to change by 10% of the carrying amount of the stocks concerned.

It should be noted that all existing stock price risks are analyzed continuously and suitable counteraction is taken accordingly.

**Commodity price risk:**
The Voith Group is exposed to risks arising from changes in commodity prices, as these also affect most of the semi-finished goods that it needs. Voith's Corporate Purchasing regularly reviews the nature, volume and scheduling of the Group's materials requirements. On request by Corporate Purchasing and in consultation and agreement with Group companies, suitable forward commodity contracts can be arranged by Voith Finance GmbH to limit any latent commodity price risks. The Group had no commodity contracts during the fiscal year.

**Hedge relationships:**
The following items are used to hedge foreign exchange and interest rate risks:

| 2018-09-30 | Nominal values[1] | | Positive market values | | Negative market values | |
|---|---|---|---|---|---|---|
| in € thousands | < 1 year | > 1 year | < 1 year | > 1 year | < 1 year | > 1 year |
| Forward exchange contracts (fair value hedges) | 394,499 | 210,029 | 4,662 | 3,729 | 16,347 | 7,783 |
| Interest rate swaps (fair value hedges) | 17,270 | 0 | 331 | 0 | 0 | 0 |
| Other derivatives | 195,676 | 59,420 | 2,569 | 1,489 | 4,393 | 2,168 |
| | **607,445** | **269,449** | **7,562** | **5,218** | **20,740** | **9,951** |

| 2017-09-30 | Nominal values[1] | | Positive market values | | Negative market values | |
|---|---|---|---|---|---|---|
| in € thousands | < 1 year | > 1 year | < 1 year | > 1 year | < 1 year | > 1 year |
| Forward exchange contracts (fair value hedges) | 472,785 | 210,987 | 19,653 | 21,082 | 6,670 | 1,629 |
| Forward exchange contracts (cash flow hedges) | 521 | 0 | 0 | 0 | 1 | 0 |
| Interest rate swaps (fair value hedges) | 0 | 16,940 | 0 | 1,033 | 0 | 0 |
| Interest rate swaps (cash flow hedges) | 0 | 139,000 | 0 | 0 | 0 | 2,590 |
| Other derivatives | 208,749 | 118,907 | 4,605 | 215 | 5,417 | 11,975 |
| | **682,055** | **485,834** | **24,258** | **22,330** | **12,088** | **16,194** |

[1] Nominal values refer to the volume of the hedged transactions in the local currency, translated at the closing rate.

**Fair value hedges:**
The Group uses fair value hedges primarily to hedge interest rate and foreign exchange risks.

In the 2017/18 fiscal year, a loss of €48,877 thousand was recorded on derivative financial instruments classified as fair value hedges (previous year: a loss of €3,505 thousand). Since the hedges have been classified as highly effective, measurement of the hedged transactions at the reporting date produced an offsetting gain/loss in the same amount.

There were no effects on profit or loss from ineffective hedges in the 2017/18 and 2016/17 fiscal years.

Changes in the value of derivative financial instruments that do not meet the requirements for hedge accounting under IAS 39 are recognized as income or expenses in profit or loss at the reporting date.

**Cash flow hedges:**
As at September 30, 2018, there were no cash flow hedges in place.

In the previous year, hedge relationships designed to hedge cash flows from forecast payment transactions for the note loan and forecast sales transactions were classified as highly effective. Accordingly, an unrealized gain of €2,375 thousand was recognized within consolidated equity in other reserves as at September 30, 2017.

In the 2017/18 fiscal year, hedged transactions of €1,873 thousand (previous year: €0) were realized over the course of the year under review by transfer of the relevant accumulated losses from other reserves to profit or loss.

### Research and development costs

In the 2017/18 fiscal year, research and development costs totaled €225,359 thousand (previous year: €217,162 thousand).

Of these, development costs of €12,862 thousand (previous year: €13,493 thousand) were capitalized in the balance sheet. The remaining costs represent activities for non-customer-specific new developments and improvements of €161,527 thousand (previous year: €146,724 thousand) and development activities for customer-specific contracts of €50,970 thousand (previous year: €56,945 thousand).

### Transactions with related parties and individuals

In the course of its ordinary business activities, Voith GmbH & Co. KGaA maintains relationships both with the subsidiaries listed in these consolidated financial statements and with other related companies and individuals (family members who are shareholders and members of the Supervisory Board and of the Board of Management).

In the 2007/08 fiscal year, one subsidiary of Voith GmbH (as it was known at the time) was sold to family shareholders in a transaction under common control. That company, JMV GmbH & Co. KG, Heidenheim, is now the ultimate parent company of the Voith Group.

All business transactions with related parties are conducted at arm’s length conditions.

Members of the Board of Management of Voith Management GmbH, members of the Supervisory Board of Voith GmbH & Co. KGaA and family member shareholders also serve on the supervisory boards of other companies with which Voith maintains relationships in the course of its ordinary business activities. Any transactions involving these companies are conducted at arm’s length conditions.

A total of €772 thousand (previous year: €1,311 thousand) was paid at customary market rates to members of the Supervisory Board and former members of the Board of Management for consulting and other services.

