

# 2022 Sustainability Report



# Sustainability Report 2022

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## Dear Readers,

Business and society are currently facing enormous challenges. The political and economic situation worldwide has rarely been characterized by so many crises and risks. The result is very tense supply chains, exorbitant energy prices, and deep uncertainty in the international commodity and capital markets. All these factors are driving a paradigm shift in politics, business, and society. Resilience and independence are increasingly becoming the decisive success factors when assessing companies' – and entire industries' – future viability.

At the same time, we dare not neglect the long-term challenges that impact us all and which we can only solve together. We must all embrace the task of limiting climate change and consuming resources as frugally as possible. We are committed to upholding human rights and ensuring fair, humane working conditions throughout our supply chains. In short, it is about nothing less than creating livable conditions for all people worldwide – today and in the future.

**“We use our technology expertise to show our customers ways to sustainably shape their own path as a company. In this way, Voith is positioning itself as a pioneer for the industry in the post-carbon age.”**

Dr. Toralf Haag 

This puts the spotlight on the principles that have always underpinned the commercial activity of a family-owned company such as Voith, with its business tradition stretching back over 155 years: sustainability and a responsible approach to business that measures its success not in quarter-years but in generations.

Sustainability is a core Voith value and industrial sustainability is our business model. We provide sustainable technologies for future generations by leveraging our technological know-how and showing our customers ways to sustainably shape their companies' own journey.

This aspiration drives our entire company, encompassing all our Group Divisions and markets. For instance, Voith Hydro is helping shape the future through hydropower and is thus making a key contribution to a stable, low-emission power supply worldwide. In the paper industry, Voith Paper is setting the standard in resource-saving paper production, while leveraging the necessary potential to minimize the CO<sub>2</sub> footprint of this industry through continuous research and development. Voith Turbo is supporting the climate-friendly mobility of the future with highly innovative and increasingly efficient drive systems and solutions. Through the acquisition of ELIN Motoren GmbH and our cooperations with international wind-turbine manufacturers we can now also offer wind-power solutions.

All of our Group Divisions are contributing to the progressive decarbonization of the industry through their sustainable products and services. Already today, using Voith products avoids more CO<sub>2</sub> emissions than they emit.

Meanwhile we are moving steadily forward on our own path towards even greater sustainability. Since 2022 we have been operating net climate-neutrally at all our locations worldwide, making us a global pioneer in mechanical and plant engineering. We have thus reached an important milestone in our Sustainability Strategy. Further major achievements will follow, as we strive to improve beyond net climate neutrality and work tirelessly to reach our environmental goals.

For many years now we have been progressively optimizing our sustainability performance on the basis of a comprehensive and ambitious program. Since 2011, when we published our first Sustainability Report, we have reduced Voith's overall energy consumption by 34 %, used 44 % less water and generated 38 % less waste. At the same time, we have made Voith one of the world's safest industrial groups: We see ourselves as a leading company in terms of occupational health and safety performance and are also pursuing ambitious goals here, because every accident at work is quite simply one too many.

The sustainable business activities detailed in this Report emphasize our desire to make a measurable contribution to the sustainable development of the economy and society. To achieve this we make our actions transparent and comprehensible through in-depth reporting. In parallel we continually put our sustainability performance on the testbench: For example, the independent rating agency ISS ESG rated Voith B- for the first time in 2021. This makes Voith one of the best performers in the mechanical and plant engineering sector worldwide. In 2022 we successfully reaffirmed our strong performance. As ratings such as these play an increasingly important role in banks' creditworthiness assessments, we also benefit financially from our commitment. In this way, our environmental and societal improvements lead to tangible economic benefits and spur us on to implement our goals consistently. This is the win-win that sustainable business activity is all about.

From the perspective of this understanding, we see Voith's current success merely as a yardstick for our future actions. Whether our contribution is sufficient in view of the challenges ahead will not be decided by us but by tomorrow's generations, as they will have to live with the consequences of our actions – in the truest sense of the word. We are particularly committed to them: Their judgement will benchmark the results of our sustainability commitment. We at Voith are doing our utmost to ensure that their verdict is positive.

The Report in front of you details our achievements over the past year. I wish you a stimulating and informative read!

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Toralf Haag', with a stylized flourish at the end.

Dr. Toralf Haag  
President and CEO



# 1. Strategy and integrity

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## 1.1 Our profile

The Voith Group is a globally active technology group. Through our broad portfolio of production plants, products, industrial services, and digital applications we set standards in the Energy, Paper, Raw Materials, and Transport & Automotive markets. At Voith we understand business success as a constant, long-term undertaking. From our company's very beginning, the way we conduct business has always been geared towards sustainable, profitable growth. Our shareholders, the Supervisory Board, and the Voith Corporate Board of Management are jointly committed to developing the company in an economically, environmentally, and socially sustainable way. Clearly defined values serve as our compass, and sustainability is one of them.

We develop sustainable technologies to preserve the fundamental viability of future generations. At the same time, we secure the long-term future of Voith by ensuring our stability and independence through profitable growth, thus reconciling our business success with our responsibility towards society and the environment.

### Overview of the Group

Voith is represented worldwide through locations in over 60 countries and maintains a comprehensive network of production, service, and sales units on every continent. Voith GmbH & Co. KGaA, headquartered in Heidenheim an der Brenz, Germany, is the operative management holding company as well as the parent company of the Group; the Group's core corporate functions are also concentrated within it. The Corporate Board of Management of Voith Management GmbH is responsible for the strategic and operational management of the Voith Group. Voith Management GmbH, which like Voith GmbH & Co. KGaA is 100% family-owned, manages the businesses of Voith GmbH & Co. KGaA. The Corporate Board of Management of Voith Management GmbH is appointed by the Shareholders' Committee of Voith GmbH & Co. KGaA as the personally liable shareholder. The Supervisory Board is the supervisory body of Voith GmbH & Co. KGaA.

Voith's operating business is organized into three Group Divisions:

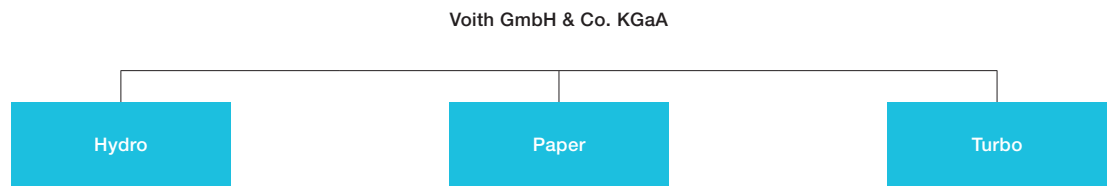
The Group Division Hydro is a leading full-line supplier and reliable partner for equipping hydropower plants. It develops customized, long-term solutions and services covering the entire plant lifecycle and all major components for large and small hydropower plants.

The Group Division Paper is a leading full-line supplier as well as a pioneer in the paper industry. Thanks to constant innovation, Voith Paper continually optimizes its paper production process and enables resource-saving, efficient production.



The Group Division Turbo specializes in intelligent drive technology, systems, and tailored service solutions. Voith Turbo’s innovative and smart products provide maximum efficiency and reliability. Customers from numerous sectors such as oil & gas, energy, mining and mechanical engineering, marine technology, rail and commercial vehicles rely on Voith’s cutting-edge technologies and digital solutions.

**Organizational structure**  
 Voith Group Divisions



**Management system**

The key financial performance indicators used by the Voith Group are the development of orders received and sales revenue, as well as EBIT (Earnings before Interest and Taxes) and ROCE (Return on Capital Employed).

**Business development in 2021/22**

The Voith Group looks back on a particularly challenging 2021/22 fiscal year. The war in Ukraine triggered a political and economic shock in early 2022, which severely slowed the global economic recovery after the global recession triggered by the pandemic in 2020. Global supply chain disruptions and bottlenecks in the supply of raw materials, materials, and intermediate products worsened. In China, renewed far-reaching lockdowns in key ports and production centers in spring 2022 imposed as part of the country’s Zero-Covid strategy aggravated the situation. The war-related rise in energy, raw materials, and food prices further fueled already steep inflation caused by existing supply shortages.

Orders booked rose by 3 % relative to the previous year’s very high figure to reach € 5.2 billion. Group sales rose by 15 % to € 4.9 billion (previous year: € 4.3 billion).

EBIT rose by 21 % year-on-year, in line with our forecast. Return on sales (4.1 %, previous year: 3.9 %) and ROCE (10.5 %, previous year: 9.6 %, adjusted) showed corresponding increases. While the cost of materials ratio rose due to partly massive material price increases resulting from intensified supply chain problems and general inflation, the increase in other cost items was limited by efficiency enhancement measures and strict spending discipline. Overall, we succeeded in significantly increasing our operating result. Group net income after taxes was € 30 million, also above the previous year’s level (previous year: € 1 million).



**Fact base**  
Economic indicators,  
International focus



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The Voith Group's asset and financial situation remains very sound. Net liquidity remains at a good level, even after the high level of corporate acquisition activity: As at the balance sheet date, this amounted to € -233 million (previous year: € -5 million).

In the 2021/22 fiscal year Voith invested a total of € 143 million in property, plant and equipment, and intangible assets (previous year: € 133 million). The investment ratio, as a percentage of Group sales, was 2.9% in the reporting year (previous year: 3.1 %).

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### **Independence of members of the Supervisory Board and Shareholders' Committee**

The Supervisory Board of Voith GmbH & Co. KGaA is constituted in accordance with the German Codetermination Act. Accordingly, six of the total of twelve members represent the shareholders, and six represent the employees.

Voith follows the recommendations of the German Corporate Governance Code (Deutscher Corporate Governance Kodex, DCGK). This defines a member of a Supervisory Board as independent "if they have no personal or business relationship with the company or its Management Board that may cause a substantial – and not merely temporary – conflict of interest" (DCGK as at April 28, 2022, Recommendation C. 7). In accordance with the regulations set out in the Code, this does not apply to the employee representatives: As employees, they are at least partly subject to the Board of Management's right to direct and, in accordance with German law, they are explicitly elected to represent the interests of the employees on the Supervisory Board.

On the basis of these regulations, four of the six members of the Supervisory Board who represent the shareholders of Voith GmbH & Co. KGaA are currently to be regarded as independent. The two non-independent members are members of the Management Board of the general partner of a controlling shareholder.

In accordance with Recommendation C. 10 of the German Corporate Governance Code, the Chair of the Supervisory Board is independent, as are the Chairs of the Audit Committee and the Nomination Committee.

Under the terms of the Articles of Association, an external member must always chair the Shareholders' Committee of Voith Management GmbH; the Chair of the Shareholders' Committee usually also chairs the Supervisory Board. An "external member" in the abovementioned sense is a person who is neither a direct nor an indirect shareholder of the company, nor the legal representative nor spouse of direct or indirect shareholders of the company, nor the legal representative of companies that are associated with direct or indirect shareholders of the company within the meaning of Section 15 of the German Stock Corporation Act (Aktiengesetz, AktG). Furthermore, external members should be individuals particularly well suited to this office by virtue of their position and skills, preferably with a proven record in company leadership.

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## 1.2 Sustainability strategy and organization

### Sustainability as a core objective

Sustainability is one of our fundamental corporate values. The commitment to environmentally and socially responsible, fair and long-term successful business has its roots in the tradition of the family-owned company Voith. In this tradition we have further developed our understanding of sustainability in recent years. Sustainability not only determines the way we act as a company; more than ever, our understanding also comprises Voith's use of technological innovations to help transform the industrial sector towards climate neutrality and resource conservation. At the same time, Voith contributes to ensuring economic prosperity and thus social stability. Our strategic focus on sustainable technologies sets the course for the further development of our product portfolio in our existing core business, as well as for our investments in new business areas and markets. In short, industrial sustainability is our business model. This way Voith is making a decisive contribution to a climate-neutral, decarbonized industrial society and at the same time securing our company's growth.

Based on our broad technological expertise and deep knowledge of our markets, we intend to become a driving force and co-creator of a decarbonized industry in the digital age. At the same time, we want to support our customers in attaining their own sustainability and climate objectives. This gives rise to a clear strategic claim: We want to take one of the top three positions in each of our Divisions' respective industrial sectors. In this effort, our four strategic pillars provide the foundation for Voith's long-term, profitable growth.

We systematically implement our Sustainability Strategy within this overall context. We have defined five fields of action to enable successful implementation: sustainable corporate governance, responsibility for our products, our supply chain, the environment, and our employees. As we do this we want to make a demonstrable contribution to the sustainable development of the company, society, and the environment and set industry-wide sustainability standards. In our core business today we are already addressing the global megatrends of digitization and decarbonization through our continual further development of hydropower as a renewable energy source, resource-saving paper production, and in the development of alternative drive technologies.

Our sustainability performance is recognized in numerous ratings and rankings. One example is the rating by the independent agency Institutional Shareholder Services (ISS) in the area of Environmental, Social, and Corporate Governance (ESG). ISS currently analyzes the sustainability performance of around 5,000 companies worldwide: The assessment is made on the basis of a twelve-point grading system, from A+ (excellent performance) to D- (poor performance, or lacking sufficient transparency for a performance evaluation). Furthermore, the best companies in a business sector achieve Prime status; Voith has held this status since 2018. For the fifth year in a row this makes Voith one of the leading companies in the mechanical and plant engineering sector worldwide. In 2021 our company was rated B- by ISS for the first time and successfully achieved the B- rating again in 2022. This excellent rating confirms the effectiveness of our Sustainability Strategy and at the same time is a strong incentive to consistently drive our engagement forward. Furthermore, the rating provides us with orientation for the further development of our Sustainability Strategy. As banks increasingly link their credit conditions to companies' sustainability performance, an excellent sustainability rating also enables us to lower our financing costs, making our sustainability commitment clear financial common sense for us.



## High-performance sustainability organization

At Voith we understand sustainability as a cross-company task that is supported by the Corporate Board of Management as well as the corporate functions and Group Divisions, thus permeating the entire organization. The central function Corporate Sustainability agrees the framework for Voith's strategic focus on how we organize sustainability; it reports directly to the Group President and CEO, and defines the necessary tools and methods used within our Group to measure and steer our sustainability activities; these include our sustainability database and associated reporting tools. Together with the specialist departments, the Sustainability Department works out strategies and measures to raise Voith's sustainability performance and monitors their implementation. It is also responsible for internal and external reporting, and for the coordination of sustainability-related communication tasks. As the central sustainability organ, Corporate Sustainability is responsible for Strategic Sustainability Management as well as Ecological Business Management (EBM) and decarbonization.

Our company's explicit goal is to make continuous and demonstrable improvements in the areas of environmental, social, and corporate governance to create economic value for the company. We measure the success of our activities primarily by means of the KPIs underpinning the ISS ESG rating as well as the company-internal target figures and target horizons of our respective specialist departments. In this way, we emphasize the fact-based approach of our actions. Against this backdrop, the central function Corporate Sustainability evaluated the results of the stakeholder dialog and carried out a detailed positioning exercise based on benchmark and best practice analyses of Voith in the area of sustainability; this also took into account the regulatory changes adopted in the year under review. The corresponding optimization potentials within the five strategic fields of action were then identified in workshops with the specialist departments. We enable the greatest possible transparency through the regular communication of our objectives and activities in these fields of action and the thorough documentation of our progress.

In view of the strategic importance of sustainability, the Sustainability team became part of the central Corporate Development function in September 2022. It works together with the Group Divisions and other Group functions on strategic topics, M&A projects, and sustainability initiatives.

## Transparent communication on sustainability topics

Transparent communication towards both internal and external stakeholders is vitally important to us. To inform Voith employees as well as the broader public about our sustainability efforts and raise their awareness, we increasingly use online communication channels as well as social media to give all our stakeholders the opportunity for open dialog. In addition, in 2021 we implemented an extensive campaign on the topic of sustainability, providing information about our activities and goals not only to our employees but also to external key stakeholder groups.


Voith also continued this campaign in 2022, taking a stand on the vital topic of climate protection and the urgency of limiting global warming effectively. We informed our external stakeholders about the background to Voith's decarbonization strategy through interviews with sustainability experts and various articles on our company website and in external media. In parallel we communicated the respective content to our employees all over the world via internal media including intranets and written bulletins.

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Managing Sustainability – balancing a perfect world and business success

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Net Zero – decarbonization in industry

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Fact base  
Employee  
sustainability training

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Our workforce shows a very good response to internal reports on sustainability topics compared to other topics – this is particularly evident in their predominantly positive and constructive comments on the corresponding intranet news items.

## Harnessing opportunities for sustainable development

Opportunities are identified as we develop our business strategy. We follow a holistic approach, taking into account as many as possible of the prospective influences that are relevant to our business. This approach is based on an extensive study of megatrends; as one of these, climate change and climate protection deeply impacts society, global markets, and the physical world on many different levels. Against this backdrop, in 2018 Voith conducted a Technology Foresight Project to ensure the company is equipped to deal with long-term challenges, particularly with regard to sustainability topics. In the process, future scenarios were developed for all areas of the company up to the year 2040. From these scenarios, we derived strategic objectives for 2025 and up to 2040. Based on a gap analysis, we defined fields of action for these objectives, and from these in turn we developed technology roadmaps for the business areas. These roadmaps resulted in specific workstreams and tasks which are to be tracked. The Group Divisions are developing new concepts based on the findings of the Foresight Project and increasingly acute climate issues.



Chapter Products  
and Supply Chains

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## Targeted risk management

To safeguard the company against risks that could threaten the existence of the Group or its companies, risk management is mandatory across the Group. Voith's Risk Management is organized on a decentralized basis; nevertheless, it is centrally monitored and coordinated. As part of this, potential climate and environmental risks are assessed and communicated within the company. The basis for this is a procedure for identifying, assessing, and responding to risks and opportunities, which is integrated into the multidisciplinary company-wide risk management process. With regard to the probability of occurrence and extent of damage, potential climate and environmental risks can also be broken down into risk classes.

The starting point for the process of risk identification is the Voith Risk Catalog. Each of the respective levels of the company (Operating Unit, Division, and Group) must analyze every risk area and identify whether there are potential risks. A list with definitions of the risk areas and relevant examples can be found in the Risk Assessment tool. The time horizon of the respective risks is also included in the analysis.

Risk monitoring is a three-part process. It begins with regular and continuous risk monitoring by the Risk Manager, who must ensure that all risks are fully identified and assessed according to a uniform standard. The Risk Manager must also regularly monitor the implementation of the corresponding measures. In the second step of the process, every risk that has been identified and assessed is responded to on the basis of the respective risk owner's defined risk strategy. Last but not least, in the third step of the process, every level of the company must regularly report on its current risk situation.



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## Intensive stakeholder dialog

Maintaining ongoing dialog with stakeholders is vital for a global group such as Voith and we have pursued this for many years. Our key stakeholder groups include our shareholders, supervisory committees, rating agencies, employees, the Works Council, customers, suppliers, investors, communities neighboring our company sites, industry associations, academia, government agencies, and policymakers. We also focus on NGOs such as the World Wide Fund for Nature (WWF) as well as the broader interested public.

## Stakeholder survey and materiality analysis

Our evaluation of the materiality of sustainability topics is largely based on the results of the 2018 stakeholder survey. This has since been continuously updated and adjusted on the basis of direct dialog with and feedback from our stakeholders, particularly employees, customers, and industry associations. The stakeholder dialog 2018/19 also included an impact analysis: According to this, Voith has the greatest impact on the economy, society, and environment in the Products (30%), Sustainable Corporate Governance (24%), Employees (21%), Environment (15%), and Supply Chain (10%) fields of action.

For the 2022/23 fiscal year we have set ourselves the goal of updating our materiality analysis as part of a broader structured analysis.

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### Stakeholder survey results

The three key aspects per field of action:

#### Sustainable corporate governance

1. Legally compliant, value-aligned company management
2. Long-term oriented business development
3. Transparency regarding business practices

#### Environment

1. Efficient use of resources
2. Reduction in greenhouse gas emissions
3. Minimizing environmental impacts

#### Employees

1. Strategic personnel development and further training
2. Ensuring safe working conditions
3. Promoting work-life balance

#### Products

1. Innovative, high-quality products and services
2. Product resource efficiency
3. Partnership-based collaboration with customers on product development

### Supply chain

1. Building and maintaining cooperative long-term supplier relationships
  2. Securing market-superior quality, service, and profitability
  3. Controlling mechanisms for compliance with laws as well as environmental and social standards in the supply chain
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## 1.3 Values and compliance

### How we see ourselves

Voith unites the tradition of a family-owned company with the needs and culture of a global Group. Clear values define the way we conduct our business: We are ambitious, innovative, reliable, fair, and sustainable. Our values and the guidelines we derive from them help ensure that Voith acts in alignment with a unified set of business principles worldwide and lives consistently by this philosophy.

- **Ambitious:** We embrace challenges and set ambitious goals that enable us to continuously grow both as individuals and as an organization.
- **Innovative:** We want to turn ambitious ideas into innovative technology. To do so, we listen attentively, examine ideas closely, and think outside the box. This way we experience firsthand the way the world and our customers are changing, create solutions that add value, and set new standards in our markets.
- **Reliable:** As Voith employees we constantly strive to deserve the trust of our customers and partners by only making promises we can keep. This enables us to build productive, long-term relationships.
- **Fair:** In every interaction with all our stakeholder groups we show respect, sincerity, honesty, and modesty. This is not a question of mere compliance with rules and regulations, but constitutes our underlying philosophy.
- **Sustainable:** We are mindful of our responsibility to society and the environment in everything we do. Through our technical innovations we want to contribute to global growth and prosperity. As a family-owned company, we strive for lasting financial independence.

### The Compliance organization at Voith

The Voith Compliance Committee establishes, further develops, and coordinates our Compliance Program, revises compliance regulations, and coordinates relevant training. This committee meets monthly and comprises the Head of Group Legal Affairs (Chair) as well as the respective Heads of Group Human Resources Management and Group Audit. The Voith Compliance Committee Chair reports directly to the Corporate Board of Management of Voith GmbH & Co. KGaA and to the Audit Committee of the Supervisory Board. The CFOs of the Group Divisions serve as the Compliance Officers in their units. In addition, there are Compliance Officers in every Group company; usually the CFOs assume this function in personal union. Depending on the number of locations and operating units the respective Group company maintains, several individuals may also hold this role jointly to ensure that the Compliance Officers are as close as possible to the operating business. Within their area of responsibility, the Compliance Officers are responsible for implementing Voith's Code of Conduct (CoC) and also serve as points of contact. This is also aligned with the rest of our Risk Management organization.

## Code of Conduct binding for all employees

As early as 1927, Voith committed to the following business principles: “In the business world one must be ethical, decent, and honest. If a contracting party or competitor behaves unfairly, this does not give us the right to deviate from this principle.” These principles still govern the way we conduct business today. The Voith Code of Conduct defines the way we act towards customers and business partners, as well as how our employees behave towards one another within the company. It sets out clear standards that are aligned with established external charters and principles. In the 2020/21 fiscal year we revised our CoC; as a result, new content was incorporated into the Code, which entered into force on publication in October 2021. With 25 language versions available online, all of the major markets and countries of relevance to Voith are covered.



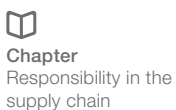
The key principles include:

- Full compliance with the rules of fair competition
- No anti-competitive agreements
- No corruption or bribery, neither offering, granting, or demanding bribes, or accepting unfair advantages
- Transparency on donations and sponsorship
- No undue preferential treatment of certain suppliers and service providers
- Legally compliant behavior, in particular the rejection of money-laundering and full compliance with statutory regulations in import and export controls as well as taxation obligations
- Upholding human rights, fair working conditions, and rejecting child and forced labor
- Avoiding conflicts of interest
- Safeguarding our own patents, corporate intellectual property and business secrets, and respecting those of other organizations
- Responsible handling of information, in particular regarding confidentiality, data privacy and protection, insider knowledge, and due reporting obligations
- Protecting the lives and health of our employees, protecting the environment, and doing business sustainably
- High quality standards for our products and the qualification of our employees
- Respectful interaction, tolerance and upholding equal opportunity

The Code of Conduct provides specific information on correct conduct and points of contact. By signing their employment contract, all Voith employees confirm that they have taken note of the Code. In so doing, they commit to complying fully with prevailing legislation and the internal regulations in force at Voith – right across our global Group and at all hierarchical levels. Breaches are met with disciplinary measures. We constantly update our rules and procedures, and adapt them to meet current requirements.



Together with our General Purchasing Conditions (GPC), the Code of Conduct defines Voith’s understanding of partnership-based collaboration with our suppliers; in parallel it sets out the guidelines on dealing with compliance issues as well as environmental and social standards in Voith’s supply chain. The Code of Conduct is reflected in our GPC and is an integral part of our business relationships with suppliers, representatives, and sales consultants.





## Regular training on compliance topics

All Voith employees with personal access to the company IT network are required to update their knowledge of compliance issues and our Code of Conduct via our e-learning programs every three years. Through their successful participation, employees also document that they are fully aware of our Code of Conduct and have understood the corresponding regulations. Program participants are tested on the information they receive during instruction, to ensure they have absorbed and understood it fully. Approximately 98 % of our employees with a computer workstation have completed our programs on Anti-Corruption and Antitrust Law, as well as on Leadership and Employees. Employees who do not have a computer workstation are trained by their line manager to ensure their knowledge stays up to date.

A Group Directive also stipulates that shortly after their appointment all Compliance Officers receive centralized training from members of the Compliance Committee, among others. In addition, all managers at the top six management levels are centrally prepared for compliance-specific tasks in a one-day training course. From the 2022/23 fiscal year, Compliance Officers must repeat this training course at least every five years.

Additionally, employees who require special compliance expertise for their specific working area also receive focused compliance training. In particular, Voith Group Purchasing and Sales employees are the target group and employees from these areas are required to participate once in a “Compliance at Voith” training course. These central events are organized by the Training Departments of the four regions EMEA, APAC, and North and South America. The training course is led by a member of the Voith Law Group and a Compliance Officer. Until the outbreak of the Corona pandemic, the events were always held face-to-face and lasted one working day. Voith currently holds this course primarily as online training, which is offered on three consecutive days (in the morning and afternoon) and is divided into three modules. The duration of the three sessions was initially set at 90 minutes, but was extended in summer 2022 to 120 minutes including a break of 15 minutes, following experience gathered with the new online format.

As part of the central “Compliance at Voith” training course, participants are introduced to the topic of Compliance at Voith. In addition, the topics of Fraud, Corruption Prevention, and Antitrust are specifically addressed; participants also receive instruction on Forced Labor and Human Trafficking as well as correct conduct during inspections and investigations. After successful participation, employees in these areas must update their knowledge every three years in an e-training course that integrates numerous case studies. In addition, decentralized compliance training courses are carried out in Accounting and Master Data Management, as there are also specific compliance risks when approving invoices or changing bank details, for example. These courses are conducted by the Heads of the Accounting Departments in the GBS (Global Business Services) Divisions of EMEA, APAC, and North and South America, as well by as the management of the Master Data Management Department. While the decentralized courses in Accounting do not follow a prescribed cycle, the training courses in Master Data Management take place on a regular schedule.

In the reporting year we continued to hold regular face-to-face and online training on Compliance topics, which are assigned automatically to managers and employees in the Sales and Purchasing Areas. 372 employees, mainly Sales and Purchasing managers and staff, took part in 18 training events (previous year: 20 events, with 364 participants).



## Continual compliance reviews guarantee effectiveness

The Group Internal Audit Department examines observance of all compliance regulations in a routine risk assessment involving around 35 operating units annually. To ensure their full compliance we issue our business partners with clear regulations and require them to submit a Supplier Self-Assessment. In addition, all Sales agents and sales-oriented consultants are tested at the start and at regular intervals in the course of the business relationship. The audit covers topics such as corruption, money laundering, and violations of foreign trade law. Amongst other sources, it draws its comparative information from the database of an external service provider that systematically evaluates numerous sources globally. Information about (criminal) convictions and sanctions imposed, such as blacklisting, are also available via the database. A Group Directive makes auditing Sales agents and sales-oriented consultants mandatory. We work continually to optimize our Compliance organization and adapt it to meet new standards and requirements.

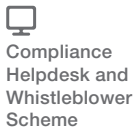
## No compromise against corruption

Voith does not tolerate any form of corruption or bribery. The Voith Code of Conduct explicitly stipulates that our business partners' decisions may under no circumstances be influenced by gifts or invitations. Gifts show our appreciation for our business partners; however, they are only permitted if they comply with the rules of general courtesy and the accepted business traditions in the respective cultural environment. Furthermore, such gifts must not be suited, due to their value or other aspects, to influencing the actions or decisions of the recipient, or to place the recipient under any form of reciprocal obligation. The value limit for gifts is defined in the Group Directive "Gifts, Hospitality, Events". Gifts of money are strictly forbidden. All other forms of remuneration by Voith must also be appropriate and comprehensible in terms of reason and amount. In accordance with this principle, Voith employees may only accept occasional gifts of low material value.

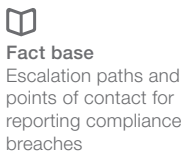
To ensure a consistent approach to combatting corruption and other illegal or sanctionable behavior, all Compliance Officers are required to maintain a clearly defined Risk Control Matrix that includes potential corruption risks for their specific Group unit, and to name and assess the identified risks. This structured process covers all Voith locations worldwide; newly acquired companies are integrated in this system as soon as possible. The results of all Group Divisions are aggregated and form the basis of centralized risk monitoring and internal compliance audits, among other measures. Our risk assessment is based on many factors, including the Corruption Perceptions Index (CPI) published annually by Transparency International. As our company maintains business relationships all over the world, special precautionary measures apply to high-risk countries, whereby the respective Risk Manager responsible decides on the most appropriate measures. In addition, Purchasing conducts an integrity check when a new creditor with a purchasing volume of more than € 25,000 is created. At the same time, checks are carried out with the aid of publicly available data to determine whether compliance incidents have occurred in the past, for example regarding fraud, corruption, or cases of child labor.

## Group-wide complaints procedure and whistleblower system

Any stakeholder, naturally including our own employees, can report complaints to Voith or notify us of abuse or breaches of the Voith Code of Conduct. They are free to report these instances to a variety of



points of contact: their direct line manager, the respective HR representative, the Compliance Officer of their Group company, operating unit or Division, any member of the Compliance Committee, as well as via any one of the five Group-wide Compliance Helpdesks. Staffed by local multilingual contacts and present in all the key Voith regions – APAC North and South America as well as EMEA with Austria and Germany – this system is available to both internal and external whistleblowers. Details on how to get in touch with these points of contact are provided to employees in an appropriate way throughout the Group, including via the Compliance intranet page. The Compliance Helpdesk and the Whistleblower Scheme are also available to all stakeholders via the Voith website.



An employee who reports a suspected breach of the Code of Conduct in good faith and on the basis of firm evidence will not suffer any detriment whatsoever; this right is laid down in our Code of Conduct. If necessary, Voith will take measures in each individual case to protect the employee reporting the suspected breach against any such detriment, for example in relation to career progression or bullying in the workplace. To the extent possible and permissible under law, Voith will maintain confidentiality regarding the identity of employees reporting a breach of the Code of Conduct or a suspected breach of its guidelines. The same applies to the identity of employees investigating such a breach or suspected breach. We also follow up on complaints submitted anonymously via our Group-wide Whistleblower Scheme, with the number and type of breaches documented centrally. This whistleblower system can also be accessed by external parties at any time via our company website and is thus also available to all our business partners and suppliers. Any type of complaint on any subject can be reported. Confidentiality and anonymity are granted if this is desired and legally permissible. As a matter of principle, to ensure the strictest confidentiality is maintained, information concerning the number, type, and nature of complaints is not disclosed to external parties.

## Settlement agreement reached with the World Bank

In the 2021/22 fiscal year, Voith Hydro entered into a settlement agreement with the World Bank on bringing to a conclusion proceedings against two companies in the Group Division that had been running since 2018 and were already addressed in the consolidated financial statements in past years. These proceedings centered on infringements by individual managerial employees of Voith Hydro Shanghai Ltd. and Voith Hydro GmbH & Co. KG of World Bank regulations and compliance regulations in place throughout the Voith Group in connection with two projects financed by the World Bank in Asia and Africa over the period between 2012 and 2016. Voith is giving highest priority to investigating these incidents. For this reason, the company is cooperating fully with the World Bank and is actively assisting the investigation on-site. Alongside the temporary debarment of two Voith Hydro subsidiaries from projects financed by the World Bank, the settlement agreement also included Voith making a settlement payment to the countries concerned. Immediately after the incidents became known, Voith took the necessary personnel-related measures and furthermore began working in collaboration with an internationally renowned compliance expert to tighten the already very strict compliance rules throughout the entire company.

## Confidential treatment of information

Information security and the protection of personal data are a top priority at Voith. Both topics are governed by corresponding Group Directives. Our employees are expected to show appropriate

awareness of security and a sense of responsibility. There were no notifiable breaches of data security in the reporting period. The processes implemented at our Data Center in Heidenheim are certified according to the international standard ISO/IEC 27001.

## Human rights

As a global Group, Voith upholds human rights as a matter of course. The framework for this is set out in the Voith Code of Conduct, which as a Group Directive is binding for all employees. Voith rejects all and any forms of human trafficking, forced labor, and child labor and has issued a corresponding Declaration in accordance with the UK Modern Slavery Act 2015, the UN Universal Declaration of Human Rights 1948, the California Transparency in Supply Chains Act 2010, and the Australian Modern Slavery Act 2018. This Declaration is freely available on the company website. Through our General Purchasing Conditions we also ensure that our suppliers and business partners are involved in upholding human rights. As part of this, we incorporate the assessments of our internal management systems, such as the Risk Country List, into our planning of measures. If a supplier violates these rules, we reserve the right to terminate the business relationship.



Management Board  
declaration on  
human trafficking,  
forced labor and  
child labor

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In June 2021, the German Federal Parliament and Council passed the Act on Corporate Due Diligence in Supply Chains (Lieferkettensorgfaltspflichtengesetz, LkSG). It obligates companies with headquarters or affiliates in Germany to fulfill specifically defined, statutory human rights and environmental due diligence requirements and to anchor appropriate measures in their supply chains and their own operations. The due diligence obligations comprise establishing an integrated risk management system and implementing concrete preventive and remedial measures. For example, this includes setting up a reporting and complaints system and a regular reporting process.



Chapter  
Responsibility in the  
supply chain

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Voith will rigorously implement the requirements of the law, which comes into force in January 2023. To prepare and analyze the necessary steps, a task force comprised of experts from various specialist areas including Purchasing, Compliance, Quality, HR, and Sustainability was set up in fiscal year 2021/22.

## Taxation compliance

At Voith we see compliance with all statutory taxation requirements and fulfilling our tax obligations as a matter of course. This claim is also anchored in our Code of Conduct. Our Group's taxation strategy is aligned with our company's values and commits us to cooperating with tax authorities in a fair and transparent manner.

Voith has implemented a Tax Compliance management system that it adjusts continually to meet evolving statutory processes and taxation framework requirements, as well as in response to changes in further internal and external factors. Transfer prices within the company are always based on the "arm's length" principle and are lawful; this is clearly regulated in our Group's corresponding Directives. Voith follows the OECD standard and avoids implementing artificial structures purely for tax purposes.

As a globally active company, Voith is subject to the tax laws of numerous countries. We see it as a matter of course to comply with tax obligations within the framework of the applicable laws, thereby also living up to the company's commitment to good corporate citizenship. The central Voith Tax



Department has global policy authority with the aim of ensuring full tax compliance across the Group. Voith has no subsidiaries in countries that are on the EU list of non-cooperative jurisdictions for tax purposes. A complete list of the Group's companies and the countries in which it operates is set out in Voith's consolidated financial statements, in which Voith also reports in detail on its respective tax positions, in line with the requirements of the International Financial Reporting Standards (IFRS). These tax-related statements are audited within the process of producing the Group's consolidated financial statements.

## 1.4 Responsibility for society

"Sustainable technologies for future generations" is Voith's DNA. This also means that our company assumes its responsibilities as a good corporate citizen. We aim to actively shape the environment in which we operate as a Group and this is why we are also involved in donations and sponsorship. We are particularly concerned with promoting science and research in the field of sustainable technologies, as well as with the education and training of children, adolescents, and young adults. In promoting sports and culture we are mainly involved in the locations where Voith has deep roots, thus contributing to an attractive living environment for our employees and their families.



Many of our employees are also privately involved in projects that are particularly important to them personally. As part of the #VoithCares campaign, the company supports this commitment financially and promotes projects worldwide in the following focus areas: digitalization, technology, innovation, decarbonization, and societal issues.

### Clear organizational anchoring of our engagement – Group Directive sets the framework

Our societal engagement is managed by Voith GmbH & Co. KGaA, headquartered in Heidenheim. Within the company, responsibility for Donations and Sponsorship is coordinated by Group Corporate Communications. Ever since 2008, our Group Directive on Donations and Sponsorship has set out the type and scope of our commitment and regulates the governing financial framework. Through this approach we ensure that our donations and sponsorship expenditure is carried out in compliance with statutory requirements, strengthens our company's reputation, and contributes to the positive positioning of our corporate brand.

Our key funding areas are structured as follows:

- Education, training (supporting future generations)
- Science and research (promoting sustainable innovations and technologies)
- Events relating to our Group Divisions (such as trade fairs and conferences)
- Social affairs (supporting disadvantaged social groups and social institutions)
- Sport, the arts, and culture (only in relation to the company's local involvement at Voith locations worldwide)

The Group Directive also sets clear guidelines for the selection of projects for support. For approval, all donations require strict compliance with the Voith Code of Conduct and the applicable laws. In addition, they must be compatible with Voith's DNA, corporate values, and corporate culture, with the focus on

regional projects close to our respective locations around the world. The Group Directive forbids donations to political parties, comparable party-political organizations, and sponsorship of the activities of such parties and organizations. Donations to private individuals are also excluded. In addition, the Group Directive prescribes a clear approval process for donations and sponsorships.


Unless otherwise determined by the Corporate Board of Management, Voith's Donations and Sponsorship budget is based on the previous year's Earnings Before Tax (EBT). In the reporting year this was limited to a maximum of 1 % of EBT. Internal controlling systems log and monitor our Donations and Sponsorship activities, worldwide and across all Voith business units.

The Head of Corporate Communications informs the Corporate Board of Management once a year regarding the use of Donations and Sponsorship funds throughout the Voith Group. Individual Group Divisions or local Voith companies can also launch and carry out their own support and promotion projects, provided that these comply with the requirements of the Group Directive Donations and Sponsorship and have been endorsed in the approval process specified therein.

## Creating transparency: Entry in the German Federal Parliament Lobby Register

We always consider our activities as a company within the context of social developments. We participate in public debates and contribute our expertise to political decision-making. We are convinced that our specialist knowledge can make an important contribution to meeting the current and future challenges facing our society in the most positive way. What is more, we want to ensure that the legitimate interests and views of our stakeholders are represented in political and social dialog.

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 **Fact base**  
Membership of  
associations

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Based on this understanding, we want to enable a comparison of opinions and positions through the focused transfer of knowledge into politics, thereby supporting the practical implementation of projects and laws. Voith carries out these tasks through its memberships in industry associations and other interest groups. In addition, we foster a direct exchange with multipliers.

Voith defines its corporate values and clear rules of conduct in its Code of Conduct; these include avoiding conflicts of interest as well as preventing and fighting corruption. All employees are obliged to comply with this Code and will be held responsible for violations of its principles.

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 **Entry in the Lobby Register of the German Federal Parliament**

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The entry in the public Lobby Register of the German Federal Parliament clearly names those Voith employees entrusted with representing its interests, the respective interests themselves, Voith's projects, and the ways in which Voith represents its own interests. In addition, the Lobby Register also creates transparency on donations or subsidies from the public sector and donations by third parties. In fiscal year 2021/22, Voith received neither grants nor gifts worth more than € 20,000.

The Hanns Voith Foundation supports a variety of initiatives and projects. Through its activities, this independent foundation regularly engages in numerous local and cross-regional initiatives, and also provides financial support in the form of annual donations to various projects. The Hanns Voith Foundation also supports the #VoithCares program as well as further projects initiated by employees, for instance in Brazil or China.



## The Hanns Voith Foundation

Success in business carries an obligation and the Voith family has always understood this. Alongside the needs of our customers, employees' welfare and responsibility to society have always been close to the Voith family's heart. As a result, Dr. Hanns Voith (1885 – 1971), who headed the company for almost 60 years, played a major part in the company's societal engagement. Founded in 1953 to institutionalize community involvement within the company, the independent and not-for-profit Hanns Voith Foundation continues Dr. Voith's extensive engagement today.

The Hanns Voith Foundation has been an important instrument ever since in enabling Voith's shareholders and the Voith Group to demonstrate their responsibility to society and employees in the areas of social, educational, and cultural policy. The Foundation supports projects in training and education, science and research, as well as in culture and the environment. It also promotes measures that support international understanding and developmental aid, as well as projects based on the teachings of Rudolf Steiner and related initiatives.

For instance, the Hanns Voith Foundation supports the training and education of underprivileged and talented young people from the Heidenheim area as well as underprivileged and talented employees of Voith Group companies and their children. This includes contributions to enable them to study and graduate at universities and technical colleges in the sciences, engineering, and economics.



**Fact base**  
Donations and sponsorship, Hanns Voith Foundation donations and sponsorship, Financial contributions to political organizations

## Our engagement activities in the reporting period

In the reporting year we invested around € 2.79 million in societal engagement activities (previous year: € 1.98 million). Of this, we provided € 1.51 million in the form of donations, of which € 1.3 million were cash donations and € 0.22 million were in-kind donations. € 1.28 million was used for sponsorship measures. We spent the greatest share on 65 education projects (39 %) and 50 social projects (30 %), followed by 28 sports projects (17 %) and 25 cultural projects (14 %).

## Engaging for sports with a local focus

We believe that supporting local initiatives is an investment in the attractiveness of the region, which benefits the region's citizens and naturally also our employees. Through this, we intend to increase the attractiveness of the location for our employees and make it a more appealing place for them to spend their free time. This is why Voith sponsors professional as well as amateur sports, assists various sports clubs and supports events worldwide in parallel with a focus on Heidenheim.

Voith is a long-standing supporter of the professional soccer club 1. FC Heidenheim 1864 e.V. In addition, we sponsor the Fencing Center at Heidenheimer Sportbund 1846 e.V. (HSB – Heidenheim Sports Association) as well as the local HSB baseball team. Together with the sponsor partners of the Heideköpfe baseball team, the HAKRO Merlins Crailsheim basketball club, and the Heidenheim Fencing Center, in the reporting year Voith once again sponsored three professionally managed vacation camps for the children of Voith employees.

## Multilayered engagement for education

We support kindergartens, schools, and universities around the world, as we firmly believe that only a good education and training can give people the right basis for optimal personal development. We are thus continuing the tradition of Hanns Voith.

Since way back in 1946, Voith has dedicated itself to preparing disadvantaged young people in its home State of Baden-Württemberg for vocational training schemes and the world of work. What initially started in 1972 as a vocational preparation and training course has since become an institution and has been recognized since 2004 as the Hanns Voith Special Vocational College. Furthermore, for 18 years now Voith has supported the Germany-wide business@school education initiative of the Boston Consulting Group (BCG): This initiative gives senior high school pupils the opportunity to gain hands-on experience with business topics over the course of a full academic year. Through its involvement in the Wissensfabrik (“Knowledge Factory”), a non-profit association dedicated to STEM education and promoting start-ups, Voith wants to make a contribution to strengthening Germany as a business location. Voith’s vocational training is also rooted in the region: In the reporting year, for example, our apprentices actively engaged in the restoration of an over 100-year-old Voith Francis turbine on the Egau River to the east of Heidenheim. Since completion of its restoration in December 2021, the turbine is once again generating environmentally friendly electricity for the district.

## Promoting culture at our Heidenheim location

We want to give as many people as possible access to cultural life. In this reporting period we once again provided financial support to various institutions in Heidenheim, including a € 125,000 donation to the Opera Festival. In the reporting year, the Opera Festival was once again able to take place in its usual form. For the first time we organized our own performance, for which the tickets were mainly made available to Voith employees.

## Engagement for integration

For many years, Voith has committed to societal engagement around the world that improves people’s living conditions and promotes intercultural exchange. For instance, Voith is one of the initiators of the German industry integration initiative “Wir Zusammen” (“We Together”), dedicated to helping refugees integrate in Germany. We provide places on a vocational training course for young refugees. In addition, together with AFS Interkulturelle Begegnungen (“Intercultural Encounters”) e.V., Voith aims to encourage young people to gain intercultural experience at an early stage. For this reason, with the support of the Hanns Voith Foundation, Voith will once again award partial scholarships for a stay abroad in the 2022/23 academic year, preferably in Brazil, China, or the USA. The scholarship holders will spend the academic year with a volunteer host family and Voith will contribute up to € 4,500 per scholarship holder.

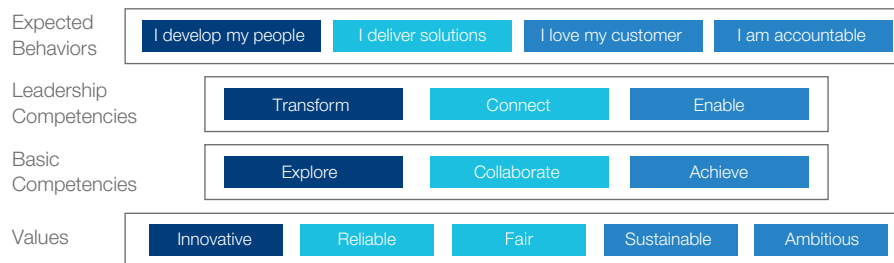


# 2. Employees

## 2.1 Management approach

Our company's greatest strength lies in our employees' skills and motivation. To enable our employees to develop their potential even more fully, we aim to create an environment for them that is highly innovative and agile, focused on customers and results and based on reliability and strong cooperation. Against this backdrop we continue to take a targeted approach to developing our corporate culture, a task in which our managers' behavior plays a central role. This is why we consider the topics of leadership and culture as a single entity and have developed a corresponding framework to guide our employees and managers, as illustrated in the diagram below.

### Sustainable technologies for future generations



The competencies we require and encourage in our company are derived from the Voith company values, the foundation of our corporate culture. Fundamental competencies such as the willingness to break new ground and learn from mistakes (Explore), generating ideas and solving problems together (Collaborate), and personal responsibility and the ability to accomplish objectives (Achieve) go hand in hand with core leadership skills. It is each manager's responsibility to promote employees' willingness to initiate and implement change in order to facilitate innovation (Transform). To this end, it is important to create an environment where transparency and openness (Connect) prevail and in which employees can succeed (Enable). These competencies are intended to enable our managers and employees to act in accordance with our Expected Behaviors, which we expect each and every employee to implement – and which they should also require of their colleagues.

### Sustainable organization of HR services

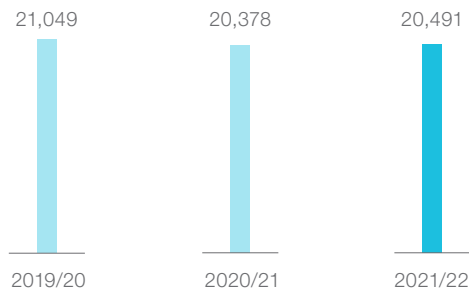
Over recent years Voith has digitalized its HR services, enabling employees to access a Human Resources (HR) service that is tailored to their needs and requires a minimum investment of their time. Using modern service platforms (SAP SuccessFactors and UKG PeopleDoc) they can find out about all topics relating to their employment contracts. If they wish, they can also trigger the appropriate digital service, for instance applying for parental leave or revising their development plan with their manager.


A growing number of these services are offered on a self-service basis via systems that are accessible at all times and intuitive to use. HR services are provided via six service lines (Recruitment; Further Education/Training; Global Secondments; Payroll Accounting; Occupational Pension Schemes; and Document Management) in four regional HR Global Business Service Centers.

## 2.2 Voith as an employer

Voith's business model is geared towards the long term – a principle that also includes our employment policy. As a dependable employer we intend to live up to our responsibility as a family-owned company and offer our employees security and prospects, at a time when the external conditions for their employment in particular are subject to a wide range of changes.

**Number of employees**  
in individual persons



  
**Fact base**  
Employee structure,  
Employees by  
employment type

Employees included in the data analysis, excluding Argo Hytos

## Upholding employee rights

Voith provides its employees with fair working conditions that comply with all statutory requirements. This principle reflects Voith's fundamental commitment to upholding human rights worldwide, a commitment that is further expressed in the Voith Code of Conduct that applies across our global Group. A section of the Code is dedicated to the topics "Respectful Interaction, Tolerance, and Equal Opportunity"; several other sections also explain how cooperation between different people at Voith should be structured while upholding the rights of all employees. We also reject all forms of forced labor and child labor. In structuring working conditions at Voith, beyond the directly applicable laws we are guided by the principles of the International Labour Organization (ILO) as well as further national and international organizations. Furthermore, we view trusting collaboration with employee representatives as a key prerequisite for our company's long-term success. The framework for this is set out by the Code of Conduct and the Group Policy, which every employee is obliged to recognize as part of their employment contract. In these documents we explicitly commit ourselves not to obstruct lawful employee representation in any form, such as obstruction of freedom of association or collective bargaining agreements. Breaches of these regulations can be reported via the grievance procedures of our whistleblower system.

  
**Chapter Values and compliance**

We offer our employees working conditions that in many instances exceed statutory requirements. Therefore, the majority of the employment contracts of our global workforce are covered by collective

bargaining agreements. These give our workforce clarity and certainty with regard to remuneration, working hours, and vacation entitlement. In the 2021/22 fiscal year, a collective agreement was in place for 63 % (previous year: 64 %) of employees worldwide. The slight decrease compared with the previous year is due to changes in the organizational structure.

We always involve employee representatives in discussions between the Corporate Board of Management, local HR departments, and employees. At numerous Voith locations our employees are represented by elected Works Councils, which are involved both in personal actions specific to individuals and in negotiations regarding local company agreements. In Germany, in addition to the respective locations' Works Council committees, a General Works Council operates at company level, while a Group Works Council is in place for the Voith Group. Furthermore, for companies within the European Union (EU) there is a European Works Council, the Euroforum, at Group level.

The respective Works Council committees and their members represent the interests of the workforce towards the company: They are contact points available to employees to refer perceived impairments to their rights, for example.

Our Corporate Board of Management or the local management team communicate fundamental changes to the committees and employees in a timely and proactive manner. We achieve this through a range of communication channels, particularly our intranet, video and telephone conferencing facilities, and written notices. In Germany, in the event of fundamental company changes the decision-making process is subject to the provisions of the Works Constitution Act. Implementation of the measures adopted is supported by the respective location's Works Council. This is exemplified by our legally binding collective bargaining agreements to safeguard Voith locations in Germany, namely in Heidenheim, Sonthofen, and Crailsheim. We are implementing necessary headcount reductions as socially responsibly as possible by avoiding operational redundancies. We make use of natural employee turnover while also relying on tools such as early retirement, semi-retirement and mutually negotiated termination agreements. Use of these tools is agreed with employee representatives and unions. We also use interim employment companies and vocational training measures. If work has to be transferred between locations, the employees concerned receive offers for continued employment at other Voith locations wherever possible. At our international locations we also strive, wherever possible together with the employee representatives, to safeguard employment, avoid redundancies, and carry out any necessary headcount reductions as socially responsibly as possible, based on tried-and-tested practice in Germany.

**Fact base**

Details on upholding employee rights, Measures for socially responsible restructuring and job security

In addition to the employee representatives mentioned above, there are various committees, networks and employee advocacy groups at Voith. Some of these exist in compliance with regional laws, while others are initiated by the employees themselves. Examples include the Representative for severely disabled persons, the Trainee Council, the Senior Executive Representation Committee, the Supervisory Board set up in accordance with the 1976 German Codetermination Act at Voith's head office, and the Voith Women's Network.

## Performance-based and market-driven remuneration

Voith stands for fair and market-driven remuneration for all employees. To this end, unless already covered by a mandatory customary evaluation system, we rely on an internationally standardized job



Fact base  
Expenditures for  
employees

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evaluation system. This ensures a fair and transparent evaluation of roles, for example through the use of country-specific salary benchmarks, as well as market-based remuneration and salary development. The analyses currently available to us, especially for our core countries of Germany, the USA, China, and Brazil, confirm this. Individual remuneration is based exclusively on the requirements of the position, professional qualifications, and performance. Differentiation of individual remuneration on the basis of origin, gender, religion, or other personal characteristics is not tolerated at Voith.

## Diversity and equal opportunity

Our workforce comprises people of all genders and numerous ethnicities who are at different stages in their lives and can contribute their own unique experiences to our company. We believe they should all have the same opportunities at Voith, which is why we signed the German Diversity Charter in October 2018, committing ourselves to create a working environment free from prejudice and to promote a culture of appreciation in our company. This aspiration is supported by our Diversity and Inclusion (D&I) program, which we introduced across the Group back in 2012/13 and which has been continuously developed since then.

We understand diversity as recognizing and embracing the uniqueness of our employees in the aspects of gender, age, nationality and ethnic origin, skin color, language, religion, education and professional experience, as well as all other personal differences such as family status, social background, beliefs, health status, physical and mental abilities, and sexual identity. We are convinced that these multifaceted dimensions combined with varied experiences, talents, and strengths enable the diversity of ideas. At Voith, we understand inclusion as the aforementioned culture of appreciation and respectful cooperation that enables everyone to develop their potential freely and contribute different perspectives, ways of thinking, and approaches.

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### Internationality – more than an aspiration for Voith

Our company's international nature is also reflected in our employee structure. Employees from 100 different nations work for Voith, and the Voith Senior Management Circle also has an international composition, with 93 members from eleven countries. Voith deliberately promotes cultural diversity, thereby enhancing international cooperation at all levels of our company. Numerous international secondments again took place in the period under review: In the past fiscal year, 65 employees were working simultaneously on an international secondment. These secondments enable employees from different regions and of different nationalities to enrich their international careers. Moreover, to further increase mutual understanding, tolerance, and communication skills, we offer our employees intercultural training and language courses.

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## A clear stand for equal opportunity and against discrimination

As an internationally operating company, Voith can only be successful if our working environment is underpinned by equal opportunity as well as mutual respect and appreciation. In our Code of Conduct we take a clear stand against discrimination toward our employees and business partners. The Voith Compliance Organization monitors the implementation and enforcement of our Code of Conduct;

**Chapter** Values and compliance

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information about violations of the Code is documented and tracked via the Group-wide grievance procedure. In addition, there is a separate Diversity and Inclusion (D&I) e-mail address that employees with complaints or requests for help can use to contact the Voith D&I team.

**Diversity and Inclusion Declaration**

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In order to ensure equal opportunities for everyone in the company, the above-mentioned principle of zero tolerance for discrimination applies to all employees and is translated by the Corporate Board of Management into specific behaviors in the Diversity and Inclusion Declaration. In the words of the statement, this principle applies regardless of age, gender, ethnicity or nationality, disability, personal and social background as well as gender identity and sexual orientation, political opinions, religion, culture, or worldview, and expressly includes all vulnerable groups. Furthermore, the Declaration confirms our aspiration to administer all aspects of employment, from recruitment, through training and further education, evaluation and promotion, to employee conditions and benefits, in a fair and unbiased way for our employees.

What is more, within the Declaration our Corporate Board of Management emphasizes the great importance of diverse teams and the creation of an environment of mutual respect and appreciation. Managers in particular are expected to foster their team members' development, support good collaboration – also across borders – and drive their teams' willingness to transform. This approach is further emphasized by the fact that the Voith Group President and CEO promotes and supports the topic of Diversity and Inclusion and relevant activities in the company as a sponsor.

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“Each of our employees is unique due to their different backgrounds, experiences, perspectives, and strengths. We appreciate this diversity and promote equal opportunities because we are convinced that diverse teams boost innovation and help us to truly understand our customers' needs.”

**Dr. Toralf Haag,**

President and CEO, Global Sponsor Diversity and Inclusion at Voith

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## Global D&I program with local direct contacts

Our D&I program applies to all Voith locations and includes not only the consistent sensitization of employees but also the implementation of appropriate measures. The relevant topics are shared with contacts at the respective locations by the Regional HR Business Partners as well as by the D&I Managers and Advocates in the regions. Group Human Resources coordinates the program and defines globally applicable standards, ensuring we take a uniform approach across the Group, share best practice approaches, and consider the varied challenges we face worldwide.

## Measures to increase diversity and equal opportunities

An important element of our D&I program is the optimization of our processes to deal with unconscious bias. Consequently, in the reporting year we drove forward the Group-wide introduction of standardized and objectified procedures for employee selection and promotion, both in the recruitment phase and

as part of talent development. This is linked to our objective of counteracting unconscious bias in our HR processes.

When selecting applicants, in addition to the professional qualifications required by the position, a decisive factor is whether their ways of thinking and working match our corporate culture. Our guide for job interviews, recently launched globally, is therefore based on the competency model. The guide includes standardized questions and clear criteria for evaluating applicants' answers, making it possible to select candidates more objectively. To create equal opportunity in talent development, we also introduced new talent management tools using targeted criteria in the reporting year.

In recent years, our managers around the world have received training in mandatory workshops on the importance of D&I and how to implement it in their own actions. There is also a mandatory training module on D&I in our newly developed Management Development program. In addition, managers have a toolkit available to them on our company's own SharePoint platform that provides ideas for measures and activities to make D&I part of daily working life and teamwork, as well as to help them reflect on their own management style.

We also regularly keep our employees up to date on the topic of D&I via global communication campaigns and lecture series. Furthermore, as a signatory to the Diversity Charter, Voith has taken part in German Diversity Day since 2019. As in 2021, in the reporting year this day was once again extended to a global D&I Month to enable intensive interaction in regional and global self-directed workshops, giving us the opportunity to learn with and from one another, and to network. Employees can also get involved in regional Employee Resource Groups (ERGs) and actively contribute to specific D&I topics via these networks. This approach is supported by our range of digital tools and formats to promote exchange and networking across hierarchies, regions, and Divisions. In addition, an e-learning module on the topic of "Unconscious Thought Patterns" was made available worldwide.

Since women are still underrepresented in technical apprenticeship occupations and higher education courses, Voith is committed to a large number of measures around the world with the aim of increasing girls' and young women's interest in technical professions. For example, we have been participating in Girls' Day and the Girls' Academy for many years and are involved in various initiatives run by the relevant State Ministry in Baden-Württemberg. These initiatives aim to encourage more girls and women to take up MINT professions and to increase career opportunities for women, including those returning to work.