The majority of goods and service transactions with related parties (entities and individuals) are shown in the table below:

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Liabilities to family shareholders | 16,320 | 14,849 |
| Services purchased from associates | 1,447 | 1,075 |
| Services rendered to associates | 95 | 87 |
| Receivables from associates | 2,625 | 2,686 |
| Liabilities to associates | 718 | 625 |
| Services purchased from other investments | 4,146 | 3,749 |
| Services rendered to other investments | 12,947 | 11,470 |
| Receivables from other investments, including advances paid | 8,609 | 10,922 |
| Impairment of receivables from other investments | -1,723 | -1,412 |
| Liabilities to other investments and to Voith Management GmbH | 22,692 | 21,361 |
| Services purchased from joint ventures | 9,952 | 4,242 |
| Services rendered to joint ventures | 2,313 | 3,838 |
| Receivables from joint ventures | 15,208 | 9,539 |
| Liabilities to joint ventures | 741 | 2,808 |
| Services purchased from the ultimate parent company | 13,672 | 12,515 |
| Services rendered to the ultimate parent company | 1,246 | 1,107 |
| Receivables from the ultimate parent company | 333 | 208 |
| Liabilities to the ultimate parent company | 9,049 | 7,604 |

Liabilities to family shareholders include current floating-rate clearing accounts and pension obligations.

For more information on the profit participation rights of €103,400 thousand (previous year: €103,400 thousand) granted to family shareholders, please refer to note 19.

In the 2017/18 fiscal year, guarantees of €2,999 thousand (previous year: €1,146 thousand) were issued in favor of other investments.

The Group has obligations under outstanding orders with the ultimate parent amounting to €4,518 thousand (previous year: €4,330 thousand) and with joint ventures of €14,718 thousand (previous year: €31,777 thousand).

No capital increases were performed in favor of joint ventures (previous year: €9,623 thousand).

## Remuneration of governing bodies

The compensation for members of the Board of Management of Voith Management GmbH, including pension expenses, totaled €12,359 thousand in the fiscal year (previous year: €10,683 thousand). Due to the fact that these expenses are recharged by Voith Management GmbH to Voith GmbH & Co. KGaA they are presented in the Voith Group's consolidated statement of income wholly within personnel expenses. This amount includes short-term benefits totaling €11,248 thousand (previous year: €9,143 thousand) and post-employment benefits of €1,111 thousand (previous year: €1,540 thousand).

The compensation for members of the Board of Management under commercial law totaled €10,242 thousand (previous year: €8,853 thousand).

Following the transfer of the Corporate Board of Management to Voith Management GmbH effective as at September 30, 2017, the balance of pension obligations on that date was transferred from Voith GmbH & Co. KGaA to Voith Management GmbH at their fulfillment amount of €19,874 thousand (including deferred compensation amounts). Existing plan assets totaling €9,821 thousand as at September 30, 2017 was likewise transferred as part of this transaction. A remaining excess obligation of €12,265 thousand remains with Voith GmbH & Co. KGaA. The present value as at September 30, 2018 of the defined benefit obligations to the Corporate Board of Management at Voith Management GmbH amounted to €10,669 thousand (including entitlements from deferred compensation). There are plan assets totaling €2,489 thousand.

The present value of defined benefit obligations toward past members of the Board of Management totaled €78,774 thousand (previous year: €57,867 thousand). Of these amounts, €3,387 thousand (previous year: €3,504 thousand) relates to obligations on the part of the former parent of the Group, J.M. Voith SE & Co. KG (formerly: J.M. Voith GmbH & Co. Beteiligungen KG) toward past members of the Corporate Board of Management.

Plan assets for former members of the Board of Management total €34,128 thousand (previous year: €21,917 thousand).

These amounts are included in note 20.

The compensation for past members of the Board of Management totaled €4,850 thousand (previous year: €3,045 thousand). Of this amount, €561 thousand (previous year: €551 thousand) relate to compensation for the members of the Corporate Board of Management of the former parent of the Group, J.M. Voith SE & Co. KG (formerly: J.M. Voith GmbH & Co. Beteiligungen KG).

The members of the Supervisory Board of Voith GmbH & Co. KGaA received (short-term) compensation of €470 thousand (previous year: €555 thousand).

## Auditor's fees and services

The following fees (including reimbursement of expenses) were paid to the independent auditor for the services rendered in the 2017/18 fiscal year:

| in € thousands | 2017/18 | 2016/17 |
|---|---|---|
| Annual audit | 2,767 | 2,625 |
| Other assurance or valuation services | 10 | 42 |
| Tax advisory services | 1,737 | 165 |
| Other services | 15 | 49 |
| | **4,529** | **2,881** |

## Subsequent events

Dr. Hubert Lienhard left the Corporate Board of Management effective as of March 31, 2018. Mr. Stephan Schaller, who had been appointed to the Corporate Board of Management effective as of March 1, 2018 and President and CEO as of April 1, 2018, stepped down from his office on October 23, 2018. Dr. Toralf Haag was appointed President and CEO by the Shareholders' Committee with effect from October 23, 2018. Dr. Toralf Haag, a member of the Corporate Board of Management since October 2016 and responsible for finance and controlling, will initially retain his role as CFO and exercise both functions at the same time until further notice.

No additional significant developments have occurred since the close of the 2017/18 fiscal year.

Heidenheim an der Brenz, November 28, 2018

The Board of Management of Voith Management GmbH

Dr. Toralf Haag
Andreas Endters
Dr. Uwe Knotzer
Dr. Roland Münch
Uwe Wehnhardt

The German language consolidated financial statements of Voith GmbH & Co. KGaA as at September 30, 2018 as authorized for issue and the unqualified audit opinion issued thereon by KPMG Wirtschaftsprüfungsgesellschaft, Munich will be filed in German at the Bundesanzeiger (Federal German Gazette). They can be viewed at www.bundesanzeiger.de.

# Responsibility statement

To the best of our knowledge and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group management report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Heidenheim an der Brenz, November 28, 2018

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