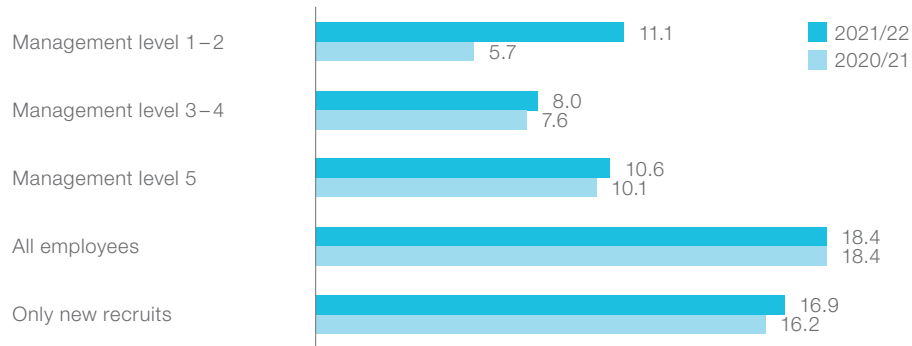
We are implementing various measures to increase the percentage of women, and more specifically the proportion of female managers, in the company. For example, these include HR marketing activities that aim to spark girls' and women's enthusiasm for MINT professions and to position Voith as an attractive employer for women in particular. Furthermore, we are working on promoting equal opportunities in every phase an employee passes through in our company. This is also supported by internal regional Women's Networks with various initiatives such as mentoring programs, networking events, and training courses. At Voith Paper, for example, the "Voith Paper Executive Team Mentoring for Females" was launched in the reporting year. Our commitment is also gaining recognition outside the company: Voith was once again listed in Brigitte magazine's Employer Study as a "Top Employer for Women". Since 2020 we have also been included in the Financial Times list of Europe's Diversity Leaders.



**Fact base**  
 Diversity in the management team and in the workforce

As at September 30, 2022, the proportion of female employees in the workforce remained constant at 18.4 % (previous year: 18.4 %). In the Voith Senior Management Circle, the proportion of women increased to 11.8 % (previous year: 6.3 %), while in our middle management circle the proportion grew slightly to 10.6 % (previous year: 10.1 %).

**Percentage of women by management level**  
 in %



## Balancing work and private life

Voith sees itself as a family-friendly company, an understanding that is embedded in our Group-wide guidelines to provide a flexible and family-conscious working culture. We work to familiarize all our managers with the necessity of this culture through ongoing communication measures; after all, our stated goal is to offer our employees an attractive working environment. This also includes flexible working models that are compatible with their respective life situations. Indeed, 78 % of our employees are largely free to organize their working time flexibly. In consultation with their supervisors they can agree personal models that range from the use of flextime, through part-time work, job sharing, and sabbaticals, to remote working. Furthermore, thanks to our cooperation with an external service provider, our employees in Germany can obtain information and support relating to the care of family members and childcare.

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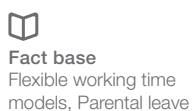
### Acid test: The Corona pandemic

In the year under review our established work processes and forms of cooperation were once again put to the test by the Covid-19 pandemic. As in previous years, despite the particular challenges to Voith resulting from the pandemic, we succeeded in continuing our business operations at all times and without significant restrictions. Continual smooth cooperation with internal and external contacts was ensured without endangering the health of our employees in the process.

At the same time, the challenges of the pandemic have fundamentally changed the way we work together in the company. Even now that many of the Corona restrictions have been lifted, mobile working is still being actively embraced in many of Voith's specialist departments and Voith supports this development. To this end, in the past two years the flexibilization of working hours in terms of time and place has been further advanced and set out in framework regulations. Where not yet in place, specific agreements on mobile working were reached in individual regions.

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In order to respond to the changed world of work and the associated requirements and needs of our employees, it is important that we further develop the working methods and culture at Voith. The Group Divisions are facing up to this challenge and working on specific concepts and solutions. As a pilot for Voith, the Group Division Voith Paper has already successfully introduced elements of New Work in three areas. These include desk sharing, hybrid meeting spaces and areas to retreat to, as well as get-together areas for interaction and exchange. But we understand New Work to mean more than just the offer of a diverse range of spaces, modern equipment, and an inspiring work environment: Our aim is also to further promote a culture based on trust, enable independent work, and empower our employees to work together across all areas of the company and grow together. We want to challenge the status quo hand-in-hand with our employees to press ahead with future ways of working and develop our corporate culture in a targeted way. The New Work approach is intended to help to optimize collaboration at Voith in the interests of both the employees and the company, further promote innovation, and differentiate Voith as an employer from the competition.



### Employee satisfaction

We are convinced that one of the keys to workforce motivation and satisfaction lies in the exchange between managers and employees. This is why we intend to establish an ongoing dialog in our company on skills and interests, event-related feedback, and a constructive no-blame culture. The aim is to give all Voith employees the opportunity several times a year to speak to their managers in a structured manner about their performance, changes in behavior, and what support options are available to them. To go beyond simply agreeing on goals as a part of performance objectives, we intend to focus even more on the way in which these goals can be achieved. Since the 2021/22 fiscal year, the newly created leadership tool MyDialogue has provided the basis for ongoing event-driven discussions between managers and employees systematically throughout the organization.

If employees leave our company of their own accord, we investigate the reasons in order to identify potential for improvement. The Group-wide employee turnover rate in the reporting period fell to 12.1 %





Fact base  
Turnover, New hirings

(previous year: 12.3%). 5.8% of this fluctuation (previous year: 4.9%) was due to employees terminating the employment relationship.

## 2.2.1 Attracting and promoting talent

The global shortage of skilled employees is increasingly developing into a general labor shortage. Against this backdrop, Voith is working tirelessly to strengthen our employer brand: We are taking a more differentiated approach to our personnel marketing activities in order to enhance our efforts to get new talent enthusiastic about Voith. In employer branding we focus on our competency model and employees from all regions. Since more and more people are looking for their future employer online, we focused intensively on expanding our social media presence whilst also continuing to strengthen our presence at virtual career fairs and events in the reporting period.

### Leadership training

The development of our executives is of great significance within the overall strategy of our training and education measures. We pay particular attention to the emotional bond and adaptability of our employees, by which we mean those aspects that are more influenced by intrinsic motivation than subject-specific abilities and skills. With training courses on specific leadership challenges and topics such as “remote leadership” and “leadership and health”, we are meeting the highly complex challenges posed by modern leadership.

With the goal of developing strategic competencies, we have established a standardized leadership model throughout the company based on the new leadership skills – Enable, Connect, and Transform – and successfully trained almost 3,000 managers as part of our e-learning program: In a survey of all managers conducted in the reporting year, 75% stated that the “3x2” leadership model supports them effectively in their leadership responsibilities, while 81% would recommend the e-learning program. Specific improvement measures were also derived from the survey and further training presentations on core topics were developed. These are made available to all managers at regular intervals. In this way, understanding of the new leadership model is consolidated among the managers.

In addition, our leadership training for all new managers, the Leadership@Voith Fundamental Program, was adapted to the new leadership model in the reporting year. In the coming fiscal year, our Advanced Leadership Program for experienced managers will be revised in light of the new leadership model and the leadership skills defined within it.

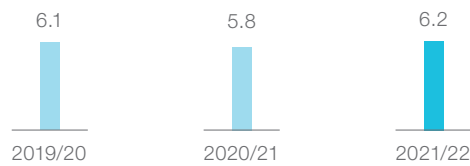
Furthermore, we plan to introduce multidirectional feedback in the 2022/23 fiscal year to support our managers in their individual development. This new tool is also based on our leadership model and will give managers feedback on the perception of their leadership behavior from different perspectives.

## Promotion and development schemes for employees and talents

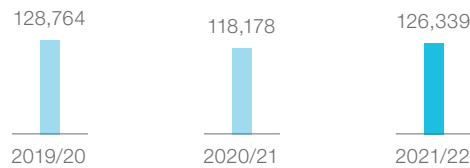
In the reporting year, the new talent management tools for managers which had previously been piloted in parts of the Group were rolled out across the entire organization. Our talent management efforts aim in particular at identifying people with leadership potential and providing them with targeted support. We want to improve the quality of the selection of leadership talents further by means of objective potential assessments – not least because we should be able to fill leadership roles more quickly and transparently via a pool approach. Our overall objective is to continue to fill the majority of our leadership positions from within our own ranks.

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**Average training time**  
in hours



**Total training time**  
in hours



Our employees' training and further education is a top priority at Voith. The focus of our attention is the continuous development of our employees' skills by means of a wide range of training programs in the areas of leadership and social skills, as well as building their methodological and specialist knowledge. For example, this development effort includes our functional training models for Sales, Purchasing, and Product Management. With train-the-trainer programs we create a high level of internal participation in the transfer of skills, making use of the full range of classroom and e-learning formats, both internally and externally. There are also programs for specific Group Divisions such as the Paper Academy: New starters at Voith Paper as well as Service employees can acquire paper production skills and knowledge via a portfolio of online and classroom-based training courses, with each course building on what they learned in the previous one.

In the 2021/22 fiscal year our employees completed an average of 6.2 hours of training and further education (previous year: 5.8). This includes only the systematically recorded and thus evaluable training hours; additional training measures such as on-the-job training are not included. We work tirelessly to improve our training program. This is why we ask participants about their experiences after each training

**Fact base**

Further education and training hours by hierarchical employee category

course, and provide the findings to the trainers and the HR Area. In addition, the manager's assessment is obtained as a means to evaluate the success of a measure from different perspectives.

With the Talent Program for the EMEA region, Voith provides a Group-wide offer that is specially tailored for graduates as well as applicants with first professional experiences. The three programs, "GROW", "DISCOVER", and "INNOVATE", meet the different needs of the talents as well as the company's requirements. The talents always work on strategically relevant and stimulating projects in an international context. Over the course of the program they build up a network while also tackling innovations and future topics.

In this reporting year, within the framework of the Voith Paper Talent Board, emerging talents from Germany were once again able to work together on specific and highly strategic project tasks that were either set by the Corporate Board of Management or proposed by the emerging talents themselves. As part of the program, they had the opportunity to reflect on the results with the Corporate Board of Management, and to prepare for future management and leadership responsibilities. Personal mentoring as well as the option to attend a leading business school rounded off the program.

At Voith Turbo, talent is promoted through collaboration in strategic, mostly international, cross-functional projects. Job rotation, international secondments, and in-depth mentoring in an international context also support the development of high-potential employees. In terms of strategic competence development, in recent years several employees have been able to combine part-time master's degrees in the field of e-mobility at the universities of Ingolstadt and Aalen with their work at Voith.

Voith also takes part in the initiative "AFRIKA KOMMT!" ("Africa is coming!"), a training program in cooperation with the German Federal Enterprise for International Cooperation (GIZ GmbH). The program aims to train prospective managers from Africa in the company. A key component of the annual training initiative, which Voith has supported with a scholarship since 2008, is an eight-month training course in our Group, as one of the GIZ partner companies in this program. The long-term objective for Voith is the permanent acquisition of African talents to strengthen our business activities in Africa. There are great opportunities for Voith there, particularly due to the high demand for hydropower plants. At the same time, by implementing the appropriate projects, development can be driven forward locally.

## High aspiration – high level of training

Voith has been committed to providing world-class vocational training for more than 100 years. At the same time, interdisciplinary learning and the integrated provision of social and specialist expertise are especially important. We are also committed to training at our international locations: Voith's largest training facility outside Germany is our Training Center in Kunshan, China, where we provide vocational training based on the German dual-study system adapted to local requirements. In Brazil, too, where in 1964 Voith opened its first factory outside Europe, we have provided training for many years. In São Paulo, for example, in collaboration with local training institutes, we offer a typical two-year dual-study program for young people over the age of 15, which regularly produces exceptionally well qualified new technical talent.

Our training portfolio is as focused as possible and concentrates on the technologies and developments that are relevant for Voith. The objective is to provide graduates with the best possible preparation for

their employment with Voith. Part of this preparation is a focused onboarding process that ensures a seamless transition between training and the target position. Thanks to comprehensive digital offerings, this year's graduates were also able to complete their vocational training with excellent results despite the Corona pandemic. Voith apprentices and students are regularly among the best in their class, and receive awards for this. For example, the best technical product designer in the Federal State of Schleswig-Holstein comes from our Kiel location, and at the THU (Ulm University of Applied Sciences), the top student in the final semester also comes from Voith.



Training and dual-study programs at Voith

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In the 2022 reporting year, the Hanns Voith Special Vocational College can look back on a success story spanning fifty years. Every year, 30 young people with special needs start a year of pre-vocational education here. More than 80 % of the graduates then follow this up with vocational training in East Württemberg.



Fact base  
Vocational training

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The Baden-Württemberg Cooperative State University (DHBW) has been a strong partner of ours in the academic training of emerging talent for over 40 years now. The program includes ten different courses at five university locations. The training links theory and practice and is combined with a secondment abroad or an inter-location assignment. The range of courses offered by DHBW is an important pillar for securing our future management and leadership pipeline.



For more information:  
Germany's best training companies

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Voith's training is also recognized as first-class outside our company: In the national survey "Germany's Best Training Companies" published in the reporting year, Voith was awarded the ranking 'very highly attractive' in the industrial sector. This was based on a nationwide survey by the Cologne-based analysis institute ServiceValue in partnership with the German nationwide daily newspaper Die Welt, in which around 4,000 companies were considered.

## 2.2.2 Occupational health and safety



Fact base  
Certifications

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Occupational health and safety are a top priority at Voith. By taking a responsible approach to designing workplaces and processes, we work to prevent accidents and work-related illnesses as far as we can. Our HSE (Health, Safety, Environment) organization provides the best basis for this. In addition, our systematic approach to implementing the Shared Services structure ensures that individual locations and regions receive the most comprehensive support possible. Many of our sites have also implemented an occupational safety management system certified to ISO 45001 that currently covers around 80 % of our employees.

Occupational health and safety activities are concentrated in the central Quality & HSE/Sustainability Board, in which the HSE managers in the Group Divisions coordinate their activities. They report functionally to the Global Head of Corporate HSE. In addition to a greater presence on location, the aim is to offer specialist support with a stronger product focus: Established processes serve to identify specific dangers and occupational health and safety risks. This information is accessible to everyone involved and can be accessed via a system so that experience can be easily transferred between areas.

In the year under review a global HSE workshop was held with the members of the Quality & HSE/Sustainability Board where various workstreams were defined: These include the reduction of hazardous

**Fact base**

Approach to preventing and dealing with negative health and safety impacts

materials, the development of an innovative training concept for employees and managers, and the formulation of a communications roadmap.

## Group Directive sets the framework

A Group Directive sets out the requirements and responsibilities for effective occupational health and safety, laying down binding minimum requirements and standards for the Group. In the 2021/22 fiscal year, the Standard Operating Procedures (SOP) were superseded by work and process instructions on HSE at Voith. These are supplementary to the Group Directive. In principle, while all locations are covered by this Directive, the more stringent provision in each case is always applied when reconciling the regulations with regional requirements. As a third step, customer agreements are binding if they impose stricter or more specific requirements.

## Highly effective IT system supports our activities

We use our Group-wide hse+ IT system to manage HSE, which is now also used in smaller organizational units. As a fundamental principle we attach great importance to the early involvement of Data Protection Officers in all issues relating to HSE reporting, controlling, and communication. Since January 2022, central legal databases have no longer been made available via the system. Instead, local regulations are identified at country level and translated into legal obligations.

The Environmental Risk Assessment tool rolled out by Voith in 2019 was rated very positively in internal and external audits in the reporting year. This tool allows for the objective identification of the diverse hazards at our locations as well as their daily documentation. As with the other risk assessments, actions can also be assigned and their implementation tracked. Continuous optimizations in the reporting year also made it possible to record more nonconformity incidents.

## Joint task of occupational health and safety

Company agreements on occupational health and safety, and on preventing addiction, complement the regulations embedded in our HSE Group Directive. A monthly Safety Committee meeting brings together employee and employer representatives at the major production sites to develop the annual occupational safety program and decide on its implementation.

## Occupational safety

In 2009 we anchored accident frequency and severity reduction in our corporate goals. Since then, we have been able to greatly improve occupational safety at Voith. Today, Voith ranks among the world's leading companies in occupational safety across all industrial sectors. This is confirmed by the Frequency Rate, which we calculate according to the international standard. Accordingly, the number of notifiable accidents per 1 million working hours decreased very significantly from 13.9 in the 2008/09 fiscal year to 1.6 in the year under review (previous year: 2.1). By comparison, the average Frequency Rate of companies in the Professional Association of Plant and Mechanical Engineering in Germany was

**Chapter**

Environment –  
Management  
approach

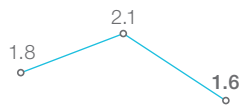
**Fact base**

Employee representation  
on committees

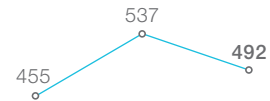
**Fact base**  
 Occupational  
 accidents

21.5 in the 2021 calendar year. Thanks to our global efforts on occupational safety, we succeeded in reducing the number of notifiable accidents to 61 in the reporting year in comparison with 2021 (79) and 2020 (68). This means that the figure remains at a particularly low level compared to the industry. We are gradually working to identify accident focus areas and establish safer procedures and processes through appropriate programs. Similarly, the severity rate, which serves as a measure of the severity of accidents, decreased in the reporting year. At 492 working hours lost (previous year: 537) per million hours worked in the reporting year, the previous year's figure was slightly improved upon. There were no fatal accidents in the reporting year.

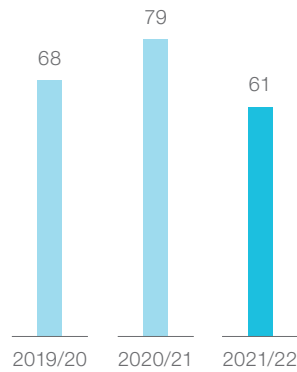
**Frequency rate**  
 Specific figure in accidents per 1 million working hours



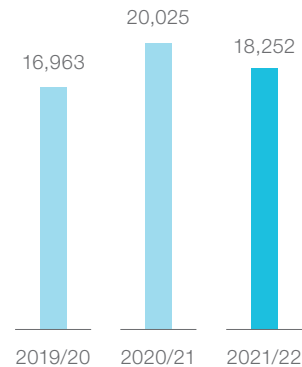
**Severity rate**  
 Specific figure in lost hours per 1 million working hours



**Number of accidents**



**Number of lost hours**



## Extensive occupational safety program

Our occupational safety program includes all employees. We also involve service providers in occupational safety activities through our “Coordination of Visitors and Contractors” work instruction. More and more incidents with external companies are being recorded so that we can work together on improvements and appropriate protective measures. Executives with supervisory roles have a particular responsibility in terms of occupational safety: They are responsible for risk assessments, as they are best acquainted with the technical requirements as well as their employees’ level of training and experience. Furthermore, they have a clear duty to ensure that information and targets are cascaded as prescribed, right from the Corporate Board of Management, through the respective executives, all the way to employee level. Employee training and adequate communication of key developments also fall within their area of responsibility. Employees must be given documented instruction at least once a year, with centrally prescribed training documents

supporting this process. Besides annual instruction, brief information on the subject of HSE is published regularly – in some cases also on a daily basis – and information sheets are available for selected topics. Further topics arising from local accident analyses as well as topics of general relevance are communicated as part of the annual occupational safety program at our locations.

The use of our HSE software for online instruction continues to gain in importance, even if it cannot replace personal instruction by the supervisor. Individual business areas conduct training courses online that are precisely tailored to their respective needs. These have proved particularly effective in communicating information globally and in a timely manner to both office-based and Field Service staff. We work to raise our production employees' awareness through five- to ten-minute, high-impact presentations. Beyond the annual instruction we provide, these presentations on current topics keep aspects of occupational safety firmly in employees' minds as they carry out their daily work. We document instruction sessions that are required by law.

We place particular emphasis on the training of our experts in the regional HSE organization. They have already been rigorously trained on the use of hse+: We have used this online system at Voith since the 2015/16 fiscal year to display information globally, uniformly, and transparently on audit planning and audit results, as well as key information on hazardous materials and risk assessments. Some of the relevant hse+ modules are mandatory, but can also be used flexibly by the locations.

Integrating new companies into our Group-wide occupational health and safety system was a particular challenge in the Group Divisions Turbo and Paper. In addition to training the employees responsible, we focused on developing appropriate communication channels to ensure the flow of information.

## **Special responsibility with Field Service**

When on construction sites or service calls, Voith Field Service employees often take responsibility for compliance with occupational safety and environmental protection, whether as supervisors without authority over other service providers, or by taking full construction-site responsibility that includes authority over subcontractors.

## **Documenting, analyzing, and preventing accidents**

At Voith we record accidents centrally so the direct supervisor is reliably informed and the notifications can be published on the intranet (in the WebApp). This also ensures that the Corporate Board of Management is informed within 24 hours in the event of serious incidents. Investigation teams comprising stakeholders, supervisors, and safety experts review and document the accidents. Especially serious accidents are examined separately once again by our global HSE team. A detailed description of accident definitions is provided in our Group Manual; these are then presented in a way that makes them comparable internationally with other companies.

Our eVAP (electronic Voith Awareness Program) app actively involves employees in accident prevention. With clear icons to facilitate user interaction, the app enables them to log potential accident causes quickly and easily on the spot. Pictograms make the app easy to use and help to break down possible language barriers. The data is analyzed automatically and then published in target group-specific

internal media along with corresponding instructions. This allows us to raise our employees' awareness of unsafe actions and situations before accidents occur. Furthermore, even more targeted prevention work is made possible thanks to the improved data quality across sectors and countries. Our HSE experts received an average of 940 (previous year: 727) reports per month in the 2021/22 fiscal year. This means that they again achieved a significant increase in the number of safety talks carried out. These serve, for example, to identify unsafe actions, involve employees, and derive key action points. At many locations, the findings feed into the annual safety program. Routine communication regarding security issues, accident analyses, audits, and other measures enable us to ensure we are always up to date in terms of HSE and can take immediate action in response to serious accidents, or if specific accident types occur more frequently. In the reporting year, the number of audits carried out was increased as planned. Furthermore, we are working to further improve content quality by ensuring close contact between the respective HSE experts and the people involved in an accident.

## Regular communication on safety issues

We use several communication channels to keep every employee across our Group updated on changes and developments. The global HSE team holds fortnightly conference calls on safety topics. In addition, workshops on specific topics take place regularly. Safety topics also play a central role in the QHSE Board's meetings. Following these, meetings are held at a regional level to communicate the points discussed; this information is then shared with the individual locations in the monthly Occupational Safety working group discussions. The local experts are also responsible for translating the guidelines and standards into their respective languages.

## Occupational health

Regardless of where our employees work, we want them to stay fit for work and retire healthy at the end of their professional lives. To comply with legal requirements and recognize cultural differences at our locations in different countries, we always take a regional approach and set different priorities in occupational health management. Further improvements in occupational health care were achieved this way at our German and individual international sites in the reporting period.

Our focus remains on communication between individual teams as well as between managers and employees. To systematically drive relevant topics, we establish Health working groups comprising management, HR, Occupational Safety, and Occupational Health experts. A higher-level central steering group with representatives from Occupational Health, HR, and the Works Council contributes ideas and builds a network between the Health working groups at our locations.

In 2021, the Occupational Health Management Steering Committee in Heidenheim launched the Voith Health Initiative. This brings together a program of activities carried out selectively as well as long-term health promotion offers. All health promotion programs are made transparent and summarized on a Voith Health Initiative SharePoint site. The program was continuously expanded during the reporting period. Among other things, health presentations covering digitalization, mental health, and the changing workplace situation (for example due to Corona) were offered for all locations in Germany. Existing offers were enhanced, including partnerships with fitness studios across Germany, company sports groups, and links with Voith & Me at our Heidenheim location.



We use decentralized crisis teams to meet the needs of our differing country organizations in the best way possible. In Germany, for example, there is a crisis team that meets regularly, consisting of representatives of the Group Divisions and central functions such as Communications, HSE (including Occupational Health), Legal, Corporate Security, and HR.

In 2020, against the backdrop of the Corona pandemic, an independent Corona Crisis team developed out of one of the regular crisis teams. The pandemic was still with us in the 2021/22 fiscal year. The Corona Crisis team therefore continued to focus on reviewing international recommendations for action, to be able to assess the relevance of events for the Group and derive appropriate actions. Since the beginning of 2022, the Corona Crisis team has been meeting on a needs basis.

We continued to maintain the SharePoint set up at the beginning of the pandemic to keep the workforce informed at all times about the development of Corona and how to protect themselves. Employees could also call our occupational health service hotline and seek advice from our HSE experts. In order to support our employees during the pandemic, Corona vaccinations were administered at several German locations in the reporting year: 1,620 were given in Heidenheim alone. In addition we offered influenza vaccinations, as we do every year; this offer was taken up by around 500 employees at our location in Heidenheim in the fall and winter of 2021.

# 3. Environment

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## 3.1 Environmental management approach

As a family-owned company, Voith is especially committed to avoiding environmental risks and to using resources responsibly. We link this with our ambition to be a driving force and co-creator of a decarbonized industry in the digital age. Here, we focus particularly on energy and resource management. We have pledged to reduce our energy consumption and corresponding Greenhouse Gas Emissions (GHG) continually, to use both work materials and raw materials efficiently, and to avoid waste wherever possible. The continual reduction of our water withdrawal and wastewater volumes is a further core objective in this area.

Our environmental management is organizationally anchored in two areas. In conjunction with Occupational Health and Safety (HSE), in operational environmental protection we support our Group Divisions, business units and locations strategically and operationally in their compliance with and implementation of environmental regulations. In addition, the Ecological Business Management (EBM) at Voith identifies environmental-economic improvement potentials in production processes and enables these to be leveraged, thus contributing directly to improving energy and resource efficiency at our locations.

### Highly effective environmental protection organization

A central approval process ensures that our environmental protection processes and procedures are organized at Voith as uniformly as possible. Our HSE Group Directive sets out specific requirements by means of detailed Working Instructions on how environmental protection is to be organized at a local level. Together with Occupational Health and Safety, we have consistently organized our corporate environmental protection activities within a Business Partner structure, in alignment with the Group's shared services system.

At all Voith locations, HSE experts as well as the local operating units hold responsibility for the implementation of these HSE topics. Their tasks and specialist topics include emission control and water protection, waste management, hazardous materials and goods, and preventing incidents with an environmental impact. These experts also advise operations managers on plant newbuilds and modifications as well as approval processes, and conduct regular location inspections and audits. Environmental experts in our Group Divisions ensure that Group companies are provided with systematic support. Overall, we strive for a uniform environmental management system and the most comprehensive certification possible of our locations worldwide. The ISO 14001 certification coverage of our locations is currently 81 % (previous year: 79 %) in relation to the number of employees.

## Global management approach to resource efficiency

In Ecological Business Management we pursue a globally uniform management approach to our resource efficiency. This way we ensure that the same standards are applied throughout the company and enable high data quality and comparability. Today EBM has already been implemented at over 90 Voith locations and this figure is set to climb further in the coming reporting period. The locations are advised by the EBM Managers of their Group Division. The central Corporate Sustainability function coordinates the respective activities and assumes responsibility for target controlling and reporting at Group level.

To achieve our ambitious goals, especially in climate protection, we rely on a four-stage Green Controlling process. Through this proven process we manage resource efficiency activities by regularly comparing the implemented and potential measures with the respective effort required to achieve the targets set. In the 2020/21 fiscal year we expanded this process to be able to take currently unavoidable CO<sub>2</sub> emissions into account even more precisely. We are therefore now also able to map the quantities of self-generated renewable energy and externally purchased energy. This way we ensure continuity in our review of interim targets and are in a position to take targeted countermeasures quickly if required.

Hot-spot analyses support the EBM team in advancing specific and cross-location topics. For efficiency reasons we focus on the largest consumption drivers: At Voith Hydro and Voith Turbo these are buildings, machine tools, and test rigs, while Voith Paper consumes the most energy during thermal fixing (heat setting). Once again, in the reporting period it was only possible to carry out a few hot-spot analyses physically at our locations due to the pandemic; as an alternative, remote and self-analyses were carried out in close coordination with the locations as far as possible, for instance by Resource and Energy Efficiency teams at Voith Hydro. In addition, supported by an external consultancy, a comprehensive Sustainability Audit focusing on energy and CO<sub>2</sub> was carried out at the Voith Hydro location in York (USA). Alongside hot-spot analyses, Voith Turbo also held “Zero CO<sub>2</sub> Workshops” in the 2020/21 fiscal year and defined measures for all locations. Following the prioritization of these measures, the initial projects for the substitution of CO<sub>2</sub> have already been implemented at Voith Turbo, and further conversions to CO<sub>2</sub>-neutral energy sources are in the planning phase. Voith Paper also began planning and developing specific projects in the year under review to achieve a long-term reduction in the use of fossil fuels and associated CO<sub>2</sub> emissions. At Voith Turbo, the ISO 50001 Energy Management matrix certification was carried out at two additional locations in the reporting year; this means that 71 % of Voith Turbo’s energy consumption is now ISO 50001-certified.



**Fact base**  
Environmental goals,  
Hot-spot analysis  
methodology

## IT system as a central information source

Our Group-wide hse+ IT system supports the work of our experts in the areas of environmental protection and EBM. With its ability to store and manage all relevant processes, documents, and analyses centrally, the system forms the basis for efficient operational environmental protection, successful resource management, and matrix certifications. The same applies to Voith standards as well as to approvals and additional formal requirements. In addition, hse+ assesses location-specific environmental risks and assigns, documents and monitors measures based on these, along with responsibilities and implementation deadlines. The system is regularly reviewed and adapted, for example to integrate new locations. Up to December 2021, hse+ also covered the HSE-related laws

and regulations relevant to Voith. Since the beginning of 2022, these have now been stored in specific legal databases that the country organizations use to derive their legal obligations.

## Group-wide reporting system

All environmentally relevant incidents at Voith are recorded monthly via our Incident WebApp in a Group-wide reporting system according to standardized criteria and then evaluated centrally. The respective Group Division management is informed directly in the event of a serious environmental incident. We also raise employees' awareness via targeted communication measures. Environmental incidents caused by third parties (external companies) are also analyzed in detail and appropriate precautionary measures are then taken. In the reporting period, a measurement at the Austell (USA) Voith location indicated one<sup>1)</sup> isolated breach of the copper limit in wastewater.

To manage resource efficiency, target achievement status reports are regularly issued to the managers responsible at each location. A report is also submitted to the Corporate Board of Management at least twice a year. Should the Green Controlling process indicate a requirement for more comprehensive countermeasures, the Board of Management is informed promptly. This way we continuously monitor and analyze our current target progress in the areas of energy, water, waste, and CO<sub>2</sub> emissions.

1) Addendum to fiscal year 2020/21: Environmental incident in the Wastewater area (see Wastewater Volume and Wastewater Treatment for further details).

## 3.2 Energy efficiency and climate protection

According to the United Nations Paris Climate Agreement, the rise in average global temperature needs to be limited to well below 2 °C and if possible to 1.5 °C compared to pre-industrial levels. Voith supports this objective and as a company aims to make its contribution to climate protection and fulfilling international climate protection targets. That is why we have set ourselves the goal of net climate-neutral operations from January 1, 2022 onwards. To achieve this goal, we are pursuing a concept based on four pillars:

- **Energy efficiency:** We work continually to raise the energy efficiency of our production processes. For example, we set ourselves the target of raising energy efficiency by 30 % by the end of fiscal year 2021/22 compared to the 2011/12 base year. We already reached this objective in the first quarter of the reporting year. As at the end of the 2021/22 fiscal year the increase in energy efficiency was about 34 %, corresponding to a total energy consumption reduction of 148 GWh since the base year 2011/12. At the beginning of fiscal year 2022/23, we set ourselves the objective of increasing Voith's energy efficiency by a further 12.5 % by 2026/27.
- **Self-generation of renewable energy:** A further pillar of our climate protection activities is the expansion of renewable power generation. We continuously check at which of our locations further renewable power generation projects are possible and economically feasible – or could be feasible in future. In the year under review we generated around 8.3 GWh of electricity from solar and hydropower. By the end of the 2026/27 fiscal year we plan to increase our generation from these energy sources to 16 GWh annually.



Wastewater volume and Wastewater treatment



Energy efficiency further increased, GHG emissions significantly reduced



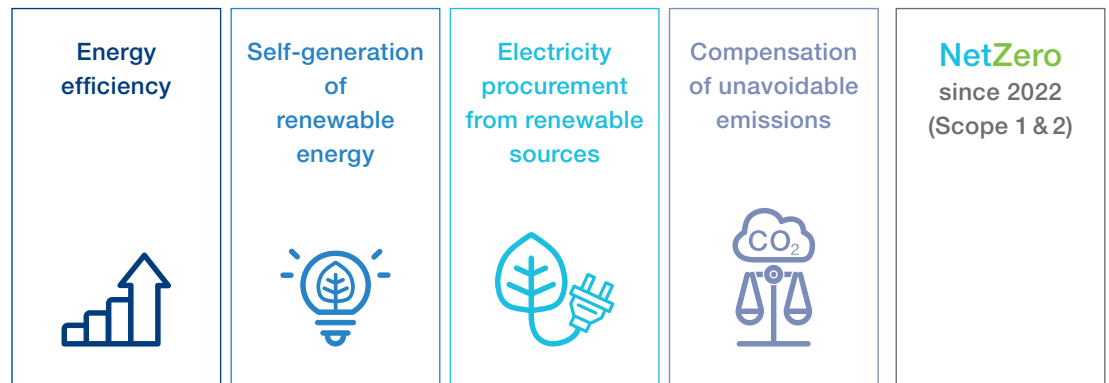
More electricity generated from renewable sources



Progress in renewable energy purchasing

- **Energy procurement from renewable sources:** Since October 2021 we have been using electricity generated from renewables wherever possible. In line with the criteria we defined in the 2020/21 fiscal year, we obtain electricity from 100 % renewable sources. As a provider of hydropower components we naturally prefer electricity from hydropower. This way, we were able to more than double the share of electricity we drew from renewable sources in the year under review. In the years to come, we plan to further increase this share and cover our electricity requirements almost entirely with green power.
- **Compensation of unavoidable emissions:** Since the beginning of the reporting period we have been offsetting currently unavoidable CO<sub>2</sub> emissions via compensation measures. Through this approach we even achieved our goal of net climate neutrality earlier than our target date of January 1, 2022. In the years to come we will strive to reduce the proportion of compensated CO<sub>2</sub> emissions progressively through further reductions in fossil fuels and by increasing our own energy generation. Here, our already communicated target of reducing CO<sub>2</sub> emissions at our sites by 90 % by the end of 2049/50 compared with fiscal 2016/17 applies.

### Our climate neutrality strategy



### Measures showing an impact

Thanks to numerous CO<sub>2</sub> reduction measures in all Divisions we once again made substantial progress in the 2021/22 fiscal year. Additional savings in infrastructure (lighting, compressed air, heating, ventilation, air conditioning) were realized. CO<sub>2</sub> emissions were also further reduced in process-specific areas (machine tools, thermosetting process). For example, an electric heat-treatment furnace was newly installed at Voith Hydro in Vadodara (India) to enable CO<sub>2</sub>-neutral operation. The Salzgitter location is currently driving the conversion to CO<sub>2</sub>-free heat procurement via district heating, and the St. Pölten location (Austria) is also planning to convert its heating system from gas to district heating. Further, Crailsheim plans to save around 5 GWh of district heating through heat recovery. In addition, we are working to replace gas-fired heating systems with heat pumps as soon as possible.

Energy-saving measures have been implemented at our German and Austrian locations to ensure a secure, low-emission energy supply. For instance, in the year under review, specifications for the heating and cooling systems (operating times, temperatures) and the proportion of fresh air in the ventilation

systems of the work and office areas were established. Implementation of these short and medium-term measures will begin at the end of the current reporting period. The specifications result from the work of the Energy Supply Task Force for Germany and Austria, which was set up at Voith in the period under review.

A further focus in the 2021/22 fiscal year was on analyzing the direct consumption of fossil fuels in our production processes. Here we see further potential for reducing CO<sub>2</sub> emissions through renewable energy sources or electrification. We are working on specific action plans and have already scored initial successes.

### **Energy efficiency further increased, GHG emissions significantly reduced**

In the year under review, absolute energy consumption rose in line with the significant increase in sales. In total, Voith consumed 537,341 MWh of energy within its own organization (Scope 1 and Scope 2) in the year under review. In the previous year, the figure was 501,810 MWh. The increase in absolute energy consumption is partly due to the inclusion of the power plant at the Heidenheim location, which was taken over by Voith in April 2020. Starting in fiscal 2021/22, we will report the power plant's energy consumption in natural gas, taking into account corresponding losses. Accordingly, natural gas consumption increased from 126,591 MWh to 233,198 MWh in the reporting year. Electricity and district heating consumed at the Heidenheim location via the power plant are no longer reported. In the year under review, Voith consumed a total of 237,387 MWh of electricity (previous year: 259,758 MWh) and 22,283 MWh of district heating (previous year: 67,620 MWh).

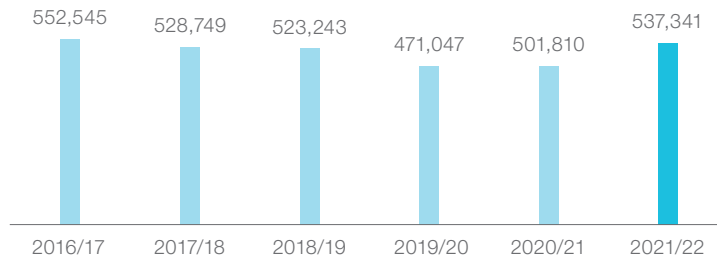
In addition, Voith has grown further in recent years through acquisitions. Accordingly, total energy consumption has risen in line with Group sales. This development should also be seen against the backdrop of the Corona pandemic: the associated restrictions on production in 2020 and 2021 have resulted in relatively lower energy consumption in the two previous fiscal years.

The identified potential measures for energy savings increased from 141 GWh to 159 GWh in the reporting period (+13 % compared to the previous year). The completion of efficiency measures saved a further 10.3 GWh of energy in the reporting year.

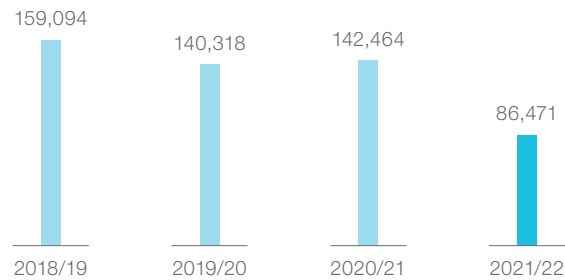
In recording its GHG emissions, Voith follows the guidelines set out in the Greenhouse Gas (GHG) Protocol. In fiscal 2021/22, we succeeded in reducing GHG emissions at our locations by 39 % to 86,471 t CO<sub>2</sub> (previous year: 142,464 t CO<sub>2</sub>). While the share of direct GHG emissions increased by 54 % to 50,544 t CO<sub>2</sub> (previous year: 32,773 t CO<sub>2</sub>), indirect GHG emissions fell by 67 % to 35,927 t CO<sub>2</sub> (previous year: 109,691 t CO<sub>2</sub>). The increase in direct GHG emissions is due to the inclusion of the power plant's natural gas consumption. We achieved this significant reduction in indirect GHG emissions by switching our electricity procurement to electricity from renewable sources.



**Total energy consumption within the organization**  
(Scope 1 and 2) in MWh at 100% coverage



**GHG emissions within the organization**  
(Scope 1 and 2) in t CO<sub>2</sub>



**Fact base**

Energy consumption and GHG emissions recording methodology, Total energy consumption and total GHG emissions, Energy saving and GHG emissions reduction measures and further potentials, Air pollutants

## More electricity generated from renewable sources

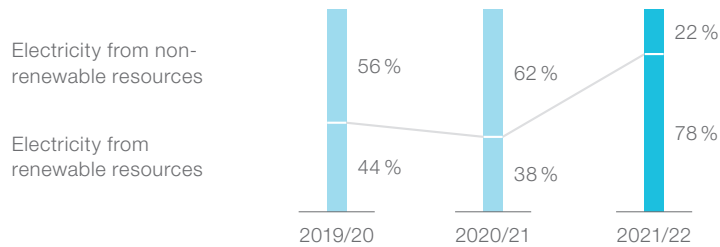
Voith's goal is to further expand our own power generation from renewables. To achieve this, a range of differing renewable energy generation projects are currently being implemented or are in the detailed planning phase. For example, new projects are contributing to our own solar power generation at the Kiel, Rutesheim, Mönchengladbach (Germany) and Noida (India) sites. Our purchased electricity mix was thus supplemented by a total of 8.3 GWh of self-generated electricity in the year under review. Further photovoltaic projects or expansions of existing plants are being planned, currently at the two locations in Düren and Weißenborn (Germany) as well as in Tolosa (Spain), São Paulo (Brazil), Dubai (United Arab Emirates), Hyderabad and Vadodara (India), and Shanghai (China). Voith Paper alone plans to self-generate additional 1.8 GWh of electricity annually in the future by installing PV systems.

## Progress in renewable energy purchasing

To cover the highest possible proportion of our electricity consumption with power from renewables, the focus of our activities in the 2021/22 fiscal year was on the corresponding conversion of electricity contracts to green power. This change is regulated very differently from region to region and is not easy to carry out in every country. Nevertheless, in the reporting year we made significant progress and achieved a clear increase in the renewable energy sources within our electricity mix. The electricity

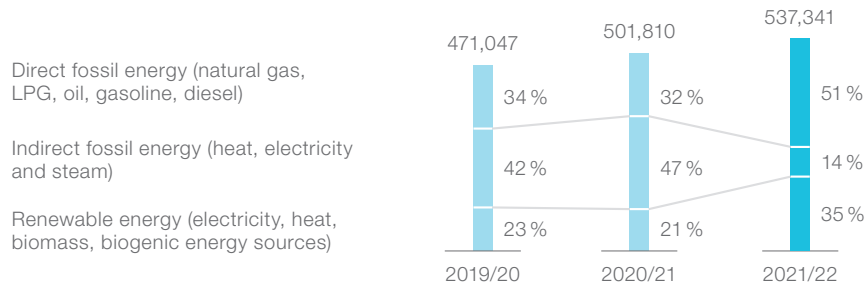
purchased from external providers in our mix was 78 % (previous year: 38 %) from renewable and 22 % (previous year: 62 %) from non-renewable resources.

**Power consumption by resource type**  
 in %



**Fact base**  
 Electricity mix

**Energy use by source**  
 in MWh



### 3.3 Material efficiency and waste

At Voith we manage our use of working and raw materials across the Group centrally, to make our processes as resource-efficient as possible. Significant challenges result from the broad scope of our product portfolio and our correspondingly diverse process landscape. On top of this come differing project business requirements at Voith Hydro and Voith Paper, compared to serial production at Voith Turbo.

#### 3.3.1 Use of material and efficiency measures

In addition to decarbonization and digitalization, Voith also focuses on the principle of circular economy. We want to drive innovations that contribute to closing cycles in our industries and therefore promote the principle of circularity. The same applies to our own production process cycles. Over a decade ago, Voith already set itself the goal of reducing the volume of waste by 35 % by fiscal year 2021/22 compared to the base year 2011/12. This target was achieved in the reporting year through improvements in material



efficiency and waste avoidance at our locations worldwide. Compared to the base year 2011/12, we have now reduced our waste volume by 38.2%. With the start of the new target period from the 2022/23 fiscal year, we plan to further reduce waste volumes by 1% annually up to the 2026/27 fiscal year.

## Material efficiency increased once again

In the reporting period Voith purchased approximately 170,000 t of material from suppliers, about 7% more than in the previous year (159,831 t). Of the materials we purchased, 59% were semi-finished products (previous year: 57%), 32% were raw materials (previous year: 33%), 7% were for packaging (previous year: 8%) and 2% for auxiliary materials and supplies (previous year: 2%). Hot-spot or Ishikawa analyses help us to constantly optimize our material efficiency. We apply these analyses in alignment with our Excellence program, which provides us with key approaches for identifying product development and engineering improvement potentials.

 **Fact base**  
Materials used

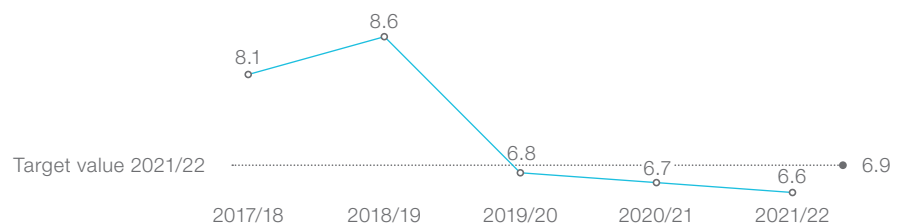
## Material-specific recycling

To promote the principle of the circular economy, Voith Purchasing increasingly sources recycled materials by following a parts- or material-specific approach. Selected examples from Voith Corporate Purchasing of materials that can be bundled reveal the great significance we attach to this topic in individual areas and procurement segments. For example, in Voith's procurement of steel as a raw material, the share of recycled steel already exceeds 70%. Even low-value, high purchase-volume materials – known as C-parts – that Voith procures externally are made predominantly from recycled materials. The strategic goal of Central Steel Purchasing is to increase the recycling rate for steel purchases to more than 85% in the next three to four years.

### 3.3.2 Management of waste and hazardous materials

In line with improved material efficiency, Voith generated a total of 28,061 t of waste in the reporting period (previous year: 28,617 t), which is 556 t or 1.9% less than in the previous year. The corresponding indicator fell to 6.6 t/€ million in sales versus 6.7 t/€ million sales in the previous year. We have thus clearly achieved our target of 6.9 t/m € sales by 2021/22.

**Waste**  
Specific value in t/€ million sales

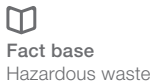




In the reporting year, the volume of waste-avoidance measures implemented rose from 9,000 t to 11.369 t (+26 %). The individual locations work continuously to deliver specific solutions for local challenges in the area of waste. At Voith Hydro in Shanghai, for example, steel processing has been optimized so that an annual 607 t of steel will be saved in future. At Voith Paper in the USA, further measures to reduce material and hazardous waste were successfully implemented. Furthermore, experts at Voith Paper in Manchester (UK) are also working on optimizing delivery-packaging material for our customers. The goal is to achieve this by switching from wood-based to paper-based packaging. Here we expect savings of around 36 t.

### Share of hazardous waste again decreased significantly

In the 2021/22 fiscal year Voith again reported a clear reduction of 708 t in hazardous waste and a 152 t rise in non-hazardous waste volume versus the previous year. Approximately 90 % of waste at Voith is classified as non-hazardous and 10 % as hazardous.



Voith does not transport any waste itself. The collection of hazardous waste at Voith is regulated by internal guidelines, with disposal performed by external disposal and recycling companies. We follow up guideline violations thoroughly; if confirmed, these lead to a termination of the business relationship. We regularly audit our disposal and recycling contractors, and these audits include on-location inspections of their locations and disposal/recycling facilities. We also gather proofs of disposal and associated documentation. In the reporting period we were not notified of any violations of the law in relation to the disposal of waste by our external disposal and recycling service providers.

### Targeted management of hazardous materials raises safety

In its production processes Voith uses hazardous materials such as paints, lacquers, thinners and solvents, adhesives, resins and hardeners, lubricants, cleaning agents, and industrial chemicals. Through our management of hazardous materials, we want to make sure critical materials are handled as safely as possible.

With our Group-wide hazardous materials approval process we work to promote the replacement of particularly harmful materials with harmless substitutes, and to advance the harmonization of safety standards across the organization. For example, every work material and hazardous material at Voith undergoes a central and local approval process before it can be employed. This involves a systematic and automated comparison with applicable legal regulations (e.g. ECHA Candidate List and REACH annexes). In the downstream local approval process, workplace and location-specific topics are supplemented (e.g. water protection area, local government requirements, storage location, on-location transportation, and disposal). The use of centrally approved materials may therefore be prohibited locally for location-specific reasons. A central hazardous materials database allows us to perform uniform global analyses of the environmental, occupational safety and health risks of plant, work materials, and hazardous materials, providing us with a valuable decision-making basis.

In the 2021/22 reporting year, the number of material master files in our databases fell by more than 6,000 due to non-use and substitution. This significantly reduces the risk associated with the use of

existing materials and the corresponding costs and hazards associated with their procurement and storage. In parallel, around 550 new material masters were created during the reporting period. The rejection rate due to non-approved and hazardous substances or due to existence of appropriate adequate substitutes was around 6 % in the reporting period.

Additionally, a pilot project to reduce carcinogenic substances was launched. The data analyses are already available to our local HSE managers, and the possible reductions should already have been implemented by the beginning of 2023. In the 2021/22 reporting period, the topic of reducing work and hazardous materials was given higher priority and the number of active participants in the corresponding working groups was also expanded. With intensified involvement from the participating Group Divisions, Voith's Standards Department, and Purchasing, a strategy is currently being developed to ensure a consistent and effective procedure across the whole company. Since December 2021, every new request must be approved by the respective disciplinary supervisor, and the responsible organizational unit will also share the costs directly. At the same time we constantly monitor our baskets of goods and work to reduce the number of hazardous materials through feasible substitutions here as well. In doing this, our focus is not only on lowering the number of materials but also on reducing particularly hazardous materials. Therefore, in the 2019/20 fiscal year we completed an initial categorization of the hazardous materials into application groups, to prevent an increase in the number of new hazardous materials in use at Voith and to support the phase-out of redundant materials. This lays the foundation for further measures in the future.

The objective is also to log materials rated as acutely toxic in categories 1 to 3 in the system by the end of 2022 and thus to integrate them into the approval process. This may enable us to further reduce the overall number of materials used at Voith. The internal specifications have already been drawn up and discussions are underway with the software supplier regarding implementation in our systems. The scope of materials to be captured in the database and the inclusion of additional locations nevertheless still present us with particular challenges. The consolidation will therefore take longer than originally expected when we launched the project in 2011. In order to speed up the process in the USA in particular, a service provider there will migrate the relevant data to our systems.




**Fact base**  
Work materials and  
hazardous materials  
approval process

## 3.4 Water

Voith sees handling water responsibly as a matter of course. At Voith it is our stated goal to achieve further reductions in freshwater withdrawal, although water and therefore also wastewater play a minor role in our production processes compared to other industries. Nevertheless, we analyze and manage our water withdrawal in the same way as our energy and material consumption. Our minimum standards fulfill the respective legal requirements. In this, we differentiate between drinking water, groundwater, and surface water. We work above all to reduce our consumption of freshwater, also to reduce the burden on the local water supply. Our goal for the 2021/22 fiscal year was to withdraw 40 % less freshwater compared to the 2011/12 base year. In the year under review we achieved this target by reducing specific freshwater withdrawal by 43.7 %. We have thus successfully concluded our previous target period and are introducing a new target corridor at the beginning of the 2022/23 fiscal year: By the end of the 2026/27 fiscal year we plan to reduce our water withdrawal by 1 % annually.

Compared to the efficiency gains of recent years, however, it is becoming increasingly difficult to identify further efficiency projects that make economic sense. At the Heidenheim and Garching locations, for example, large quantities of surface water are withdrawn for cooling purposes and returned without any environmental impact. While these are ecologically rational measures with regard to circularity, they stand in contrast to our strict water withdrawal reduction targets. We will therefore pay greater attention to the issue of water scarcity in future and in particular to the affected regions. In developing our water withdrawal plans we therefore focus above all on those locations in regions facing imminent water stress.

According to the UN World Water Report 2022, water scarcity continues to rise in many regions of the globe. Even with small water savings we can thus make a key contribution to reducing local water scarcity at the locations concerned. Already in the 2020/21 fiscal year we analyzed water risks at Voith locations based on the World Resources Institute (WRI) Aqueduct database and the WWF Water Risk Filter. The criteria of water quality and quantity were considered, along with regulatory framework conditions. The analysis results showed that water stress is currently highest at our Indian locations. This is followed by Voith locations in China and Indonesia, then Dubai and São Paulo. The analysis comprised all location-specific criteria available in the tools. In the 2021/22 fiscal year 20% of Voith's water withdrawal occurred in water-scarce areas. Based on the analysis results, our conclusion is that our local water withdrawal activities currently have no impact on the environment or on our stakeholders. Any such impact would trigger our environmental incident reporting process, resulting in a thorough root cause analysis and rapid resolution.

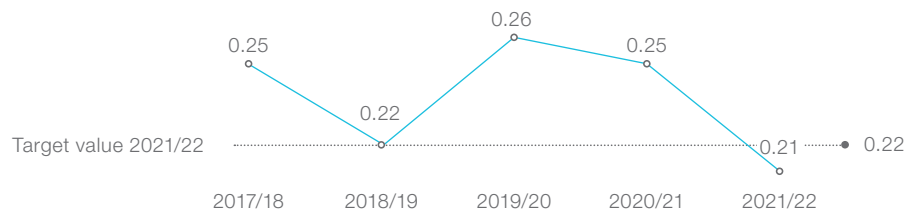
 For more information: UN World Water Development Report 2022


## Reduced water withdrawal

In the reporting period, Voith's freshwater withdrawal sank by 44,804 m<sup>3</sup> or 4% to 1,030,982 m<sup>3</sup>. Freshwater withdrawal sank by 16% year-on-year to 0.21 m<sup>3</sup> per € 1,000 in sales revenue. We have thus achieved our target of 0.22 m<sup>3</sup>/€ 1,000 sales by 2021/22. In the same period we increased the volume of implemented measures to reduce the fresh water withdrawal by 43,939 m<sup>3</sup>. The measures already implemented from the pipeline thus rose in the same period to 861,939 m<sup>3</sup> of freshwater.

Our water withdrawal is largely due to processes at our training center in Heidenheim. Here, water is taken from the river Brenz for cooling purposes, inspected by the authorities and fed back into the Brenz unchanged. This measure makes sense from an energetic point of view and saves energy.

**Freshwater withdrawal**  
 Specific value in m<sup>3</sup>/€ 1,000 sales



 Fact base  
 Water withdrawal

In the current reporting period, pole manufacturing at Voith Hydro was relocated to a new production location in Europe. At this new location, the pole coil press is cooled with a closed circuit and not with an open circuit as before. This enables savings of 2,135 m<sup>3</sup> of water and 258 MWh of energy. Water savings can also be achieved at the Mönchengladbach location in future by installing an automatic flush; the forecast saving is 46,175 l of water annually.

## Wastewater volume and wastewater treatment

With a volume of 895,889 m<sup>3</sup>, the amount of waste water decreased by 7 % compared to the previous period (previous year: 966,326 m<sup>3</sup>). 55 % (previous year: 58 %) of this was discharged into rivers, lakes and the ground, 45 % (previous year: 42 %) into the sewage system. We use recycled water in our processes wherever it is appropriate economically, environmentally, and socially. This includes cooling processes (São Paulo), as well as processes in closed cooling water circuits (e.g. Garching, Summerville, and Kunshan). Voith also operates its own wastewater treatment plants at the locations in São Paulo, Garching, and West Monroe (USA). We work consistently to close water cycles wherever it is economically feasible and have now achieved this objective in most cases.

In direct comparison to other industrial companies, our production processes have a minor impact on natural bodies of water. Measurements of water quality are therefore rarely necessary, with only a small number of locations required to take continuous or repeated monitoring measurements. The overall burden of BOD, COD, TSS, heavy metals, nitrogen, and phosphorus cannot be derived reliably, owing to the low sampling requirements.

In the reporting period, a measurement at the Voith location in Austell (USA) revealed a one-time exceedance<sup>1)</sup> of the copper content threshold in the wastewater. This was detected during routine checks in January 2022 and covers the period from October to December 2021. The corresponding measurement showed a value ten times higher than usual. The corresponding report was submitted to the responsible local government authority. Three other samples taken in January and March 2022 showed no further abnormalities. In response to this incident, samples will be taken earlier and monitored more closely in the future. If the threshold is exceeded again, long-term corrective measures will be taken.



**Fact base**  
Wastewater by  
method of discharge  
and quality

<sup>1)</sup> Addendum for fiscal year 2020/21: Water-related environmental incident

In March 2021, an inspection by the Pollution Control Board (PCB) found that the biochemical oxygen demand (BOD) and total suspended solids content (TSS) in the outlet of the wastewater treatment plant at the Faridabad location (India) exceeded threshold values. Due to pandemic-related restrictions and the temporary lockdown, the processing of the incident was delayed until October 2021; the plant was temporarily shut down. In order to prevent similar incidents, an oil separator was installed in the wastewater treatment plant. In addition, managerial responsibility for the operation of the plant was redefined internally. Furthermore, a routine maintenance contract with an external expert was agreed.

# 4. Products and supply chain

## 4.1 Product responsibility

### 4.1.1 Management approach

With its products and industrial services, Voith is represented worldwide in the markets for energy, paper, raw materials, and transport & automotive. As these markets have different requirements, we ensure the solutions our company provides are equally diverse.

#### Our responsibility – our fields of action

Given the diversity of our product portfolio and the very different market requirements we face, our Group Divisions are confronted with a broad spectrum of challenges regarding product responsibility. To identify these demands systematically and evaluate their materiality, we draw on evaluations of customer requirements as well as the results of our stakeholder survey from the fall of 2018. We have also evaluated external benchmarks, including those of the German Institute for Ecological Economy Research (IÖW) and ISS ESG.

In conjunction with our Group Divisions' evaluations and assessments, we define the material fields of action for our company with regard to product responsibility as follows:

- Quality and reliability of our products and services
- Guarantee of maximum product safety
- Product longevity
- Resource efficiency of products
- Minimizing products' environmental impacts

#### Orientation toward megatrends

Led by the Divisions' respective Chief Technology Officers (CTO) we developed future scenarios for water, paper, mobility, and the environment extending right through to 2040. Key technologies and potential business segments were identified and prioritized. In this process, the megatrends of decarbonization and digitalization play a core role, as does the circular economy principle. Individually and jointly, these factors shape the future scenarios derived in each of the Group Divisions and thus flow into each Division's definition of its strategic objectives.

- **Decarbonization:** Voith wants to contribute to decarbonization and to achieving the goals of the Paris Climate Agreement. To achieve this, we are focusing on promoting hydropower and wind power as renewable energy sources. We are also working on systematic drivetrain electrification as well as alternative drives such as hydrogen technologies to facilitate eco-friendly mobility. In addition, we are

developing new solutions for the electrification of relevant paper production sub-processes to enable more efficient use of renewable energies.

- **Digitalization:** Voith views digitalization as an opportunity and combines the Group's long-standing automation and IT expertise with its know-how on hydropower, paper machines, and drive technology. In our core business we develop customer-oriented solutions that drive the digital transformation in key global industries forward. This enables a reduction in energy expenditure and resource consumption, while extending the life of the equipment and system-equipped plants that we supply.
- **Circular economy:** Voith drives innovations that contribute to closing cycles in our industries and thus promote resource conservation.

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### Demonstrable contribution to decarbonization

Our analyses show that over the entire product lifecycle, the greatest lever for decarbonization lies in the use phase of our products. Against this backdrop, in fiscal year 2020/21 the Sustainability Department together with representatives of the Group Divisions conducted a Group-wide analysis in order to determine the CO<sub>2</sub> emissions of the Voith products put into operation in fiscal year 2019/20. At the same time, we calculated the amount of CO<sub>2</sub> that could be avoided by using our products – in each case compared with a reference technology.

This analysis encompassed Voith's three Group Divisions with the following products and product groups.

1. Voith Hydro: Commissioned hydropower plants, with output and annual running times (corresponding to Voith's share in the overall project),
2. Voith Paper: Whole systems delivered for paper manufacturing and stock preparation as well as rebuilds of existing facilities,
3. Voith Turbo: Applications in new wind turbines (corresponding to Voith's share in the overall project), products for power transmission, and products installed in vehicles (corresponding to Voith's share of the overall product).

The analysis was verified by TÜV SÜD and shows that Voith and its technologies already make a significant contribution to decarbonization today. For example, a total of 2,205,701 t CO<sub>2</sub> was emitted through the use of Voith products such as paper machines, gearboxes, and engines that went into operation in fiscal year 2019/20. This stands in contrast to 2,968,765 t CO<sub>2</sub> emissions avoided by Voith technologies such as hydropower plants and wind turbines. A close look at the emission sources reveals that around 77 % of emissions originate from the use of electric drives.



**Fact base**  
 Calculation method for CO<sub>2</sub> emissions of products in the use phase

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## Research and Development

Our success largely relies on our technological expertise and our ability to constantly apply our know-how in innovations that create added value for our customers. This is why Research and Development (R&D) has traditionally been a high priority at Voith and why we continuously invest in our future: In total, over the last five years we invested over € 1 billion in R&D activities. Even in the two fiscal years marked by the Corona crisis, we deliberately kept our R&D commitment high. As a result, the Voith Group's R&D expenditure in the 2021/22 fiscal year exceeded the previous year's level (€ 192 million) at € 213 million. As a percentage of the Voith Group's sales, our R&D ratio was 4.4 % (previous year: 4.5 %). Voith holds several thousand active patents around the world, with hundreds of new ones added to our portfolio in the reporting year.



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 p. 23 ff.



**Fact base**  
 R&D expenditure

## Customer dialog

Maintaining close customer relationships and a deep understanding of customers' needs has always been one of Voith's strengths. All Group Divisions are in constant contact with their customers, who also play a key role in trend analyses. In joint working groups with customers, we identify current and future trends and subsequently define and implement joint projects. In addition, we carry out regular and standardized surveys on customer satisfaction or the future requirements on the performance and sustainability of our products. Development collaborations with selected customers have also proven effective in jointly developing solutions that offer the highest added value on both the customer and supplier sides.

### 4.1.2 Reliable and safe products

Voith is world-renowned for the safety, quality, and reliability of its products. We are fully aware of the value of this important competitive advantage and have therefore set out the principles of our quality and technical risk management processes in two Group Directives that apply to all Voith companies worldwide. Our Group Divisions and their companies expand on the respective Group Directive and supplement them with additional regulations; this provides a clear and binding Group-wide framework for the management and objectives of quality, risk, occupational safety, environmental protection, and occupational health.



Fact base  
Quality targets

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Uniform KPIs across the Group enable benchmarking within both the company and the relevant industrial sectors. The corresponding performance indicators are regularly reported to the Corporate Board of Management. Our measures are reviewed in internal and external audits, in which our suppliers are also closely involved.



Fact base  
Certifications

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We document and certify our activities according to the international ISO 9001 Quality Management (QM) standard, as well as ISO 14001 for environmental protection and ISO 45001 for occupational safety; we also supplement these with our own QM methods. Virtually all Voith locations are certified to at least one of these standards, with the majority of Voith locations meeting all three of the standards mentioned. Voith Hydro meets the respective standards for all its locations. Voith Turbo also meets industry-specific quality standards such as IATF 16949 and ISO/TS 22163.

Voith products always meet the statutory and regulatory requirements of the countries we supply. The respective EU Directives, such as the Machinery Directive 2006/42/EG, provide the basis for the minimum requirements for product safety worldwide. Our Group Divisions are responsible for implementation, while the relevant Quality Assurance Departments ensure process compliance. Our Quality Management system also defines how to fulfill the respective statutory product documentation requirements and how products are to be labeled. Besides internal technical documentation, operating instructions provide information on the intended use of our products and on how to handle them in a technically and environmentally safe way. Our QM system also outlines procedures for decisions that entail risks.



## Product safety in the Group Divisions

**Voith Hydro** always provides its customers with safe equipment, throughout its entire service life. This is a top priority for us and applies to all products and services of the Group Division. We use the Failure Mode and Effects Analysis (FMEA) method for risk analysis, among others. At Voith Hydro, all products must at least meet the safety, health, and environmental requirements of the relevant EU Directives, irrespective of the market area. Risk Assessment Sheets are available for all machines and products, in relation to the European Directives or any national directives that exceed the EU requirements. The construction rules for all Voith Hydro components and products are defined in design manuals. Product safety is ensured in the design process through compliance with industrial standards and – where necessary – also through service Life Cycle Assessments. For this purpose, the component stresses determined from numerical analyses (e.g. finite element method) are evaluated with the aid of relevant sets of rules such as the Computational Strength Assessment Guideline (Festigkeitsnachweis von Maschinenbauteilen, FKM). If necessary, supplemental material tests for service life durability are performed on materials and environmental conditions. To ensure the accuracy of the calculations for modeling, measurements are also performed during the operation of the hydropower components. For example, pressure fluctuations, vibrations, and strains on critical components in the relevant operating states can be measured.

Safety tests are always carried out, both during the manufacturing process and during installation and commissioning. For all components and products, an Inspection and Test Plan defines the specific test criteria and responsibilities, as well as the documentation requirements. During commissioning every single machine undergoes a clearly defined test phase, the results of which are logged. All essential functions and signals – from idle to full load – are verified, as is compliance with the limit values. The scenarios investigated also include operating envelope boundary states, up to emergency shutdown at maximum load. Only after the contractually agreed test program for verification has been carried out is the machine handed over for commercial operation.

In line with its Business Management System, Voith Hydro continues to monitor its products during the utilization phase with regard to potential safety risks and major machine damage. We always adhere to product liability law and its specifications regarding active product monitoring. In case of a safety risk or a safety-relevant event, Voith Hydro informs customers immediately and always in accordance with legal requirements. To ensure our customers and their facilities enjoy a maximum level of protection, all safety information on Voith Hydro products is also documented in operating manuals.

Quality Management principles at **Voith Paper** are documented in guidelines as well as formal process and work instructions. Necessary safety tests and the corresponding documentation are implemented via internal Enterprise Resource Planning (ERP) systems, in line with Voith Quality Specifications (VQS). These include the technical specification, the test specifications, and the quality assurance agreement for products and product groups. The content is created by the respective specialists and approved for release by trained and authorized personnel. Mandatory tests (e.g. dimensional, magnetic particle, dye penetrant, or ultrasonic tests) are used to fundamentally test possible impacts on the environment, health, and safety, and are carried out on the basis of clearly defined specifications and checklists. Various tools are used in order to continuously improve processes, such as Ishikawa analyses, FMEA, and A3 and 8D reports. Since mid-2022 we have also applied the DRBFM (Design Review Based on Failure Mode) method, describing and logging it in the stage-gate process and the correspondingly adapted work instructions.

Specially trained employees carry out risk assessments as early as the product development phase. Virtual walk-throughs are performed on detailed 3D designs to uncover any safety deficiencies. Standard products and components are tested as prototypes in industrial applications before being launched on the market as part of the stage-gate development process. For example, all Roll Cover and QualiFlex jackets under development undergo extensive durability and load tests. In addition to verifying performance, the focus is on safe operation. Necessary validations are carried out as part of internal assembly/factory installation and commissioning. Independent quality experts are core members of the project teams and provide quality assurance, from order receipt right through to customer handover.

The focus is on safe operation during the use phase as well. This is ensured by means of a standardized product monitoring process that is clearly defined in process and work instructions. The process refers not only to the Voith products available in the market but also includes products from competitors. On roll test stands, thermography systems and vibration-measuring devices monitor flawless operation around the clock. Potential fault causes are documented precisely and serve as a foundation for measures to improve the products. In addition, Service and Sales employees regularly visit numerous customers to measure the performance of consumables such as fabrics and roll covers. These specialists also create a comprehensive product and facility safety record, thereby providing the greatest possible safety for our customers.

All Voith Paper products are delivered with extensive operating manuals that contain detailed safety instructions.

**Voith Turbo** places the highest demands on the quality of its products and has documented this in its safety guidelines. This Group Division sets corresponding targets and closely monitors their achievement. Product safety is an integral part of all processes, including preventive methods such as FMEA. Quality Management annually reviews the achievement of safety targets, assesses safety-relevant incidents, and takes appropriate measures where needed.

Voith Turbo inspects its products regarding safety and potential health impacts. We consider a large number of relevant criteria here, from functional safety, through explosion and fire protection, to electrical safety and electromagnetic compatibility. Throughout their service life, the products are also carefully monitored for safety and reliability. Depending on the applicable contractual, legal, or official requirements, systems such as Entity in Charge of Maintenance (ECM) are applied. In addition, some products are monitored online, such as the DIWA drives in a fleet of over 1,000 vehicles in Dubai and Abu Dhabi. This enables proactive maintenance and therefore helps to avoid unexpected downtime. Online remote monitoring can also be implemented for Voith Schneider Propellers (VSP) via an extended sensor system. Work is currently underway on a corresponding Condition Monitoring System (CMS) that will enable ongoing monitoring.

Voith Turbo provides its customers with all relevant safety information. This can be found for example in Material Safety Data Sheets, product declarations (REACH, IMDS, etc.), fire protection certificates for materials, and safety requirement specifications for risk assessments (CE, etc.). In addition, customers receive information in the operating instructions for drive units about possible risks; these instructions also detail the correct handling of working materials from a safety and environmental perspective.

Wherever necessary, Voith Turbo supports its customers in the authorization and approval of its products, and delivers the required documentation and registration papers. The Division's experts are involved in the creation of safety concepts as early as the product development phase, and check their implementation right through to joint validation with the customer. If the need arises, the components are taken into operation jointly with customers in their own production facilities.

## Training

**Voith Hydro** trains both its own as well as its customers' employees in how to apply the relevant specifications and implement the respective framework conditions and regulations. These are available via Group-wide databases and internal communication channels. We also offer training to our customers at our Training Center, directly on location, or via digital media and remote channels.

Skilled specialists with many years of experience in Voith HydroSchool courses, as well as comprehensive on-the-job training, ensure that our customers' employees are able to implement the specifications for safe conduct in the daily operation of the machinery and continue developing their knowledge into the future. Since the start of 2020, the Voith HydroSchool has also provided online training courses to its customers. This enables location-independent learning and also means individual webcasts can be repeated, making long-term knowledge retention easier.

The topic of safety has particular significance in the Voith HydroSchool customer training courses. In particular these include:

- Safety-by-design Principles and Case Studies: In this one-day seminar we train customers on the fundamental safety requirements of hydropower plants and discuss combined case studies on damage and accidents.
- Application and Fulfillment of EU Directives on Machine and Plant Safety: In this seminar we share our expertise and provide practical examples to prepare our customers for the complex process of CE marking.
- Training programs tailored for individual customers that can be repeated regularly.
- Topic-specific training series that help customers visualize the learning progress of their employees through evaluable tests.
- Mentoring and train-the-trainer programs for sustainable knowledge-building.

**Voith Paper** conducts extensive training for all operating personnel at customer facilities. Usually, training is delivered as a group course as well as directly at the facility. Virtual reality, webinars, and digital training methods developed as part of the PaperSchool are also utilized. In addition, Voith Paper carries out required training directly at the paper machines during scheduled service visits. This kind of training has proven to be particularly efficient because it takes place directly where the product is used. Experts are also available to Voith Paper customers for questions and joint problem-solving via the OnPerformance.Lab and other remote connections. The solutions from our digital portfolio (OnCumulus, OnView, OnEfficiency) always include service delivery through the OnPerformance.Lab in order to ensure the best possible performance.

At **Voith Turbo**, all employees are trained on quality topics. In addition, customers receive extensive information and relevant training courses on the safe operation of products. Several quality programs

are currently running to increase product and service reliability even further throughout the lifecycle. At the same time, Voith Turbo seeks a close relationship with customers to allow their experience from daily system operation to be incorporated into this Division's product development activities.

## Requirements for substances of concern contained in products

All Voith Group Divisions comply with the relevant rules and regulations for the handling of suspect and hazardous materials and their exclusion.

**Voith Hydro** thoroughly applies EU Directives such as the Candidate List, the List of Substances Subject to Authorization (Annex XIV), and the List of Restricted Substances (Annex XVII) according to the REACH regulation. The centrally managed Group Standardization Department is responsible for the implementation of and compliance with guidelines. The central Technical Department has identified substances that will be banned via REACH in the future; appropriate replacement options are currently being worked out in a development project. In the reporting period, progress was made as planned.

If asbestos is found in old machinery during modernization projects, specialized companies ensure its proper disposal and compliance with all applicable rules and regulations. The exact procedure is set out in a Group Division directive.

The REACH regulation applies to **Voith Paper** as well. No free chemical substances contained on the REACH (Appendix XIV) list are marketed in our products in the EMEA region. When new substances are added to the list, Voith Paper reviews their use and, where necessary, identifies a harmless substitute which is then tested and introduced.

For **Voith Turbo** products, the regulations for the handling and categorical exclusion of suspect and hazardous materials are numerous. For example, EU regulations such as the REACH regulation, the RoHS Directives, and German Battery Law (BattG) apply. In addition, there are railroad fire protection standards, the Group's own specifications on hazardous materials, specific customer requirements, and guidelines from associations such as the Rail Industry Substance List and the globally standardized IMDC exchange and management system for material data in the automotive industry. Wherever technically and economically feasible, hazardous materials are avoided or replaced by other materials as early as the engineering phase.

### 4.1.3 Product responsibility by Group Division

The constant further development of our products makes them more environmentally and resource-friendly throughout their lifecycle. In doing so, we meet our customers' demands, statutory requirements, and ultimately our own aspiration. Conserving resources and minimizing the impact of our products on the environment are therefore top priorities for all Group Divisions. In the case of projects, potential sustainability impacts are always critically analyzed as part of the internal risk assessment before the submission of tenders. To achieve this we follow a decentralized management approach.

We predominantly supply components that, as part of an overall system, have differing energy and material footprints. We employ a range of tools to gain an even more detailed picture of our products'

energy and raw-material efficiency and thus enable optimal resource utilization in the use phase. We conduct product Life Cycle Assessments (LCAs) in accordance with ISO 14040 and 14044.

As early as the product development stage, performing LCAs is a key aspect. The insights gained from them help to identify the greatest lever for environmental impact and take appropriate action. This ensures that only products with the lowest possible environmental impact finally reach the market.

Depending on product type and objective, LCAs are calculated within two different system boundaries. For the first of these, we calculate LCAs for the “cradle-to-gate” system boundary, i.e. from raw material extraction to the factory gate. Our customers can then use the results of these calculations for their own analyses. For the second, we generate LCAs for the “cradle-to-grave” system boundary, i.e. from raw material extraction to disposal. These calculations are primarily used internally for product development and comprise the five phases of the product lifecycle: raw material extraction, production & processing, transport, use, and end-of-life. The corresponding analyses consider GHG emissions as well as hazardous substances (carcinogenic, non-carcinogenic, and ecotoxicity), the materials in the REACH regulation, particulate matter pollution, mineral and metal use, energy use, and water use.

As Voith products are often not serially produced, LCAs are not carried out on every product. However, we successively prepare corresponding analyses for high-turnover products as well as for new technologies that are still under development. In recent years several LCAs were carried out for various product groups in all three Group Divisions.



**Fact base**  
 Further information  
 on Life Cycle Assess-  
 ments carried out

## Voith Hydro

The Group Division Voith Hydro develops customized, long-term solutions and services for hydropower plants across the globe. Its broad portfolio of products and services covers the entire lifecycle and all essential components of hydropower plants of all sizes – from generators, turbines, pumps, and automation systems through to spare parts, maintenance and training services, and digital solutions for intelligent hydropower plants.

Product Group	Share of Group Division orders received in %
Components for large hydro (including refurbishments)	62.4
Components for small hydro (including refurbishments)	11.6
HyService and automation (with digital products)	25.9

Around 29 % of Voith Hydro’s orders in fiscal 2021/22 came from countries where only part of the population can be supplied with electricity and the degree of electrification is in some cases well below 100 %. An inadequate power supply hinders economic and social development. Access to electricity is therefore one of the basic prerequisites for regional development and a reduction in poverty. The expansion of hydropower in these areas not only enables the supply of electricity, but also generates added value and thus local jobs. In addition to large-scale plants that feed electricity into public power grids, small hydropower plants are also in use that supply individual companies or communities with electricity, generating energy close to where it is needed.

## Sustainable energy supply from hydropower


Voith Hydro is active in hydropower, the largest renewable energy source for power generation worldwide. As a proven, mature, predictable, and competitive technology, it combines low CO<sub>2</sub> emissions with an unrivaled level of efficiency of up to 90%. In addition, hydropower plants feature extremely reliable operation and a service life of up to 100 years.

The importance of hydropower is also underlined by the commonly used energy KPIs Energy Payback Ratio (EPR) and Energy Return on Investment (EROI). These are calculated by dividing the electricity output during the normal service life of a system by the energy required for its construction, maintenance, and operation. A high EPR indicates a highly energy-efficient system. Scoring 267 (for run-of-river power plants) and 205 (for storage plants), hydropower has the highest EPR of all methods of power generation. In comparison, fossil fuels achieve a value of three to eleven, large wind farms 39, and nuclear power 16. To further improve the EPR, we are focusing not only on product efficiency but also on reducing the energy required in production at our facilities.

Voith is convinced of the benefits of hydropower and intends to further strengthen its role in the energy transition. As a flexible and grid-stabilizing energy source, hydropower enables the integration of wind and solar power into the grid. Hydropower is therefore an essential pillar in achieving the global and local CO<sub>2</sub> reduction targets set by policymakers.

However, even with hydropower projects, the greatest possible sustainability can only be ensured if all stakeholders work together and a wide variety of aspects are taken into account. For this reason, Voith has been a member of the International Hydropower Association (IHA) for many years and signed the San José Declaration on Sustainable Hydropower in September 2021. In doing so, Voith Hydro recognizes sustainable hydropower as a clean, green, modern, and affordable solution to climate change. The Declaration also contains a series of principles and recommendations for sustainable hydropower, including a clear rejection of hydropower developments in UNESCO World Heritage Sites.


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 San José Declaration on Sustainable Hydropower

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Voith Hydro is also represented on the Hydropower Sustainability Governance Committee (HSGC), a multi-stakeholder group that administers Hydropower Sustainability Tools. These Tools are intended to assist in defining internationally proven methods for the sustainable development of hydropower and assessing the sustainability of projects. The Hydropower Sustainability Standard, a new certification and labeling system for hydropower, was launched in September 2021. Voith Hydro supports certifications with this standard and encourages its customers to use it to demonstrate sustainable development and responsible operation of hydropower projects.

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 Hydropower Sustainability Governance Committee (HSGC)

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## Shaping the future with hydropower

Consistent future scenarios for energy and water were formulated several years ago. Alongside the large hydro sector, the focus is also on the growth areas of small hydro, services, and digitalization. We discussed the findings with our customers and business partners, and compared these with their own assessments. We were able to convince customers of our solutions and are now in a position to design a digital and sustainable future. Above all, the three global megatrends of decarbonization, digitalization, and the circular economy shaped the analysis in the Hydro Group Division. While digitalization played a standout role in all scenarios, decarbonization and the circular economy were observed differently in the

individual scenarios. Together with the structure of world trade (“open” vs. “protectionist”) and global economic growth, decarbonization and the circular economy are the key differentiating factors in the scenarios. As a result, they also directly influence the key technologies relevant in these scenarios.

Among others, the following starting points for the future-oriented further development of hydropower plants emerged:

- With their high number of full-load hours and low generation costs, hydropower plants are perfectly suited to the production of synthetic fuels and chemicals essential for decarbonization. Hydropower plants adapted and optimized for the production of synthetic fuels offer an opportunity here, with a particular focus on the concepts of power-to-gas and power-to-liquid. No risks through decarbonization have currently been identified, since the demand for both renewable energy and energy storage systems will increase. Also, existing reservoirs are needed to ensure the supply of drinking water and flood control.
- Voith supplies highly efficient pumped storage plants that can store large quantities of renewable energy with a high level of efficiency. The use of water as the storage medium, as well as the almost complete recyclability of the materials used, makes pumped storage the ideal storage system for renewable energy. Today, over 90 % of storage systems for electrical energy are based on pumped storage. Pumped storage power plants that work with a completely closed water cycle and are therefore not reliant on extracting water from natural reservoirs are currently being planned.
- Hydro generators as “phase shifters with rotating masses” (synchronous condenser) contribute to grid stabilization. Due to their large mass inertia, they can react to grid disruptions within seconds and thus counteract grid instability. Voith Hydro generator technology provides solutions for this and also offers some technical advantages over conventional applications with turbo generators.
- Hydropower is a key technology for the production of “green” – i.e. renewably generated – hydrogen, one of the key pillars of successful decarbonization. Above all, run-of-river power plants, some of which have more than 6,000 full-load hours per year and entail relatively low costs, offer ideal conditions for optimally utilizing electrolysis plants.
- Reservoir sedimentation in storage reservoirs is a key future issue for hydropower and Voith has developed an innovative business model in this service area: the Sediment Care program. This combination of technical and contractual instruments aims to replicate the natural flow of sediment in the river as closely as possible while guaranteeing plant performance to power-plant owners. This way we enable continuous sediment permeability and thus environmentally and fish-friendly operation. The basis of this program was close communication with several of our customers. The first contract with a customer in Austria has already been signed. The productive phase of this first pilot project will begin in May 2023, as planned. Product development continues and environmental certification is planned as well.
- Together with our customers, we bundle technical and system-relevant data from power plants and their infrastructure securely in the cloud. This allows us to visualize and analyze operational processes and develop self-learning models for informed and future-oriented decisions. Digital solutions monitor the physical assets and environment of hydropower plants. This represents an improvement in safety for people, critical components, and the environment. At the same time, we are meeting the challenges of increasing digitalization with our intelligent cybersecurity solutions and fulfilling the increased cybersecurity requirements for large hydropower plants.

Voith technologies play a decisive role in minimizing the environmental impact of hydropower plants – from improving water quality through aerating turbines and oil-free hubs that prevent water contamination, through innovative runners that improve fish passage through rotors, to innovative concepts that facilitate

sediment transport. Voith Hydro also works tirelessly to further minimize the residual environmental impacts. Tighter environmental protection standards and stricter legal framework conditions also require hydropower to make an ever-greater contribution to sustainability. Voith not only meets this challenge itself, but also provides its customers with the required technology. We are working with suppliers, environmental authorities, universities, and our customers to find the most sustainable and energy-saving solutions possible.

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### **Hi-tech for environmental protection**

With targeted research, we want to make hydropower even more sustainable. With a comprehensive approach, Voith covers everything from fish protection, through water quality, to energy efficiency. To give an example, the Voith StreamDiver compact turbine can be operated entirely oil-free. The machine has water-lubricated bearings and therefore does not emit any lubrication whatsoever into the water flow. This protects sensitive hydrophilic ecosystems from potential damage caused by spillage of even minute amounts of oil.

In the reporting period we expanded our StreamDiver offering into a product family. Hydropower operators now have access to a total of five StreamDiver variants with a power output from approximately 50 kW up to 1,450 kW per unit. These can be integrated particularly well into a wide variety of installation situations, such as existing dams and weirs. Instead of a building, a space-saving E-Container is sufficient – making a silent power plant possible with little construction effort.

Since 2020, Voith Hydro has sold a total of 22 StreamDiver systems to customers. Six of them will be utilized in the new hydropower plant being built by Berea College, together with a partner company, on the Kentucky River in the USA. The new StreamDiver turbines will deliver a total output of 3,030 kW and supplement an existing power plant there. They will more than offset its hydropower consumption and ensure the targeted environmental sustainability. Additionally, revenue generated by the project is intended to help educate students with limited financial resources, thus helping fulfill the College's mission.

Operators of hydropower plants also have the opportunity to use new assessment methods, such as a Fish Threat Index for fish populations, fish passage analysis at the power plant, and software for planning fish protection concepts. These and other analytical methods are also used to develop new types of turbines with improved fish protection, for example on the Columbia River and Snake River in the northwestern USA. In addition, there are innovative concepts such as the Alden turbine that operates with just three rotor blades and at reduced speed, reducing collision injuries to fish. The minimum-gap runner turbines developed by Voith in turn use a completely spherical hub and periphery. What is more, pressure changes can be reduced by shaping the barrel vane, thereby optimizing water pressure for fish passing through the turbine. The efficiency of such measures is proven by surveys of the run-of-river power plant in Washington State: Researchers there were able to demonstrate that more than 98 % of fish survived passing through the plant.

For more than 50 years now Voith has included environmental aspects in its development of mechanical and electric power plant equipment. Just recently, Voith Hydro participated in two research programs to develop innovative concepts and methods for fish protection: the EU project FITHydro, coordinated by the Technical University of Munich, Germany, and the FINI project led by the University of Innsbruck,



Austria. As part of FITHydro, 17 hydropower plants were surveyed, including three Voith plants. One outcome was the improvement of the evaluation of fish protection measures. In addition, the company funded and designed a turbine that is gentler than previous versions of water turbines, especially with regard to European eels; a model of this turbine has been tested. In the FINI (fish protection at low-pressure power plants) project, numerical 3D simulations and experiments were used to evaluate the effectiveness of bypass systems, turbines, and their interaction in fish protection on the basis of a run-of-river power plant. These findings can be applied to the construction of low-cost, low-maintenance power plants that also have only a small impact on the fish population and thus the river's ecology.

In the reporting period Voith also drove forward further innovations for protecting the environment in the field of generators. Particularly noteworthy is the further development of the high-voltage insulation system, which uses a new chemical component to help reduce environmental impacts even more.

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## **Megatrend decarbonization – energy efficiency and greenhouse gas emissions**

On the journey towards climate neutrality Voith Hydro is continuously working on bringing products with an ever-smaller CO<sub>2</sub> footprint to market. The avoided CO<sub>2</sub> emissions certified as part of the Group-wide analysis of CO<sub>2</sub> emissions from Voith products relate to electricity from hydropower projects in which Voith Hydro participated and that were connected to the grid in fiscal year 2019/20. Thanks to their long service life, these new projects, like the older ones, help avoid emissions over many decades. Pumped storage power plants are a proven and efficient method of storing energy: Due to their flexibility they are an important prerequisite for the integration of fluctuating solar and wind-power grid input. So far, however, we have not quantified the contribution of pumped storage projects to the decarbonization of electricity generation because, although essential, this contribution is indirect.

Voith Hydro contributes to decarbonization by constantly improving the efficiency – and therefore the energy efficiency and carbon footprint – of its products. Efficiency optimization is continually in focus in product development across the full Voith Hydro product spectrum. While plant energy consumption is an important cost factor in hydropower generation, it is of only minor significance when these plants are in operation.

The generation efficiency of our plants is also the dominant criterion in our customers' evaluation process. As a result, the continuous optimization of energy efficiency is essential to ensure our products remain competitive. To this end, Voith operates test rigs in the Brunnenmühle in Heidenheim, Germany, that are among the best of their type worldwide. At the same time, Voith Hydro's Development teams have access to state-of-the-art supercomputers, enabling them to carry out advance development.

In May 2021, the Voith Hydro Group Division presented a new generation of hydraulic turbine regulators named HyCon GoHybrid. This combines the safety of conventional systems with the advantages of new technologies, especially with regard to potential savings in oil and energy consumption. The new regulator reduces the amount of oil required by up to 60% compared to conventional high-pressure units, and by up to 90% compared to low-pressure units. At less than 10% of the amount of energy that a conventional unit would consume, the projected energy savings were actually exceeded. Initial applications have

confirmed the expected savings in operation. In addition, GoHybrid does not generate any noise during control or pump operations, thus improving the working environment in the power plant.

Voith Hydro has taken a leading role in the EU-funded XFLEX HYDRO project. Over the four-year project period up to 2023, the objective is to demonstrate how smart hydropower technologies can enable a low-carbon, reliable, and stable energy system. For the Frades II pumped storage power plant in Portugal, Voith Hydro supplied two variable-speed pump turbines, two asynchronous motor generators, the frequency converters, and the control technology, as well as steel hydraulic engineering components. As part of the project, Voith Hydro leads the development and implementation of additional solutions to make the Frades II demonstrator even more efficient. The goal is to extend the power range by operating the variable-speed machines in the “short hydraulic circuit”, which means the availability of renewable energy in the energy mix can be increased. By optimizing plant operation using multidimensional maps and optimized operating transitions, maintenance intervals are extended and downtime is minimized. In addition, power plant efficiency is increased by optimizing and reducing the power consumption of auxiliary operations. In fiscal year 2021/22, successful tests of this concept with a model of the pump turbine were carried out at Voith Hydro’s Research and Development Center in the Brunnenmühle. These tests now serve as input for a comprehensive demonstration at Frades II.

## **Megatrend digitalization – towards the smart hydropower plant**

Full-lifecycle solutions for predictive maintenance as well as the repair, overhaul, upgrading, and retrofitting of Voith Hydro products help to conserve resources while increasing efficiency. Residual life calculations are applied here that allow the degree of wear and the residual service life to be determined by analyzing the mode of operation and performing specific system measurements. This means that maintenance and servicing work does not have to take place at fixed intervals, but on the basis of the degree of wear, making better use of materials.

Against the backdrop of advancing digitalization, Voith Hydro sees the development of sensor technology as a prerequisite for enhanced interconnectivity on the journey to making the networked digital power plant a reality. In 2018 Voith Hydro founded the OnPerformance.Lab: Here, Hydro specialists analyze operating data from hydropower plants and provide specific action recommendations for improving productivity, avoiding unplanned shutdowns, and optimizing plant security. Numerous hydropower plants already use analysis services such as remote support and Digital Asset Health Assessments from the OnPerformance.Lab. The evaluation is performed by aggregating several hundred operating signals and derived characteristics into standardized diagnostic ratios, making it possible to display the current technical health status of a plant simply and clearly. In addition, initial individual optimization approaches are defined within the scope of co-development projects, according to the plant type. The high level of interconnectivity offered by the individual systems permits automated analysis, a unique design feature. New IIoT (Industrial Internet of Things) solutions combined with the know-how of our experts from the OnPerformance.Lab are enabling the transformation of the system into a smart hydropower plant.

Our focus remains on optimizing the maintenance, repair, and operation process with proprietary software and service solutions. In addition to developing purely data-based approaches for pinpoint prediction of unplanned outages or maintenance work, development of new sensor technology was driven forward in the reporting period, with further pilot facilities installed to validate new sensor

technologies. More than 60 power plants are now digitally connected to Voith Hydro, which allows various approaches to remote maintenance and optimization to be tested in practice.

## **Long service life, repairability, and recyclability – maximum availability is our goal**

A decisive quality characteristic of machines and systems provided by the Voith Hydro Group Division is their long service life – and this is also an integral part of plant specification. Hydropower plants are designed for a specific number of operating cycles, which generally guarantee a service life of at least 40 years. Against this background, all Voith products used in them can be upgraded, retrofitted, or repaired even after many years.

As part of our HyService activities we support power plant operators in maximizing the useful life and availability of their facilities. During inspections and repairs (e.g. cavitation repairs or generator rewinds), we take care to recondition all existing components for further use wherever possible. In the case of modernizations, generally due after 30 to 40 years, we plan to achieve the best possible improvement in plant efficiency together with our customers, while preparing operation-critical parts of the plant for further usage. In particular, the diagnostic evaluations of plant operating data on the current condition of systems, subsystems, and components of hydropower plants support plant operators in the safe operation of their plants and thus also provide the option of extending runtimes until fundamental rehabilitation measures are required and carried out.

In order to raise resource efficiency even further and improve the repairability and therefore longevity of products, the Voith Hydro Group Division employs an increasing number of modular mechanical engineering models as well as the targeted use of components constructed for and proven in previous projects. In 2022, for example, the “neutral bill of materials” for modularized components was used for the first time, making it possible to reuse identical designs worldwide with little effort. This is based on our objective of not only designing products and machine components for multiple uses, but also making them easy to use. At the same time, reusing designs tested and proven in operational experience allows us to guarantee the quality of our products. Consequently, we ensure that our products are modularized by using as many identical components as possible. In addition, the best possible qualification of our supply chain partners ensures optimal product quality.

The most important goal for Voith Hydro with regard to material utilization is the consistent reduction of material costs. The biggest lever for this is of a technical nature, in particular in the context of the recent extreme price increases for raw materials and materials requiring high energy for their production. In fiscal year 2021/22, for instance, around 80 % of savings were achieved through technical measures that resulted in an improvement in material efficiency. Examples of this are the avoidance of waste due to punching and laser-cutting generator sheets by suppliers optimizing roller widths, using burnout waste to manufacture large welded structures for the production of transport stiffeners, and designing cast and forged semifinished products to be close to their final shape and thereby reduce machining work.

Not least thanks to their very long operating lifetimes, the recycling of the materials in a hydropower plant is a cross-generational topic. The majority of the materials used in a hydro plant can be very easily

recycled, since these are predominantly steel and copper. For example, the proportion by weight of recyclable materials in the machine sets is more than 95 %. Thanks to the plant's long service life, the energy consumption required for recycling is only of minor significance in the total energy footprint. Examples of the service life of hydropower plants being extended significantly through modernization in the reporting period are the power stations in Paulo Afonso IV (Brazil), and Wanjii (Kenya).

The **Paulo Afonso IV hydropower plant** is part of the Paulo Afonso complex in northern Brazil, which consists of the four hydropower stations Paulo Afonso I, II, III, and IV. Paulo Afonso IV is the fourth-largest power plant installed in Brazil and has been in operation since 1979. It is made up of six turbines with a capacity of 410.4 MW each.

Having won the public tender, Voith Hydro was awarded the contract for the complete modernization of the plant. The BIM (Building Information Modeling) methodology will be used here for the first time. The modernization includes the entire electro-mechanical equipment of the power plant and will take five years.

The use of new, more powerful turbines and the replacement of the Francis rotors will increase the capacity and efficiency of the power plant. In addition, the measurement system as well as the protection, control, monitoring, and regulation systems of the plant will be digitalized. In future, these will be able to generate more energy with the same amount of water. This increase in capacity alone can supply an additional city of 170,000 inhabitants with electricity without impacting the environment.

In the reporting year, the comprehensive modernization of the Wanjii small hydropower plant in Kenya was completed, a facility over 60 years old. Turbines, generators, control technology, and the entire electromechanical equipment of the plant were replaced. This also increased the power plant's output by more than 20% to now 9 MW, so that the surrounding communities in this remote region can continue to be supplied with decentralized energy. This simultaneously provides the prerequisite for positive economic and industrial development in the region. Another focus of the modernization was ease of maintenance: In the future, individual components can be replaced as needed with minimal effort. In addition, the power plant's electricity generation can now be controlled remotely from the plant operator's headquarters in Nairobi.



**Fact base**  
Further information  
on social and  
environmental  
impacts – Voith Hydro

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## Voith Paper

The Voith Paper Group Division is a pioneer in the paper industry and a full-line supplier, delivering integrated project solutions from a single source that combine a unique product portfolio with services and digital products and services, as well as project management and consulting. Its products and components reflect its experience as a process provider, helping to increase the capabilities and efficiency of the entire paper production process while boosting our customers' productivity and profitability through reduced resource consumption. Thanks to Papermaking 4.0, paper manufacturers can optimally interconnect their equipment and raise their competitiveness through the effective and secure use of the data generated.

Product group	Share of Group Division orders received in %
<b>Projects</b> <ul style="list-style-type: none"> <li>• New facilities – paper machine</li> <li>• New facilities – stock preparation</li> <li>• Rebuilds</li> </ul>	37
<b>Roller shells and clothing</b> <ul style="list-style-type: none"> <li>• Paper machine clothing</li> <li>• Roll shells</li> <li>• Press sleeves</li> </ul>	33
<b>Products &amp; Services</b> <ul style="list-style-type: none"> <li>• Spare parts</li> <li>• Performance-enhancing components</li> <li>• Services: Maintenance and repairs, training, and audits</li> <li>• Smaller modifications to facilities</li> </ul>	30

## Trend analyses – strategy for a sustainable product portfolio

The megatrends of decarbonization, digitalization, and the circular economy are key components of the future scenarios for the Voith Paper business segment that were developed as part of the Group-wide Scenario Foresight Project. Voith Paper has transposed these into strategic goals for 2025 and defined further objectives through to 2040. The scenarios are reviewed annually. Due to current political and economic developments, in particular the Corona pandemic and the war in Ukraine, a comprehensive revision of the scenario project was launched in 2022, with completion planned for 2023.

In addition, trend developments are systematically recorded and incorporated into portfolio decisions for new developments as well as business development. Accordingly, Voith Paper aims to optimize the paper production process with innovative products and to enable sustainable, efficient, and resource-saving production, as well as process and technology advances for new low-carbon paper mills. We intend to continue further reducing the environmental impacts of paper production while increasing plant cost-effectiveness.

Voith Paper has set ambitious goals for the future of paper production:

1. 100 % carbon-neutral paper production by 2030 by using energy-optimized products, digital solutions, and power from renewables
2. 90 % freshwater savings thanks to a completely new paper production process using disruptive technologies by 2030
3. 90 % recycling rate with new fiber streams by 2030.

## Sustainability criteria already considered in product development

The product development process in the Voith Paper Group Division follows the stage-gate process. In the development phase, products undergo an assessment that examines the following key sustainability parameters: water, energy, fibrous raw material, quality, and efficiency. The new Voith Paper strategy focuses on six further key business segments: new facilities, spare parts, wearing parts, services, digitalization, and rebuilds. This will enable us to maintain an even better view of the complete product lifecycle in the development stage in future. Safety, efficiency, and sustainability are key differentiation

criteria and are of vital importance in generating customer benefit. We are driving these topics forward in joint development partnerships with our customers to assure high sustainability and safety standards. This approach also provides the basis for modifications and improvements that help our customers save resources in paper and cardboard production, while minimizing the loss of fibrous raw materials. We are also working on avoiding production disruption at paper manufacturing facilities resulting from adhesive contamination of reused wastepaper.

For example, sensors are being developed to detect and quantify agglomerated adhesive contaminants that are finely distributed in water circuits. They serve as the basis for fully automatic control concepts that reliably keep impurities below a critical level to avoid production disruptions. At the same time, this minimizes fiber losses in the sorting processes. A further focus is developing the ability to manufacture high-value, robust packaging from recycled fibers with minimal fresh fiber input. Alongside this, Voith Paper is always looking for opportunities to increase the recycling rate of its own production processes.

## **Megatrend decarbonization – energy consumption and greenhouse gas emissions**

Worldwide, the paper industry is facing the challenge of significantly reducing CO<sub>2</sub> emissions. This applies especially to Europe where, in its Roadmap 2050, the Confederation of European Paper Industries (CEPI) aims to achieve a reduction in CO<sub>2</sub> emissions of 80 % in comparison with 1990 levels – an enormous challenge for the entire paper value chain. The Green Deal agreed by the EU envisages CO<sub>2</sub> neutrality in the EU by 2050 and stipulates a 55 % reduction in greenhouse gases versus 1990 emission levels by 2030. Voith Paper wants to contribute to mastering this challenge and pursues the goal of only developing products and services that will have a positive impact on customers' energy efficiency and production costs in future.

In four defined focus areas, technologies and processes will be developed or optimized with the clear goal of cutting CO<sub>2</sub> emissions and conserving resources in paper production:

### **1. Process improvements and technologies – potential: 20 % lower CO<sub>2</sub> emissions**

The ongoing further development of products and technologies is aligned with our goal of lowering energy consumption and is already making an important contribution to reducing CO<sub>2</sub> emissions. For instance, innovations in roll covers are reducing energy consumption in paper production. The development of a new industrial cleaning product is also playing its part: The completely new design reduces energy consumption by 30 % while enabling a significant increase in throughput, without any adverse effect on cleaning performance. The market launch took place in February 2022, and the respective customer has now confirmed the expected savings. Thus, 3.13 million kWh less energy is required per year in the initial installation alone. The next conversions of existing production facilities are already in preparation. In addition, a modified weaving process developed by Voith was used to produce special coverings for drying sections of the paper machine: In Voith production, these reduce manufacturing time for coverings by 20 %, also reducing the energy consumption in comparison to standard coverings. Voith Paper has also developed an innovative drying system thanks to new manufacturing methods: The HelioX radiation grille features new manufacturing processes and special coatings that enable significantly higher energy efficiency. With these new, more efficient high-performance emitters, total gas savings of 100,000 MWh can be achieved over the next four years.

## **2. Digital solutions – potential: 10 % lower CO<sub>2</sub> emissions**

Digitalization solutions and smart, AI-based process controls are already delivering efficiency and availability improvements at paper production facilities. In future these will make an even greater contribution to reducing CO<sub>2</sub> emissions and conserving resources. Decisive factors will be the efficiency of the machines used, followed by the optimization of paper production processes. A solution soon to be launched visualizes the energy consumption and CO<sub>2</sub> emissions, providing the basis for consistent energy optimization.

## **3. Landmark innovations in paper production – potential: 50 % lower CO<sub>2</sub> emissions**

Last but not least, even the very mature industrial process of paper production harbors potential for significant reductions in energy consumption and therefore also in the quantity of CO<sub>2</sub> emitted. To achieve this, fundamental and possibly also disruptive new developments will be required. For example, Voith Paper is an active partner in a project for a model factory in the town of Düren in North Rhine-Westphalia. This project was initiated by the paper industry, supplier industries, and by universities and institutes, in order to research CO<sub>2</sub>-neutral paper production and put the findings into practice on a pilot-plant scale.

## **4. Renewable energies and energy storage – potential: complete reduction of carbon emissions**

A further focus area offering great strategic leverage is the use of energy from renewable sources, as well as from residues and production wastewater. Today, Voith is already using anaerobic reactors to purify water and generate biogas, reducing the share of energy from fossil fuels and contributing to the decarbonization of paper production. Energy storage technologies create the opportunity to minimize energy losses further and to produce cost-effectively – even in difficult operating conditions, such as fluctuations in the availability or price of renewable energies.

## **Megatrend digitalization – an opportunity for differentiation**

Digitalization offers Voith Paper the opportunity to use its core strengths to differentiate itself even more clearly from the competition. The digitalization of highly complex paper production processes will determine competitiveness in the future. In the project business, Voith Paper aims to set the standards in plant engineering required for scaling and sustainably implementing digitalization by incorporating digital thinking at an early stage. The focus here is on the development of smart products and cloud-based data analysis techniques. The aim is to prepare both instrumentation and automation for the digital age under the banner of Papermaking 4.0. For instance, Voith Paper is working on increasing the availability of paper machines as well as improving process efficiency, which also includes predictive maintenance solutions. A further driving force of the Voith Paper digital portfolio are the OnEfficiency products that can help customers save fiber, chemicals, water, and further raw materials when operating their facilities.

## Megatrend circular economy – using resources efficiently

Voith Paper has enjoyed many decades of market success with recycling technology for wastepaper as a raw material for paper production, for wastewater, and for rejects. Today, the Group Division leads the market in feedstock preparation solutions and generates more than 50 % of its sales with paper production plants that process recovered paper. In the stock preparation area, paper recycling plants account for almost all sales.

The paper value chain is very stable and offers a high recycling rate – around 60 % worldwide and 71.4 % in Europe. To expand this share and to continue to close the cycle, optimized technologies for feedstock preparation are being developed. In this it is important to develop additional process steps and to customize processes in order to safeguard the use of recycled paper in paper production. A particular challenge regarding recyclability is the loss of large amounts of graphic paper used in printing newspapers and magazines, for example. In order to offset the resulting lower strength potential of the used-paper mix and to contribute to maintaining the recycling loop, Voith Paper is working on new solutions to improve resource efficiency, and more specifically material efficiency. This includes hard nip sizing, which enables a reduction in the required starch spray application and thus the use of fewer raw materials and less drying energy. Furthermore, the control module OnEfficiency.Strength allows lower fiber consumption without affecting the properties of the product.

Voith Paper is a member of an industry consortium consisting of more than 100 well-known companies operating throughout the entire fiber-based packaging value chain. The initiative aims to increase the recycling rate of fiber-based packaging from 82 % to more than 90 % by 2030 and to reduce CO<sub>2</sub> emissions in the packaging lifecycle. Against this background, Voith Paper carried out extensive pulping tests in fiscal year 2021/22 on ten different barrier-paper samples provided by the 4evergreen industry alliance. The objective is to evaluate the recyclability of the samples and pinpoint the adjustments needed to ensure recyclability in the pulping process.



For more  
information:  
4evergreen

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Voith Paper products are developed so as to achieve both low fiber loss and a reduction in reprocessing chemicals. The area of plastic packaging provides an opportunity to replace plastic packaging with paper and cardboard products, which are highly attractive due to their very good recycling properties. This requires the further development of paper and cardboard boxes so that these can assume the barrier function of plastics – repelling water, fat, and gaseous substances – while at the same time retaining their recyclability. The application of such barriers as a continuous thin film is a major challenge that we are working to meet, together with our customers. To this end, Voith has made major investments of several million euros in pilot facilities for paper calendering as well as for the application and drying of barrier layers on paper, which map the industrial process 1:1. With the help of these pilot facilities we are pursuing the optimal process engineering concepts and set-up parameters for the different barrier formulations, together with our customers. We are also evaluating the recyclability of the barrier-coated papers.

Alongside energy use, water withdrawal is the decisive factor in the papermaking process – from both an environmental as well as an economic standpoint. In addition to the successful HydroSeal and FilmLube products, the newly developed CleanLine Excell can save a large quantity of water when cleaning the surfaces and structures of forming and press felts. The new cleaning system uses 95 % less water, making it much more effective than conventional cleaning systems. The need for chemical cleaning is also significantly reduced.



The concept of the Zero Effluent Mill Process is key in progressing towards a circular economy. Voith Paper is involved in this project together with other manufacturers of packaging papers. The project is intended to demonstrate that a paper facility can operate without any resulting wastewater and with a minimal freshwater input of only around 1.5 m<sup>3</sup> per metric ton of paper produced. With an annual plant production output of 750,000 t of paper, this equates to annual freshwater savings of around 3.75 million m<sup>3</sup>. The recent realization of this “AquaLine Zero” concept by Voith as part of a new plant project with our customer confirms the achievability of the targets set and shows how a significant reduction in water and wastewater volumes can be achieved through modern process design.

## Longevity of products through repairability, upgradability, and recyclability

The machines and systems of the Voith Paper Group Division are designed for a particularly long service life. Our machines initially run for around 20 years and can be brought back to state of the art repeatedly through small and large rebuilds. This allows us to easily extend their service life by several decades. With regard to a circular economy, it is essential to ensure our plants can be repaired and upgraded to keep them working reliably and efficiently for many years. Together with our customers, we take great care early on during plant installation to ensure optimal operating conditions in this respect. Special service audits provide the opportunity to inspect, recondition, and repair individual machine components or even whole production sections. For example, buildup welding of rotors for stock preparation machines can be used to improve operating conditions, also in terms of energy and raw material consumption. Regular maintenance and the appropriate documentation deliver an overview of plant condition, also contributing to the optimal operation and improved service life of the plant. Through mechanical repairs and upgrades of the rolls in our workshops or at customers' locations, we help to significantly extend the service life of the rolls in paper machines. This service is increasingly in demand, which will allow this segment of our business to grow further.

Innovative products such as the OnCare.pmPortal and ID tagging enable Voith as a service partner and a spares and wearing parts (consumables) supplier – as well as customers themselves – to optimize asset management (rolls, QualiFlex sleeves, and fabrics). Logically, this helps prevent plant downtime due to the failure of components that are inadequate or have been serviced too late. As a result, Voith Paper's concept is designed holistically and can also integrate competitors' assets, thus enabling the efficient use of resources in wearing-parts logistics. In addition, we are developing alternative products made from bio-based or recycled materials for relevant product segments in the Fabric & Roll Systems (FRS) division. For example, in September 2022 Voith launched AiroGuide Tune Green, the first DIN CERTCO-certified bio-based guide roll cover for more sustainable paper production.

At the same time, we are working intensively on increasing the recyclability of wearing parts. One example of this is the production of our QualiFlex press sleeves: The manufacture of these press sleeves requires a surface treatment which generates production waste that was previously incinerated. To promote the circular economy in our production processes, we contracted a recycling partner in the fall of 2022 to collect the manufacturing waste. This is delivered back to the original supplier, who recycles 100 % of the material in a chemical process and returns it to the material cycle. The process lets us recycle about 5 metric tons of material per month.



**Fact base**  
Selection: Technologies for improved social and environmental impact of Voith Paper

## Voith Turbo

The Group Division Voith Turbo specializes in intelligent drive solutions, systems, and pioneering service solutions. Customers from numerous sectors such as energy, mining and mechanical engineering, marine technology, as well as rail and commercial vehicles rely on Voith's cutting-edge technologies and comprehensive expertise. Megatrends such as decarbonization and digitalization influence our business, as do regulatory interventions and new requirements on the part of our customers.

Against this background, Voith Turbo has further elaborated the scenarios on the topics of mobility, water, and environmental technologies as part of the Foresight project. Strategic search areas for innovations and technologies were derived from the findings of the project, including in the fields of alternative drives, artificial intelligence, and the use of new and hybrid materials. Specific technology roadmaps for the electrification of powertrains and further digitalization of product lines were also developed.

Product group	Share of revenue of Group Division in %
<b>VT Mobility</b> of which rail (43%)	62
<b>VT Industry</b> of which wind generators (4.2%)	36
<b>VT Others</b>	2

## Our Future Vision VT 2030+ for a sustainable product portfolio

A significant part of Voith Turbo's current business activities faces major challenges ahead. A vision for the future of the Voith Turbo Group Division was therefore presented in the reporting year 2021/22, which we have named Future Vision VT 2030+: It describes our vision and our ambitions for the future direction of the Group Division and underlines the urgency with which we must shape the transformation. Our Future Vision VT 2030+ puts the challenges in concrete terms and defines goals: How do we intend to transform the core business, open up new growth areas, increase profitability and quality, and focus the product portfolio? It also outlines how Voith Turbo intends to drive internal change with the help of an evolved corporate culture, for the next ten years and beyond.

Voith Turbo products and services already have a positive impact on the sustainable use of energy today. In the Mobility Division, in particular these include innovative solutions for the rail vehicle industry, electrified drive systems for city buses, and the electric Voith Schneider Propeller for marine applications (eVSP). With the Industry Division re-entering wind power in 2020, Voith is pushing ahead with the continuous decarbonization of power generation. In this way, Voith Turbo meets the growing demand for solutions for carbon-neutral power generation, further expanding its core business in the field of renewable energies. In addition, the Industry Division launched a range of future projects in the field of hydrogen infrastructure.

In the Mobility and Industry Divisions we have already identified ten growth areas and defined the products and solutions with which we want to achieve sustainable growth. We are committed to developing promising growth areas with a view to the megatrends of decarbonization, electrification, digitalization, and urbanization, and to focusing our investments on cutting-edge sustainable technologies.

## Guideline for sustainable product development

Voith Turbo has set itself the goal of reducing the use of materials with negative impact on people and the environment to an absolute minimum. The product development process already incorporates this requirement right from the initial stages, with harmful materials replaced by other materials as early as the engineering phase wherever technically and economically feasible.

Voith Turbo has established a guideline for implementing sustainable product development and improved energy efficiency and climate footprint: This covers all phases of the product development process, from developing ideas, through the definition, feasibility, and development phase, to the validation phase. The three steps, Green Design, EcoDesign, and Sustainable Design, describe all material sustainability criteria and define specific requirements. For example, Green Design encompasses aspects of material selection, ingredients, packaging, repairability, and end-of-life considerations. EcoDesign explains the principles of Life Cycle Assessment according to ISO 14040 and 14044. Sustainable Design adds social and legal aspects such as fair competition and ethical conduct in business relationships.

## Megatrend decarbonization – focus on energy efficiency

For Voith Turbo, decarbonization and the path towards e-mobility remain the key megatrends. These once again accelerated during the reporting period as a consequence of significantly more demanding emissions targets.

The fields of action for reducing CO<sub>2</sub> emissions are divided into four areas:

**1. Process improvements and technologies:** Voith Turbo is driving forward the optimization of its products' energy efficiency and is conducting Life Cycle Assessments for selected products. To meet the growing demands worldwide regarding climate protection and CO<sub>2</sub> reductions, our continuous further development of products and technologies to reduce energy consumption is supplemented by developments in the area of electric drives in all segments in which Voith Turbo is active: commercial vehicles, rail, shipping, and mining. Our goal is to offer our customers increasingly energy-efficient products by continuously improving their efficiency. To do so, we drive a continual improvement process in which customers are also involved. Here we always focus on the impact of using a Voith component on the Total Cost of Ownership (TCO). Energy costs account for by far the largest share, so reducing these takes top priority for all business areas at Voith Turbo.

Many products already meet the highest requirements today. With AeroMaxx, for example, Voith Turbo's Industry Division offers the opportunity to reduce energy consumption and oil requirements of power generation systems' gearboxes by up to 30 %, by using new types of slide bearings and separating the lubricating fluid from the cooling oil. The energy consumption of the VECO Drive was also reduced by a third in previous years. The VoreconNX has a 20 % higher energy efficiency in partial load operation.

Further, Voith Turbo Mobility is developing DIWA NXT, a new type of transmission for city buses that will enable fuel savings of 7 % (mechanical optimization) and an additional 9 % thanks to the optional mild-hybrid system (recuperation unit). Overall, this achieves a 16 % reduction in consumption compared to the previous transmission generation – the equivalent of 17 % lower carbon emissions.

The Turbo Compound System from Voith can significantly reduce fuel consumption and CO<sub>2</sub> emissions for heavy commercial vehicles. In addition, by developing a disconnectable compressor, an 80 % reduction in power loss can be achieved for our air compressors. Voith Turbo products also contribute to lower CO<sub>2</sub> emissions in rail transport. While in Raildrives, optimization is achieved through weight reduction and constant improvements in efficiency, in Railpacks the 8 % reduction in fuel consumption compared with the competition marks a major step towards reducing CO<sub>2</sub> emissions.

2. **Digital solutions:** Products and solutions from the VT Mobility und VT Industry Divisions are leveraging digitalization and smart process controls to contribute to more efficient energy use and a longer service life for products across all markets served by Voith Turbo. One example is BeltGenius, an innovative digital system for simulating entire conveyor systems in the mining sector, developed by the VT Industry Division. Efficient monitoring, comparison, and optimization of belt conveyors and conveying systems enable reductions in plant downtimes and energy savings of up to 10 %. Likewise, the VT Mobility OnCare and OnEfficiency solutions, cloud-based analysis processes for optimized fleet management, enable additional CO<sub>2</sub> reductions due to lower consumption of fuel. With Smart Accelerate, intelligent, situation-dependent limitation of vehicle acceleration achieves a fleet-average fuel saving of 5 % for city buses. In addition, city buses consume up to 12 % less fuel, depending on the application, thanks to the support of the Start-Stop function in the Voith bus transmission. A similar principle contributes to lower CO<sub>2</sub> emissions in rail transport: Thanks to the Voith Start-Stop engine, shunting locomotives consume 11,000 liters less diesel fuel on average per year.
3. **Renewable energies and mobility transformation:** Voith Turbo is paving the way for electro mobility. Voith Turbo Mobility is addressing this challenge by developing hybrid transmissions and a fully electric drive. The aim here is the market launch of uniquely efficient systems in the competitive environment; to this end, extensive projects have already been launched. The VEDS (Voith Electrical Drive System) is an electric drive system for city and intercity buses and medium-heavy trucks. Production of the system has started and has received orders from all over Europe. According to tests, VEDS achieves significant efficiency advantages over the competition. We intend to provide these efficiency benefits to heavy trucks and special vehicles as well by developing the new VEDS HD+. With the delivery of the first automated freight train couplers to Swiss Federal Railways (SBB), Voith is contributing to strengthening rail freight transport, which can make a substantial contribution to lowering CO<sub>2</sub> emissions.
4. **Groundbreaking innovations:** For Voith, the topics of hydrogen production and utilization are of major importance. We are therefore stepping up our involvement in all relevant areas of the hydrogen value chain and covering important key areas, from generation to transport via hydrogen pipelines, storage in high-pressure hydrogen tanks, and utilization by means of hydrogen fuel cells and components for the hydrogen-electric powertrain. A current example: At IAA Transportation in September 2022, Voith presented the first prototype of a hydrogen-powered city bus. The vehicle is equipped with a hydrogen engine, the Voith DIWA NXT mild hybrid system, and a Voith water tank system. This brings Voith another important milestone closer to our goal of playing a key role in the global decarbonization of public transport.

## Megatrend digitalization – efficient systems to develop optimization potentials

Voith Turbo continues to focus on the digitalization of its product portfolio to enable even greater resource efficiency. To secure this, Voith Turbo is working on various systems for status monitoring of

components and systems. This is intended to avoid critical operating conditions and support product reliability and long service life.

One example of this is the Fingerprint Project: Its purpose is to fit our equipment with intelligent monitoring systems and sensors at such an attractive price as to maximize the number of applications for which they can be used. The project is currently being trialed by various customers on universal joint shafts used in steel mills, for instance, on a Vorecon and on a VECO-Drive. All test facilities are fully operational; we are logging the signal data and will initially use these within a Condition Monitoring System (CMS). The focus is on gathering and evaluating critical signals to learn more about the load profile of drive components, as well as their predicted service life; this enables appropriate forecasting in order to avoid premature failures. In a second project phase, data-based performance improvements will also be developed using artificial intelligence.

## **Circular economy principle – contribution to repairability, upgradability and recyclability**

Long service life is a key quality of Voith Turbo's products and at the same time means they consume fewer resources. All Voith Turbo products are designed for a very long service life – many of our products are in use for 40 years or more, so we design them to be repaired and reconditioned after this period of use to remain in service for several more decades. Our industrial gear units therefore comply with ISO 6336 and American Petroleum Institute (API) 613 and 617 standards for durable design. Our service promise is based on supporting systems and components with spare parts over a very long period and therefore avoiding early scrapping. This remanufacturing is resource-efficient since it prolongs the products' lifecycle, while our customers benefit from lower TCO due to the longer life span. In addition, we have established our own returns business for the three largest product areas in VT Mobility (Transmissions, Retarders, and Scharfenberg Couplers). This means that products are brought back to our facilities for repairs, where they are reconditioned and upgraded where possible. In addition, most of our products are made of metals such as steel and aluminum and can therefore be recycled efficiently at the end of their lifecycle even after decades of use.

We are now also able to restore spare parts with low resource consumption thanks to newly developed additive manufacturing processes – these eliminate the need to cast new parts, for example. Digitalization in service and production also supports the overhaul of returned bus gearboxes and leads to design improvements, an intelligent spare parts supply, and significantly optimized gearbox service life. As part of modularization and value analysis, we are working on further increasing the recyclability, upgradeability, and repairability of our products. This is enabled by intelligently designing component interfaces, for instance, so that individual modules can be swapped out quickly and easily without having to replace the entire product.




**Fact base**  
Further information  
on social and environmental impacts –  
Voith Turbo

## 4.2 Responsibility in the supply chain

### Management approach

Voith works to build trust-based and long-term supplier relationships that focus on quality, service, and cost effectiveness. Controlling mechanisms for compliance with laws and environmental and social standards in the supply chain ensure that Voith's values and requirements as well as legal stipulations are met at all times.

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 **Fact base**  
Procurement markets

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In the 2021/22 fiscal year we once again purchased a broad spectrum of goods and services worth almost € 2 billion from our external suppliers and service providers. Measured by overall invoicing volume, the purchase of complete plant systems was the largest item of expenditure.

For the most part, responsibility for sustainability topics within Voith's purchasing activities lies with our Corporate Strategic Purchasing (CSP) Department. This also includes specific aspects of environmental and social supplier compliance. Current topics are coordinated with representatives of the Group Divisions in cross-Divisional Purchasing Committees and translated into appropriate measures. Our fundamental principles on resource conservation as well as environmental and social responsibility are anchored in our Purchasing Strategy and in the General Purchasing Conditions (GPC). Together with our Code of Conduct, these set out the framework for purchasing activity at Voith. Compliance with the law is a matter of course for our company. We pay particular attention to occupational health, safety, and environmental protection as well as to the prohibition of child and forced labor. At Voith, requirements for the declaration of hazardous substances and the handling of conflict minerals are also defined throughout the Group in our GPC. By confirming the requirements set out in our GPC, suppliers commit to implementing appropriate measures in their organization and, with regard to their own supply chain, to work to ensure that conflict minerals – as defined in Sections 1502 and 1504 of the U.S. Dodd-Frank Act – are not contained in the products to be supplied.

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 **Fact base**  
Raw materials from controversial sources

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### Clear rules for working with suppliers

Our Code of Conduct is the core guide for all our purchasing activities. Together with our GPC, the CoC defines our understanding of partnership-based collaboration and sets out rules on dealing with compliance issues as well as environmental and social standards. These two policies serve as the basis for the contractual agreement with our suppliers, whom we encourage to pass on these same requirements to their own subcontractors. Another check of compliance with the social and environmental standards contained in our Code of Conduct takes place within quality management audits. By drawing up country-specific versions of our GPC we ensure that our Purchasing organization takes national particularities into account, for instance with regard to payment conditions, environmental requirements, and customs regulations. Voith uses a total of 39 country-specific AEB, either in English or the respective national language, in most cases even in both languages.

Against the background of the Supply Chain Act, during the reporting period we launched a revision in all regions of the existing framework agreements and the GPC. During this process, the existing documents are being supplemented to include human rights and environmental requirements, in line with the provisions of the LkSG. Among other things, Voith refers to the definitions of the International Labor



Organization (ILO) conventions, the Minamata Convention, and the Stockholm and Basel Conventions. In addition, preventive measures are provided for in the contractual agreements in order to support (e.g. through training) and be able to verify (e.g. through audits) compliance with human rights-related and environmental requirements at our direct suppliers. Starting in October 2022, the corresponding adjustments will be implemented in the contractual arrangements with Voith suppliers worldwide.

## New IT system in Purchasing provides comprehensive supplier information

At the beginning of the reporting year, the new IT system PurONE was set up in Purchasing. It is designed to increase purchasing process efficiency and support the effectiveness of measures by making comprehensive supplier information easily available – especially with regard to sustainability and compliance aspects.

The new system enables integrated supplier management and takes an end-to-end approach to communication and interaction with our suppliers. This way, PurONE covers all relevant processes, from registering suppliers through to confirming orders. PurONE is also closely dovetailed with our Enterprise Resource Planning (ERP) systems.

When suppliers register on the system, which includes a series of mandatory declarations such as completing a Compliance and Sustainability Questionnaire, they can update their details themselves, complete survey questionnaires, upload certificates, and, following explicit approval, respond to calls for tender and price negotiations. Further, the system includes a document database for contracts and contract-related documents such as Non-disclosure Agreements (NDA), as well as a certificate database that includes quality certifications. With regard to the Supply Chain Act, PurONE is also intended to be used increasingly for compliance and sustainability topics as well as to provide documentation for reporting to the German Federal Office of Economics and Export Control (Bundesamt für Wirtschaft und Ausfuhrkontrolle, BAFA). Further functionalities are planned or already implemented, such as a Supply Chain Act Risk Flag for critical suppliers, a status display for the Compliance and Sustainability Questionnaire, and an overview of all sustainability checks at suppliers with corresponding follow-up measures.

We can achieve even greater transparency in the purchasing process with electronic sourcing via PurONE. This makes it possible for suppliers to process requests online via the unified platform. Price negotiations on individual tenders can also be carried out online: This eliminates the need to travel to negotiate in person on location and reduces the environmental impact. A transparent and fair contract award process for all parties, internal award specifications, and “Golden Rules” for electronic auctions also ensure that compliance requirements are met at all times.

## Extensive training programs

We take all possible care to ensure that our employees are always fully up to date on legal compliance requirements, adherence to standard purchasing processes, usage of our IT systems, and our supplier negotiation rules. To this end, we require our people to take part in Voith’s global further education offer and the Purchasing School that is being set up. This includes comprehensive training programs specially developed for our Purchasing organization that cover all purchasing processes as well as the Purchasing Strategy. Our further training measures include compulsory one-day, on-site training modules on

Compliance, and the regular New Buyer Academy for recently hired Purchasing employees. Trainers also present key elements of the respective market culture and characteristics in courses at the Voith locations. Webinars and e-learning offers ensure relevant content is globally available and constantly up to date. Seminars and webinars are delivered in all Voith regions around the world.

In the reporting year, almost all Purchasing employees once again took part in training or e-learning courses. Overall, Purchasing employees completed 7,197 training hours in the year under review (previous year: 4,522). The increase in completed training hours is due in part to the new training courses for the PurONE purchasing system. Accordingly, the overall training effort in Strategic Purchasing increased to around 4,000 hours (previous year: 2,500).

In addition, ongoing compliance training was carried out. These mandatory events for Purchasing employees focused on the rules of the Code of Conduct, the relevant anticorruption laws, competition law, and occupational safety regulations. In addition, there are plans to expand the training content to include key human rights and environmental aspects as enshrined in the Supply Chain Act. All relevant information is publicly available on the Voith website within the supplier ecosystem: This includes the topics of compliance and sustainability, the Voith Code of Conduct, the GPC, documents on packaging and logistics guidelines, and empty container requirements among others.



## Conducting regular risk analyses

In order to comply with our human rights and environmental due diligence obligations, we designed and carried out a comprehensive risk analysis of our direct suppliers in the reporting year 2021/22. Due to our broad supplier base, we have defined various filters to appropriately identify and prioritize material human rights and environmental risks among our direct suppliers. Our ERP systems also provided the data basis for this.

The first step of the risk analysis was to apply a filter with regard to country-specific risks, resulting in a classification of individual countries into four risk categories. Publicly available indexes were used here to ensure as objective an assessment as possible. The relevant indexes were selected based on the human rights and environmental requirements of the Supply Chain Act. In order to make the scores of the different indexes comparable, they were scaled uniformly and standardized. The comparatively worst index value then determined the classification of the respective country. This methodology also takes into account the Environmental Performance Index to an appropriate extent, which assesses climate change, environmental health, and ecosystem vitality factors.

In the second step of the analysis, a filter was applied that maps product- and industry-specific risks. First, the MVO Risk Checker was used. This publicly available database is based on a range of sources related to social and environmental sustainability. The risks identified in this step were processed accordingly and broken down into 22 different sectors. Subsequently, this data basis was translated to Voith's material group keys. Thus, the material groups were also classified into four risk categories.



The set of Voith suppliers for whom a "high" or "very high" risk was identified in the two previous process steps comprises potentially critical suppliers according to the filter logic. These were then examined in more detail as part of the analysis. If suppliers are classified as critical in the risk analysis, they receive a request to complete the Compliance and Sustainability Questionnaire and submit it for



review via PurONE. If concerns persist after this or if there are indications of violations of our standards, an escalation process is initiated that results in concrete countermeasures and may ultimately lead to termination of the business relationship.

**Our social and environmental compliance approach for suppliers**

<b>Integrity check/critical countries</b>	<ul style="list-style-type: none"> <li>• The integrity check is an essential part of the creditor registration process (master data management).</li> <li>• It ensures that a supplier actually exists and that fraud, corruption or child labor incidents did not occur in the past; furthermore, creditworthiness checks / ratings are obtained regarding planned order volumes.</li> <li>• All suppliers are checked against critical country lists.</li> </ul>
<b>Supplier self-assessment compliance questionnaire</b>	<ul style="list-style-type: none"> <li>• The compliance questionnaire is part of the Voith Purchasing system PurONE and is mandatory for new suppliers in the registration / qualification process.</li> <li>• It contains mandatory questions about compliance which must be answered by each relevant supplier. Additionally, suppliers must appoint a contact person for compliance issues in their companies.</li> <li>• The questionnaire comprises all relevant categories of the German Supply Chain Act / LkSG – particularly social and environmental sustainability, compliance, and where applicable, self-assessment questions regarding supplier diversity.</li> </ul>
<b>General supplier self-assessment</b>	<ul style="list-style-type: none"> <li>• The supplier self-assessment is a functionality of PurONE for receiving further information from suppliers about their capabilities, but also e.g. cyber security readiness.</li> <li>• It depicts the requisition of standardized statements (general and technology-specific) from our suppliers including their level of certification (quality, environmental, energy and industrial safety, ISO, etc.).</li> </ul>
<b>CoC integral to General Purchase Conditions</b>	<ul style="list-style-type: none"> <li>• The general purchase conditions (GPCs) also require compliance with statutory provisions and laws and prohibit bribery, corruption, and child and forced labor.</li> </ul>
<b>German supply chain act (LkSG) sustainability reviews and quality audits</b>	<ul style="list-style-type: none"> <li>• The supplier audit questionnaires of the respective divisions' quality departments were revised and now include questions based on the compliance questionnaire in PurONE (human rights and sustainability).</li> <li>• For supplier visits by MGMs and Sourcing Managers the same questions are to be applied by using the sustainability review questionnaire, which offers additional guidance.</li> <li>• Subsequently this is to be documented in PurONE.</li> </ul>
<b>Supplier evaluation / audits</b>	<ul style="list-style-type: none"> <li>• The supplier audit questionnaires of the respective divisions' quality departments contain chapters with questions relating to compliance and sustainability; these must be answered during a supplier audit or a site inspection.</li> <li>• Scope and frequency of the audits are defined by the divisions.</li> </ul>




**Self-assessments reduce risks**

To minimize risks in the overall purchasing process we require regular Compliance and Sustainability Self-assessment documentation from our suppliers. A standardized Group-wide questionnaire ensures that the relevant data is collated and processed in a logical and optimally coordinated way. The corresponding Compliance and Sustainability Questionnaire is a mandatory part of the registration process in the PurONE purchasing system, which was expanded and supplemented in the reporting period to meet the requirements of the Supply Chain Act. New questions on environmental incidents and working conditions were also included in the Questionnaire. In North America we ask our suppliers additional questions regarding certification for minority-owned companies. In a planned pilot project we are also integrating data from a third-party provider into PurONE for this purpose. Beyond this process, there is the option for specific supplier self-disclosures – for example, on cybersecurity.

The Compliance and Sustainability Questionnaire also forms the basis for Sustainability Reviews and serves as a practically applicable questionnaire with guidelines for on-location reviews. For example, human rights and environmental requirements are checked both during supplier visits by the Purchasing department and during on-location audits by the Quality departments. This also applies to on-location visits to potential new suppliers.

As at the end of the reporting period the system contained a valid Compliance and Sustainability Check for over 4,162 Voith suppliers (previous year: 7,414). The suppliers assessed thus represented 52 % of our overall supplier expenditure in the 2021/22 fiscal year (previous year: 68 %). The decrease in the coverage rate is due to the conversion of the process to the new PurONE purchasing system in the reporting period. However, as the Compliance and Sustainability Questionnaire is now a mandatory part of the registration process, we expect this rate to increase again in future.

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 **Fact base**  
Supplier Self-  
assessment

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## Standardized evaluation of active suppliers

In addition to self-assessments, in collaboration with their colleagues from Purchasing the employees of the specialist departments evaluate our active suppliers. A standardized procedure with transparent criteria ensures cross-Group comparability of the results. We are progressively switching to a case- and classification-based assessment built around transparent criteria that are standardized across the Group, as this increases transparency and improves the comparability of the results. The topic area of sustainability is also included as a criterion in this supplier evaluation; here, the weighting differs depending on the overall scope of the criteria set. In addition to working conditions and occupational safety standards, occupational health and environmental protection are also assessed. The established supplier evaluation methodology is currently being transferred to the new PurONE purchasing system. As part of this migration, we are also revising the scope and responsibilities. Evaluations are performed retrospectively after the fiscal year has closed. In order to be able to report the full scope in future, the pending assessments that had been launched for the reporting year will be reported on in the 2022/23 reporting year.

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 **Fact base**  
Supplier evaluations

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The uniform supplier classification methodology established in the 2018/19 fiscal year was further implemented in the IT system; Purchasing specialists classify suppliers at least once a year regarding their significance in the supply chain.

## Consistent response to violations

Potential violations of sustainability standards in our supply chains can be reported at any time via our publicly accessible whistleblowing system. If there are indications that suppliers violate applicable laws, or the Code of Conduct, or lose their creditworthiness, our Purchasing organization will carry out in-depth investigations. These take place in coordination with the Voith Legal Department in order to be able to assess each violation from a legal and compliance perspective. We have defined and implemented a specific process for this, which defines the appropriate threshold levels and also sets out specific reporting structures on local and central levels. Depending on the severity of violations, different reporting pathways are set: While minor violations are reported to the local Compliance Officers, with major incidents the Compliance Officers of the respective Group Division are consulted. In cases of corruption or particularly serious incidents, the central Compliance Committee is called in.

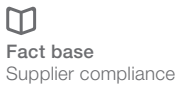
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 **Chapter Values and**  
Compliance chapter

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Based on the requirements of the Supply Chain Act, an escalation process was developed in the reporting year that must be followed in the event of indications of violations, resulting in an individual action plan with specific responsibilities. Possible remedies range from requesting a position statement, through establishing regular communication about implementing substantive measures, to examining contractual assurances and the possibility of relocating contracts. As a final resort, we can terminate the business relationship and blacklist the supplier in question centrally.

The actual blacklisting is then carried out by Voith's central Master Data Governance Department, which has had organizational representation in all Voith regions since 2019 and holds technical responsibility there. To this end, a central Master Data Governance (MDG) system was introduced to support the processes technically. This project started in the 2018/19 fiscal year and was progressively implemented as part of activities to improve Voith's IT infrastructure. As at the reporting date, the MDG system interfaces with all of Voith's SAP systems.



## Checks prior to establishing a business relationship

Led by the Master Data Governance Department and supported by Purchasing staff, various upstream Compliance and Sustainability Checks are carried out as soon as potential new creditor (supplier) profiles are created, even before a business relationship is established. The first step is to determine whether the supplier in question comes from a risk country (Critical Country Check) or is even blocked (Blocked List Check). The supplier-data consistency check, including their banking records, is carried out according to the dual control principle. In addition, Purchasing conducts an integrity check when a new creditor with a purchasing volume of more than € 25,000 is created. At the same time, checks are carried out with the aid of publicly available data to determine whether compliance incidents have occurred in the past. In addition, sustainability reviews are conducted during on-location visits to potential new suppliers.

# GRI Index

## General disclosures

Disclosures	Comment	Reference
<b>Organizational profile</b>		
102-1	Name of the organization	8
102-2	Activities, brands, products, and services	8–10
102-3	Location of headquarters	8
102-4	Location of operations	8 AR 2022: 94–95 <a href="https://voith.com/corp-en/about-us/markets-locations.html">https://voith.com/corp-en/about-us/markets-locations.html</a>
102-5	Ownership and legal form	8
102-6	Markets served	Fact base: International focus (92)
102-7	Scale of the organization	9–10 Fact base: Economic indicators (92) Fact base: Workforce structure (95–96) AR 2022: 86–87
102-8	Information on employees and other workers	25–26 Fact base: Workforce structure (95–96) Fact base: Employees by employment type (96)
102-9	Supply chain	78 Fact base: Procurement markets (113)
102-10	Significant changes to the organization and its supply chain	AR 2022: 39–56
102-11	Precautionary Principle or approach	As a family-owned company with a long-term focus, Voith is committed to a precautionary approach.  This is anchored in our management and Group Directives, for example in the Health, Safety & Environmental Protection (HSE) Group Directive.
102-12	External initiatives	21–24; 30 Fact base: Conflict materials (113)
102-13	Membership of associations	Fact base: Memberships and associations (93)
<b>Strategy</b>		
102-14	Statement from senior decision-maker	4–6
<b>Ethics and integrity</b>		
102-16	Values, principles, standards, and norms of behavior	15–21
102-17	Mechanisms for advice and concerns about ethics	18–19 Fact base: Escalation paths and points of contact for reporting compliance breaches (93)
<b>Governance</b>		
102-18	Governance structure	AR 2022: 9–15

Disclosures	Comment	Reference
<b>Stakeholder engagement</b>		
102-40	List of stakeholder groups	14
102-41	Collective bargaining agreements	26–27 Fact base: Details on upholding the rights of all employees (97)
102-42	Identifying and selecting stakeholders	12; 14–15
102-43	Approach to stakeholder engagement	12; 14–15; 56
102-44	Key topics and concerns raised	14–15
<b>Reporting practice</b>		
102-45	Entities included in the consolidated financial statements	116–117 AR 2022: 94–95
102-46	Defining report content and topic boundaries	14–15
102-47	List of material topics	14–15
102-48	Restatements of information	116–117
102-49	Changes in reporting	There were no significant changes in the list of material topics and boundaries compared to the reporting period 2020/21. The Voith Sustainability Report 2021 provides information on changes from previous reporting periods.
102-50	Reporting period	116–117
102-51	Date of most recent report	The Sustainability Report 2021 was published on February 28, 2022.
102-52	Reporting cycle	116–117
102-53	Contact point for questions regarding the report	119
102-54	Claims of reporting in accordance with the GRI Standards	116–117
102-55	GRI content index	84–91
102-56	External assurance	This report has not been externally audited.

## Topic-specific standards

Disclosures	Comment	Reference
<b>Economic performance</b>		
<b>Economic</b>		
103/201	Management approach	8–10 AR 2022: 20–23
201-1	Direct economic value generated and distributed	Fact base: Economic indicators (92) Fact base: Taxes (93) Fact base: Donations and sponsorship (94) Fact base: Expenditures for employees (97) AR 2022: 88–89
201-3	Defined benefit plan obligations and other retirement plans	AR 2022: 142–150
201-4	Financial assistance received from government	No significant financial assistance in the reporting period.

Disclosures	Comment	Reference
<b>Anti-corruption</b>		
103/205 Management approach		15–20; 78–83 Fact base: Escalation paths and points of contact for reporting compliance breaches (93) <a href="https://voith.com/corp-en/about-us/compliance.html">https://voith.com/corp-en/about-us/compliance.html</a>
205-2 Communication and training about anti-corruption policies and procedures		16–18 Fact base: Compliance training (93)
<b>Anti-competitive behavior</b>		
103/206 Management approach		15–20; 78–83 Fact base: Escalation paths and points of contact for reporting compliance breaches (93) Fact base: Supplier compliance (114) <a href="https://voith.com/corp-en/about-us/compliance.html">https://voith.com/corp-en/about-us/compliance.html</a>
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	In the year under review, Voith Hydro reached a settlement agreement with the World Bank to resolve proceedings against two companies in the Group Division that had been ongoing since 2018. The focus was on violations by individual employees with management duties of World Bank regulations and Voith Group compliance rules applicable throughout the Group. The Voith Annual Report 2022 and the Sustainability Report 2022 provide information about this.	19 AR 2022: 74
<b>Environmental</b>		
<b>Materials</b>		
103/301 Management approach		42–44; 48–49; 67–68; 71–73; 77
301-1 Materials used by weight or volume		49–50 Fact base: Materials used (106)
301-2 Recycled input materials used		49–50 Fact base: Materials used (106)
<b>Energy</b>		
103/302 Management approach		11–15; 42–48; 54–56; 65–67; 68–71; 75–76 Fact base: Certifications (102) Fact base: Environmental goals (103)
302-1 Energy consumption within the organization		44–48 Fact base: Energy consumption and GHG emissions recording methodology (103) Fact base: Total energy consumption (104) Fact base: Direct energy consumption: Scope 1 (104) Fact base: Production-related energy consumption: specific Scope 1 and 2 (104) Fact base: Electricity mix (106)
302-2 Energy consumption outside of the organization	Scope 3 emissions were not collected in the reporting year.	Fact base: Total energy consumption (104) Fact base: Calculation method for CO <sub>2</sub> emissions of products in the use phase (110)
302-3 Energy intensity		44–48 Fact base: Production-related energy consumption: specific Scope 1 and 2 (104)
302-4 Reduction of energy consumption		44–48 Fact base: Energy-saving measures and further potentials (105)

Disclosures	Comment	Reference
302-5	Reductions in energy requirements of products and services	60–67; 69–73; 74–77 Fact base: Further information on social and environmental impacts – Voith Hydro (111) Fact base: Selection: Technologies for improved social and environmental impact of Voith Paper (112)
<b>Water</b>		
103/303	Management approach	51–53 Fact base: Certifications (102) Fact base: Environmental goals (103)
303-1	Interactions with water as a shared resource	51–53
303-2	Management of water discharge-related impacts	53
303-3	Water withdrawal	52–53 Fact base: Water withdrawal (108) Fact base: Freshwater-saving measures and further potentials (108)
303-4	Water discharge	53 Fact base: Wastewater by method of discharge and quality (109)
<b>Emissions</b>		
103/305	Management approach	11–15; 44–48; 54–55; 65–67
305-1	Direct (Scope 1) GHG emissions	46–47 Fact base: Energy consumption and GHG emissions recording methodology (103) Fact base: Total GHG emissions (105) Fact base: GHG emissions: Scope 1 (105)
305-2	Energy indirect (Scope 2) GHG emissions	46–47 Fact base: Total GHG emissions (105)
305-3	Other indirect (Scope 3) GHG emissions	Scope 3 emissions were not collected in the reporting year.
305-4	GHG emissions intensity	Fact base: GHG Emissions: specific Scope 1 and 2 (106)
305-5	Reduction of GHG emissions	44–47; 62–67; 69–71; 75–77 Fact base: Measures for reducing GHG emissions and further potentials (106)
305-6	Emissions of ozone-depleting substances (ODS)	Fact base: Air pollutants (106)
305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	Fact base: Air pollutants (106)
<b>Effluents and waste</b>		
103/306	Management approach	49–51 Fact base: Environmental goals (103)
306-1	Waste generation and significant waste-related impacts	49–51
306-2	Management of significant waste-related impacts	49–51; 67–68; 72–73; 77 Fact base: Waste volume (107) Fact base: Waste-saving measures and further potentials (107) Fact base: Work materials and hazardous materials approval process (107)
306-3	Waste generated	49–51 Fact base: Waste volume (107) Fact base: Hazardous waste (107)

Disclosures	Comment	Reference
306-4	Waste diverted from disposal	Fact base: Waste volume (107)
306-5	Waste directed to disposal	Fact base: Waste volume (107)
<b>Environmental compliance</b>		
103/307	Management approach	15–19; 42–44
307-1	Non-compliance with environmental laws and regulations	In the reporting period, a measurement at the Voith location in Austell (USA) revealed a one-time exceedance of the copper content threshold in the wastewater. 53
<b>Supplier environmental assessment</b>		
103/308	Management approach	78–83
308-1	New suppliers that were screened using environmental criteria	Voith always takes environmental criteria into account when reviewing old and new suppliers. A separate evaluation of the proportion of new suppliers reviewed is not available. 80–82 Fact base: Supplier self-assessment (114) Fact base: Supplier evaluation (114)
<b>Social</b>		
<b>Employment</b>		
103/401	Management approach	25–28; 31–33
401-1	New employee hires and employee turnover	32–33 Fact base: Turnover (99) Fact base: New hirings (100)
401-3	Parental leave	Fact base: Parental leave (98)
<b>Labor/Management relations</b>		
103/402	Management approach	26–27
402-1	Minimum notice periods regarding operational changes	26–27
<b>Occupational health and safety</b>		
103/403	Management approach	36–41
403-1	Occupational health and safety management system	36–38 Fact base: Certifications (102)
403-2	Hazard identification, risk assessment, and incident investigation	36–40 Fact base: Approach to preventing and dealing with negative health and safety impacts (102)
403-3	Occupational health services	36–40
403-4	Worker participation, consultation, and communication on occupational health and safety	39–40 Fact base: Employee representation in committees (102)
403-5	Worker training on occupational health and safety	38–40
403-6	Promotion of worker health	37; 40–41
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	39–40
403-8	Workers covered by an occupational health and safety management system	36 Fact base: Certifications (102)
403-9	Work-related injuries	37–38 Fact base: Occupational accidents (102–103)



Disclosures	Comment	Reference
<b>Training and education</b>		
103/404	Management approach	33–36
404-1	Average hours of training per year per employee	34–35 Fact base: Training and further education hours by hierarchical employee category (101)
404-2	Programs for upgrading employee skills and transition assistance programs	33–36
404-3	Percentage of employees receiving regular performance and career development reviews	Fact base: Training and further education hours by hierarchical employee category (101)
<b>Diversity and equal opportunity</b>		
103/405	Management approach	26–31
405-1	Diversity of governance bodies and employees	28; 31 Fact base: Diversity in the management team and in the workforce (97) <a href="https://voith.com/corp-en/about-us/company/corporate-board-of-management.html">https://voith.com/corp-en/about-us/company/corporate-board-of-management.html</a>
<b>Non-discrimination</b>		
103/406	Management approach	26–29
406-1	Incidents of discrimination and corrective actions taken	Voith did not receive reports of any significant incidents in the reporting period.
<b>Freedom of association and collective bargaining</b>		
103/407	Management approach	26–27
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Voith did not receive reports of any significant incidents in the reporting period. 18; 80–81
<b>Child labor</b>		
103/408	Management approach	16; 18–21; 26–27; 78–81 <a href="https://voith.com/corp-en/brochures/modern_slavery_en.pdf">https://voith.com/corp-en/brochures/modern_slavery_en.pdf</a>
408-1	Operations and suppliers at significant risk for incidents of child labor	Voith did not receive reports of any significant incidents in the reporting period. 18; 80–81
<b>Forced or compulsory labor</b>		
103/409	Management approach	16; 18–21; 26–27; 78–81 <a href="https://voith.com/corp-en/brochures/modern_slavery_en.pdf">https://voith.com/corp-en/brochures/modern_slavery_en.pdf</a>
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Voith did not receive reports of any significant incidents in the reporting period. 18; 80–81
<b>Human rights assessment</b>		
103/412	Management approach	16; 18–21; 26–27; 78–81 <a href="https://voith.com/corp-en/brochures/modern_slavery_en.pdf">https://voith.com/corp-en/brochures/modern_slavery_en.pdf</a>
412-2	Employee training on human rights policies or procedures	17; 79–80 Fact base: Compliance training (93) Fact base: Scope of training (113)
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Global respect for basic human rights is enshrined in our Code of Conduct. All investment decisions are subject to this code.

Disclosures		Comment	Reference
<b>Supplier social assessment</b>			
103/414	Managementansatz		78–83
414-1	New suppliers that were screened using social criteria	When reviewing existing and new suppliers, Voith always takes their working practices into consideration. A separate evaluation of the percentage of new suppliers that have been reviewed is not available	80–83 Fact base: Supplier self-assessment (114) Fact base: Supplier evaluation (114)
<b>Public policy</b>			
103/415	Management approach		21–23 Fact base: Donations to and sponsorship for political parties and party-political organizations (95)
415-1	Political contributions	Donations to political parties and comparable party-political organizations as well as sponsorships of activities of such parties and organizations are prohibited by the Group policy on Donations and Sponsorship.	21–22 Fact base: Donations to and sponsorship for political parties and party-political organizations (95)
<b>Customer health safety</b>			
103/416	Management approach		54; 56–60
416-1	Assessment of the health and safety impacts of product and service categories		56–60
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Voith did not receive reports of any significant incidents in the reporting period.	
<b>Customer privacy</b>			
103/418	Management approach		19–20
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Voith did not receive reports of any significant incidents in the reporting period.	
<b>Socioeconomic compliance</b>			
103/419	Management approach		15–21
419-1	Non-compliance with laws and regulations in the social and economic area	In the year under review, Voith Hydro reached a settlement agreement with the World Bank to resolve proceedings against two companies in the Group Division that had been ongoing since 2018. The focus was on violations by individual employees with management duties of World Bank regulations and Voith Group compliance rules applicable throughout the Group. The Voith Annual Report 2022 and the Sustainability Report 2022 provide information about this.	19 AR 2022: 74



# Fact base

## Strategy and integrity

### Our profile

#### Economic indicators

<b>Economic indicators</b> in € millions	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Revenues	4,881	4,260	4,173
Operating result before non-recurring items	200	165	139
Income before taxes	116	80	73
<b>Business area portraits</b> in € millions	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
<b>Revenues</b>			
Voith Hydro	1,048	945	947
Voith Paper	2,196	1,776	1,805
Voith Turbo	1,557	1,457	1,337
<b>EBIT</b>			
Voith Hydro	2	8	10
Voith Paper	131	114	104
Voith Turbo	48	41	42

#### International focus

##### Locations by regional distribution

 More information

<b>Sales markets</b> in € millions	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Germany	679	583	727
Europe excluding Germany	1,358	1,349	1,109
Americas	1,167	965	1,045
Asia	1,509	1,227	1,168
Other	168	136	124
<b>Sales markets</b> in %	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Germany	14	14	13
Europe excluding Germany	28	31	33
Americas	24	23	21
Asia	31	29	30
Other	3	3	3
<b>Major sales countries</b> in € millions	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Germany	679	583	727
China	931	758	639

## Strategy and organization

### Employee sustainability training

A multilingual e-learning course that aims to emphasize the importance of sustainability to all employees has been available since the 2019/20 fiscal year. The course is open to all employees and is obligatory for new job-starters at Voith Hydro. It was completed by 638 employees worldwide in the reporting year (previous year: 866).

## Values and compliance

### Compliance training

Training sessions for prioritized groups	Number	FY 2021/22	FY 2020/21	FY 2019/20
Management from the upper six levels, Sales, Purchasing		18	20	26
Compliance Officers		2	1	2
Employees trained in centralized training	Number	FY 2021/22	FY 2020/21	FY 2019/20
Management from the upper six levels, Sales, Purchasing		372	364	115
Compliance Officers		11	11	8
Employees trained in centralized training	in %	FY 2021/22	FY 2020/21	FY 2019/20
Management from the upper six levels, Sales, Purchasing		83	84	100
Compliance Officers		92	93	100
Employees trained in decentralized training or instruction	Number	FY 2021/22	FY 2020/21	FY 2019/20
Training by Compliance Officers (> 1.5 hours)		640	825	257
Instruction by Compliance Officers or Supervisor (> 0.5 hours)		1,958	1,326	805

### Escalation paths and points of contact for reporting compliance breaches

- Compliance Helpdesk
- Line manager
- Respective HR contacts
- Compliance Officer
- Group Division Compliance Officer
- Compliance Committee
- Corporate Board of Management
- Supervisory Board
- Compliance Committee

### Taxes

Taxes paid by region	in € thousands	FY 2021/22	FY 2020/21	FY 2019/20 <sup>1)</sup>
Germany		19,322	11,449	7,959
Europe excluding Germany		12,366	10,808	9,251
Americas		9,333	5,710	4,415
Asia		25,672	27,946	29,459
Other		1,664	1,503	217
Total		68,357	57,416	51,302

<sup>1)</sup> Figures have been corrected retrospectively.

## Responsibility for society

### Memberships and associations

Voith and its Group companies currently represent their interests through 552 different association memberships (previous year: 513), on which we spend around € 2.6 million annually in membership fees (previous year: € 2.3 million). Voith activity in associations, by level of membership contributions:

- Long Duration Energy Storage Council
- German Engineering Federation (Verband Deutscher Maschinen- und Anlagenbauer e. V. – VDMA)
- Open Industry 4.0 Alliance
- Baden-Württemberg Employers' Association of the Metal and Electrical Industry Südwestmetall (Verband der Metall- und Elektroindustrie Baden-Württemberg e. V. – SWM)
- Research Association for Power Transmission Engineering (Forschungsvereinigung Antriebstechnik e. V. – FVA)
- German Standards Institute (Deutsches Institut für Normung e. V. – DIN)
- German Railway Industry Association (Verband der Bahnindustrie in Deutschland e. V. – VDB)
- Society for the Advancement of German Industry (Förderkreis der Deutschen Industrie e. V.)
- Paper Machine Clothing Association

Donations and sponsorship

<b>Donations and sponsorship</b> in € millions	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	2.79	1.98	2.04
of which donations	1.51	0.77	0.62
of which cash donations	1.30	0.68	–
of which in-kind donations	0.22	0.09	–
of which sponsorship	1.28	1.21	1.42
<b>Sponsorship aid by project</b> Number of projects	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Education (school, training, and science)	65	62	–
Social affairs	50	40	–
Sport	28	24	–
Culture	25	19	–
<b>Sponsorship aid by project</b> in %	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Education (school, training, and science)	39	21	21
Social affairs	30	21	13
Sport	17	48	58
Culture	14	10	8
<b>Sponsorship aid by region</b> in %	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
APAC	7.0	8.0	7.0
EMEA	70.0	88.0	91.0
Americas	23.0	4.0	2.0
Other	0.0	0.0	0.0
<b>Hanns Voith Foundation sponsorship aid by project</b> in €	<b>2021</b>	<b>2020</b>	<b>2019</b>
Science and research	40,500	67,000	50,500
Artistic, charitable, environmental, and ecological schemes	162,334	231,508	175,400
Measures aimed at international understanding and development aid	24,600	8,400	36,100
Training and education, measures based on the teachings of Rudolf Steiner	70,450	150,350	113,200
Scholarships	248,100	218,000	219,900
Total	545,984	675,258	595,100
<b>Hanns Voith Foundation sponsorship aid by project</b> in %	<b>2021</b>	<b>2020</b>	<b>2019</b>
Science and research	7.4	9.9	8.5
Artistic, charitable, environmental, and ecological schemes	29.7	34.3	29.5
Measures aimed at international understanding and development aid	4.5	1.2	6.0
Training and education, measures based on the teachings of Rudolf Steiner	12.9	22.3	19.0
Scholarships	45.4	32.3	37.0

Hanns Voith Foundation donations and sponsorship<sup>1)</sup>

<sup>1)</sup> The Hanns Voith Foundation's sponsorship aid is calculated and reported by calendar year rather than by reporting year.

Donations to and sponsorship for political parties and party-political organizations	Political contributions in € thousands	FY 2021/22	FY 2020/21	FY 2019/20
	Germany		0	5
Europe excluding Germany		0	0	0
Americas		0	0	0
Asia		0	0	0
Other		0	0	0
Total		0	5	0

Donations to political parties and comparable party-political organizations as well as sponsorships of activities of such parties and organizations are prohibited by the Group policy on "Donations and Sponsorship".

## Employees

### Voith as an employer

Workforce structure	Consolidation scope for employment figures <sup>1)</sup> Number	FY 2021/22	FY 2020/21	FY 2019/20
Employees Group-wide as simplified FTE (without apprentices)		21,491	19,946	20,634
Employees Group-wide as headcount including Argo-Hytos		22,034	20,378	21,049
of which employees included in data analysis		20,491	20,378	21,049
<b>Employees by age group, gender, and region<sup>2)</sup></b>				
Number as a headcount		FY 2021/22	FY 2020/21	FY 2019/20
Voith Group		20,491	20,378	21,049
<b>Number by gender</b>		FY 2021/22	FY 2020/21	FY 2019/20
of which women		3,781	3,743	3,819
of which men		16,710	16,635	17,230
<b>Number by age</b>		FY 2021/22	FY 2020/21	FY 2019/20
of which < 30 years		2,459	2,406	2,636
of which 30–50 years		11,338	11,300	11,654
of which > 50 years		6,694	6,672	6,759
<b>Number by origin</b>		FY 2021/22	FY 2020/21	FY 2019/20
of which German		7,251	7,229	7,586
of which not German		13,240	13,149	13,012
<b>Number by region</b>		FY 2021/22	FY 2020/21	FY 2019/20
of which Germany		7,789	7,694	8,037
of which Europe excluding Germany		4,417	4,365	4,446
of which Americas		3,576	3,632	3,747
of which Asia		3,353	3,364	3,412
of which other		1,356	1,323	1,407

<sup>1)</sup> In contrast to the Annual Report, the Sustainability Report states employment figures as headcount instead of simplified FTEs. Consolidated companies are in reporting scope, just as they are for the Annual Report, excluding Argo-Hytos, as the data will only become available in the course of the 2022/23 fiscal year.

<sup>2)</sup> Due to part-time work, the regional headcount distribution differs from the Annual Report, in which the values are reported in FTE (full-time equivalents).

Number by main countries	FY 2021/22	FY 2020/21	FY 2019/20
Germany	7,789	7,694	8,037
China	2,446	2,463	2,495
USA	2,033	1,939	2,003
India	1,356	1,341	1,405
Austria	1,331	967	1,388
Brazil	948	1,323	1,103

As at the end of the 2021/22 fiscal year, 20,491 staff (previous year 20,378) were employed by the Voith Group, 0.6% more than in the previous fiscal year. Overall, we had a slight increase. Germany and Rest of Europe each grew by 1.2%, Others by 2.5%. There was a slight decline in the Americas (1.5%) and in Asia (0.3%).

Our core workforce is structured according to the principle of commercial prudence. Workforce flexibility through the use of temporary employment enables us to manage order peaks and therefore to respond quickly and flexibly in markets that can be very volatile. The engagement of employees from external companies is governed by a Group Directive.

Employees by employment type	Full-time and part-time employees by age and gender Number	FY 2021/22	FY 2020/21	FY 2019/20
	Full-time	19,284	19,220	19,845
	of which women	2,943	2,921	2,999
	of which men	16,341	16,299	16,846
	of which < 30 years	2,345	2,301	2,533
	of which 30–50 years	10,737	10,729	11,073
	of which > 50 years	6,202	6,190	6,239
	Part-time	1,207	1,158	1,204
	of which women	838	822	820
	of which men	369	336	384
	of which < 30 years	114	105	103
	of which 30–50 years	601	571	581
	of which > 50 years	492	482	520
	<b>Temporary and permanent employment contracts<sup>1)</sup> Number</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Permanent employment contract	18,490	18,316	19,014
	Temporary employment contract	2,001	2,062	2,035
	<b>Ratio of permanent to temporary employment contracts<sup>1)</sup> in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Permanent employment contract	90.2	89.9	90.3
	Temporary employment contract	9.8	10.1	9.7
	<b>Ratio of direct and indirect employees to the total workforce<sup>1)</sup> in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Direct employees	51.3	51.1	50.7
	Indirect employees	48.7	48.9	49.3
	<b>Temporary employees<sup>1)</sup> Number</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Voith Group	1,226	1,233	933

<sup>1)</sup> Figures have been corrected retrospectively for 2021/21.

In the reporting year Voith employed 1,226 workers (previous year: 1,233) through temporary employment agencies, 0.6% fewer than in the previous year. Temporary employment is a commonplace instrument in the sector to meet short-term order peaks. The number of permanent employment contracts decreased by 3.2% to 2,001 in the reporting year (previous year: 2,062).



**Details on upholding the rights of all employees**

Collective bargaining agreements in %	FY 2021/22	FY 2020/21	FY 2019/20
Employees covered by collective bargaining agreements	63.0	63.9	67.0
of which Germany	95.6	95.9	96.0
of which Europe excluding Germany	66.2	69.3	70.0
of which Americas	48.6	48.5	54.0
of which Asia	14.8	16.5	26.0
of which other	22.3	23.2	31.0

**Measures for socially responsible restructuring and job security**

To avoid personnel reductions wherever possible we utilize every option available, such as deliberate hiring freezes for certain business areas or countries, the targeted use of working-hours accounts, and early retirement offers where appropriate. If headcount reductions are unavoidable, we offer support to those affected, for instance through advisory services and severance payments in accordance with local frameworks.

**Examples of socially acceptable restructuring and measures to safeguard the future of locations:**
**Germany**

- Despite the Covid-19 pandemic, in the reporting year we needed to apply short-time working regulations only occasionally.
- A multi-year agreement to safeguard the future of our **Heidenheim location** has been in place since 2020, replacing the previous agreement from 2015. The central points of the agreement are headcount adjustments without operational redundancies, and investment in future topics that support employment intended to safeguard the future of this location.
- An agreement between Voith and the Works Council to safeguard the future of our **Crailsheim location** has been in place for many years.
- An agreement to safeguard the future of our **Sonthofen location** has been in place since December 2021.
- An in-house collective wage agreement was concluded with the union at our **Kiel location**. This takes into account the regional collective wage agreements in Schleswig-Holstein.

At our **São Paulo, Mucuri, and Ponta Grossa locations in Brazil**, the employment relationships with all employees except managers are governed by union agreements. A range of social benefits are stipulated in these agreements. For example, former employees continue to receive medical assistance from Voith for up to six months after the end of their employment and are supplied with food. In addition, depending on their length of service, employees who are about to retire are guaranteed that their employment relationship cannot be terminated up to 18 months prior to their departure.

**Expenditures for employees**

Expenditures for employees in € millions	FY 2021/22	FY 2020/21	FY 2019/20
Expenditures for wages and salaries	1,301	1,247	1,237
Expenditures for social security contributions, retirement pensions, and benefits	281.2	268.6	264.3
Expenditures for training and career development	3.9	2.3	2.8

**Diversity in the management team and in the workforce<sup>1)</sup>**

Employment ratio of people with disabilities in %	FY 2021/22	FY 2020/21	FY 2019/20
Employment ratio of people with disabilities	3.7	4.0	3.7
Diversity in the senior management circle Number	FY 2021/22	FY 2020/21	FY 2019/20
Senior Management Circle	93	95	80
Proportion of women in %	11.8	6.3	6.3
Distribution of women and men at management levels Number	FY 2021/22	FY 2020/21	FY 2019/20
Executive Management, Senior Management Circle	99	106	86
Proportion of women in %	11.1	5.7	5.8
Upper management	174	158	347
Proportion of women in %	8.0	7.6	8.9
Mid-level management	1,503	1,459	652
Proportion of women in %	10.6	10.1	11.5
Total (across all management levels)	1,770	1,712	1,079
Proportion of women in %	10.5	9.7	10.3

<sup>1)</sup> New data basis since 2020/21. Retrospective adjustment is not possible due to redefinition.

**Flexible working time models**

Availability of flexible working time models <sup>1)</sup> Number	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	16,023	17,024	14,504
of which women	3,045	3,195	2,624
of which men	12,978	13,829	11,880
of which < 30 years	1,879	1,944	1,806
of which 30–50 years	8,735	9,296	7,270
of which > 50 years	5,409	5,784	5,428

**Examples of flexible working time models:**

In **Germany**, release from work for training is governed both by law and by collective agreements. In connection with this, a few years ago an additional agreement was reached with the Works Council to introduce subsidized part-time training in Heidenheim. In an “active” phase, employees can work for reduced remuneration; in a following “passive” phase, employees can utilize the time available for vocational training and continue to be remunerated.

All employees at our **locations in the USA and Canada** have a range of options available to them to structure their work, insofar as their respective role allows. Having the flexibility to adapt their working hours to suit their particular needs is important for working parents, for example. In response to the challenges posed by the Covid-19 pandemic, we drew up a new Remote Work Policy: This offers executives with supervisory roles greater flexibility to work with employees to agree on work arrangements that meet their needs. In the USA we have also been granting employees two weeks of additional paid vacation on the birth of their child since 2018. In order to improve the work-life balance for our employees and their families, a new summertime regulation was introduced in the North America region in 2022: This arrangement enables our employees to organize their working time flexibly across the whole working week, so that every year from the end of May until the beginning of September they are able to leave earlier on a Friday afternoon.

In response to the Covid-19 pandemic, we expanded our Remote Work Policy as far as possible to all **locations in the South America region**. This means that around 70 % of all employees now have the opportunity to work remotely. Apprentices and interns will continue to receive full pay during the pandemic.

We are also applying remote work policies in the **APAC region** to enable us to respond to business requirements or special situations such as the Covid-19 pandemic. They ensure we are always in a position to meet customer needs and also offer the necessary flexibility for employees to become more productive and enjoy greater occupational satisfaction.

Percentage of flexible working time models in %	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	78.2	83.5	68.9
of which women	80.5	85.4	68.7
of which men	77.7	83.1	68.9
of which < 30 years	76.4	80.8	68.5
of which 30–50 years	77.0	82.3	62.4
of which > 50 years	80.8	86.7	80.3

**Parental leave**

Employees entitled to parental leave Number	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	19,036	19,940	20,351
of which women	3,581	3,686	3,746
of which men	15,455	16,254	16,605
Employees who began parental leave in the fiscal year <sup>2)</sup> Number	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	348	360	344
of which women	84	123	99
of which men	264	237	245

<sup>1)</sup> Number of employees for whom flexible working time models are available (e.g. flextime, saving and reducing overtime, sabbaticals).

<sup>2)</sup> Figures have been corrected retrospectively in 2020/21.

**Turnover**

<b>Employees who left the company by age group, gender, and region</b>			
Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	2,310	2,386	2,213
of which women	392	350	335
of which men	1,918	2,036	1,878
of which < 30 years	450	412	392
of which 30–50 years	1,069	1,122	1,002
of which > 50 years	791	435	819
of which Germany	535	706	470
of which Europe excluding Germany	472	466	262
of which Americas	970	818	1,171
of which Asia	250	277	259
of which other	83	119	51
<b>Percentage of employees who left the company by age group, gender, and region in %</b>			
	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	12.1	12.3	11.5
of which women	11.1	9.8	9.5
of which men	12.3	12.9	11.9
of which < 30 years	20.5	18.5	17.0
of which 30–50 years	10.2	10.5	9.5
of which > 50 years	12.2	13.1	12.8
of which Germany	7.1	9.3	5.9
of which Europe excluding Germany	11.6	11.4	7.8
of which Americas	27.5	22.3	30.9
of which Asia	7.5	8.2	7.6
of which other	11.4	16.8	6.7

New hirings

<b>New employee hires by age group, gender, and region</b> Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	2,565	1,706	1,344
of which women	434	276	232
of which men	2,131	1,430	1,112
of which < 30 years	948	597	564
of which 30–50 years	1,251	827	602
of which > 50 years	366	282	178
of which Germany	664	375	293
of which Europe excluding Germany	522	342	281
of which Americas	926	687	496
of which Asia	307	236	220
of which other	146	66	54
<b>Percentage of new employee hires by age group, gender, and region</b> in %	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	12.5	8.4	6.4
of which women	2.1	1.4	6.1
of which men	10.4	7.0	6.5
of which < 30 years	4.6	2.9	21.4
of which 30–50 years	6.1	4.1	5.2
of which > 50 years	1.8	1.4	2.6
of which Germany	3.2	1.8	3.6
of which Europe excluding Germany	2.5	1.7	6.3
of which Americas	4.5	3.4	13.2
of which Asia	1.5	1.2	6.4
of which other	0.7	0.3	3.8

## Attracting and promoting talent

### Training and further education hours by hierarchical employee category<sup>1)</sup>

<b>Training and further education hours</b> Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	126,339	118,178	128,764
of which women	29,680	37,564	23,919
of which men	96,658	80,614	104,845
of which < 30 years	19,461	16,535	19,712
of which 30–50 years	79,178	70,556	82,179
of which > 50 years	27,700	31,087	26,873
Executive Management, Senior Management Circle	749	1,584	–
Upper management	2,062	2,677	656
Mid-level management	19,513	20,398	11,806
All other employees	104,015	93,519	116,302
<b>Average training time &amp; further education by employee</b> Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	6.2	5.8	6.1
of which women	7.8	10.0	6.3
of which men	5.8	4.8	6.1
of which < 30 years	7.9	6.9	7.5
of which 30–50 years	7.0	6.2	7.1
of which > 50 years	4.1	4.7	4.0
Executive Management, Senior Management Circle	7.6	14.9	–
Upper management	11.9	16.9	7.6
Mid-level management	13.0	14.0	11.8
All other employees	5.6	5.0	6.2
<b>Employees who underwent further training</b> Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	14,942	11,997	14,782
<b>Employees who received performance and career development reviews<sup>2)</sup> in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Voith Group	–	–	90.1
of which women	–	–	89.2
of which men	–	–	90.3
Executive Management, Senior Management Circle	–	–	–
Upper management	–	–	76.0
Mid-level management	–	–	92.3
All other employees	–	–	90.0

<sup>1)</sup> New data basis since 2020/21. Retrospective adjustment is not possible due to redefinition.

<sup>2)</sup> Cannot be evaluated for the 2020/21 and 2021/22 fiscal years.

### Vocational training

<b>Vocational training</b> Number	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Apprentices and students	723	757	756
of which in Germany	453	499	530
of which at the Heidenheim location	289	330	334

## Occupational health and safety

### Certifications

#### Existing Voith location certifications

Degree of coverage based on employees in %	FY 2021/22	FY 2020/21	FY 2019/20
ISO 50001	17	17	19
ISO 14001	81	81	79
ISO 9001	82	82	78
ISO 45001	81	81	78

The data includes all locations.

### Approach to preventing and dealing with negative health and safety impacts

Regarding our own locations, construction sites, and products, Voith's approach to preventing negative health and safety impacts is as follows:

1. At our own locations we continually apply the occupational health and safety system as described. We are progressively expanding this proven system of regional support to continuously improve its quality and effectiveness.
2. At our construction sites and during on-location activities at our customers' premises we perform risk assessments in advance. These are updated both on a regular and a needs basis and involve a careful examination of many aspects, including how the various industrial technicians are coordinated in relation to safety aspects. We also analyze work-related accidents in close cooperation with our customers on location, jointly adopting protective measures to prevent further accidents.
3. Regarding our products and their use, we focus right from the product development stage on achieving strict compliance with regulatory requirements. In addition, our products undergo diverse test and inspection stages. We systematically incorporate the findings from these processes, together with information from market and product monitoring, into the development and enhancement of our products.

To identify and analyze work-related hazards and risks in connection with occupational safety, we have implemented a comprehensive audit system in addition to our overarching risk-management process. STF accidents (Slips, Trips, and Falls) and crane accidents were identified as the greatest potential hazards in the reporting period. Furthermore, most injuries involve the hands and we are therefore continuing to focus on the topic of hand protection. Since January 2021, this has been the subject of a global campaign to raise awareness among employees working in the operative areas of Operations, Service, Logistics, and Training. The campaign is based on a four-step action plan which began by providing information on the relevance of hand protection. In step two, additional facts on the number and severity of the accidents were presented with the aid of specific examples to raise awareness. We then ran two mandatory practical workshops on nine specific hand-safety topics in every organizational unit. The final step involved establishing the ongoing exchange of best practice.

### Employee representation in committees

#### Total number of employees<sup>1)</sup> represented on Health and Safety Management Worker Committees in %

	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	80	80	80

<sup>1)</sup> Based on headcount

### Occupational accidents

#### Occupational accidents Number

	FY 2021/22	FY 2020/21	FY 2019/20
Total occupational accidents	61	79	68
of which fatal	0	1	0
of which severe	2	2	4

#### Frequency Rates<sup>1)</sup> in %

	FY 2021/22	FY 2020/21	FY 2019/20
Occupational accidents per million hours worked	1.6	2.1	1.8

#### Occupational accidents – Personnel working for Voith who are not Voith employees Number

	FY 2021/22	FY 2020/21	FY 2019/20
Occupational accidents	77	71	58

<sup>1)</sup> Number of occupational accidents resulting in downtime (1 day or more) per 1 million working hours

Since October 2017 Voith has gathered third-party occupational accident data centrally. Each incident is documented in an Incident Report and followed up. For these incidents Voith's Reporting Organization does not currently distinguish between degrees of accident severity, or working hours lost. Due to the differing data-gathering methods these values are not comparable with the data provided on Voith's own employees.

Severity Rate <sup>1)</sup> Number	FY 2021/22	FY 2020/21	FY 2019/20
Voith Group	491.9	537.2	454.8
Germany	500.1	655.2	343.3
Europe excluding Germany	652.4	144.6	34.9
Americas	820.9	1,148.9	760.3
Asia	67.7	116.7	609.5
Other	1,341.0	508.1	270.6

<sup>1)</sup> Hours lost per 1 million working hours.

## Environment

### Management approach

Environmental goals	Environmental goals in %	FY 2021/22	FY 2020/21	FY 2019/20
	Reduction in specific energy consumption compared to 2011/12 <sup>1)</sup>	-33.9	-28.8	-27.2
	Reduction in specific freshwater withdrawal compared to 2011/12	-43.7	-32.4	-29.7
	Reduction in specific waste volume compared to 2011/12	-38.2	-37.0	-35.9

#### Hot-spot analysis methodology

Hot-spot analyses show consumption (energy, water, materials, etc.) by control and analysis level (i.e. region, Group Division, location, system, process); these clearly pinpoint hot spots of high physical consumption levels and corresponding costs.

Based on this we develop project ideas for improvement, evaluate them and progressively develop them further in a stage-gate process through to implementation. We employ economic and environmental evaluation criteria in accordance with the Green Controlling cycle. We regularly review the distribution of our consumption based on varying patterns in overall conditions driven by changes in location activities, economic activities, changes to the machine and plant fleet, etc.

<sup>1)</sup> Compared to fiscal 2011/12, the Voith Group has changed. In order to take the structural changes in the organization into account in the target achievement, the reduction in specific energy consumption compared to 2011/12 was calculated excluding the sales of the Argo-Hytos Group. Moreover, since fiscal year 2021/22, the calculation of energy consumption has also included the acquisitions made in recent years.

## Energy efficiency and climate protection

#### Energy consumption and GHG emissions recording methodology

In recording its GHG emissions Voith follows the guidelines of the Greenhouse Gas (GHG) Protocol. Data is recorded and gathered monthly on all material direct and indirect energy consumption sources within the management scope. At smaller locations outside the energy management scope, data on annual energy consumption by consumption source are gathered at irregular intervals. The energy consumption figures given are adjusted for the respective reporting year in line with the development of employee headcount. Direct fuel consumption due to vehicle operation is evaluated annually in Germany via a fuel card system; this covers almost 100 % of our operational area (Scope 1 + 2).

The applicable emissions factors for direct energy consumption are taken from Defra publications or Voith's own GaBi database, according to their availability. Our locations can adjust them for location-specific factors (e.g. for LPG or natural gas) with the requirement that they provide the corresponding proof, thus contributing to raising calculation accuracy. The emissions and GHG impact of refrigerants are also recorded and calculated.

The GHG emissions of indirect sources of energy consumption are calculated both on a location-specific and on a market-specific basis. The market-based emissions factors and the underlying grid mix are reported and documented annually by those locations within the management scope, based on the data supplied by the respective energy utility. This market-based data is compared centrally with location-based data from the International Energy Agency (IEA), checked for plausibility, and validated. Ecological Business Management is available as a consultancy to Voith locations, for instance to those with complex energy sourcing through contracting or self-generation. The analysis of location-based factors provides an additional controlling lever for the reported market-based factors.

Total energy consumption

Increasing data collection coverage

To achieve an even deeper understanding of our resource consumption and live up to our climate neutrality pledge, we have integrated the assessment of our smaller sites into the reporting system. These are generally service or sales locations. Based on a random data collection, we determined per capita rates for resource consumption at the smaller of these sites. The relatively larger of these sites were integrated into the regular reporting. To facilitate the assessment of the development over time, we have adjusted the data on energy consumption and greenhouse gas emissions in 2021/22 in the remainder of the chapter and in the fact base to reflect this new level of coverage.

Total energy consumption in MWh	FY 2021/22 <sup>1)</sup>	FY 2020/21	FY 2019/20
Energy consumption within the organization (Scope 1 and 2)	537,341	501,810	471,047
Direct energy consumption (Scope 1)	273,729	163,679	165,120
Natural gas	233,198	126,591	121,868
Heating oil	4,223	5,197	3,779
Diesel	16,801	16,280	20,281
LPG	12,952	8,891	11,133
Gasoline	4,795	4,364	4,692
Biomass/biogenic energy sources/hydrogen	1,759	2,355	3,367
Indirect energy consumption (Scope 2)	263,613	333,502	303,158
Electricity	237,387	259,758	237,994
from renewable sources	185,162	95,943	104,441
Long-distance heating	22,283	67,620	58,542
from renewable sources	4,608	4,270	n/a
Steam	5,594	6,490	6,968
from renewable sources	n/a	n/a	n/a
Energy sold	-1,651	-366	-345
Self-generated renewable energy	8,400	4,629	2,769

<sup>1)</sup> From fiscal 2021/22, total energy consumption is reported, including fully consolidated acquisitions and the gas-fired power plant in Heidenheim. The inclusion of the power plant in Heidenheim results in a shift in direct energy consumption in relation to indirect energy consumption. Energy purchased through the power plant is shown as natural gas, rather than electricity and district heating. Losses are included.

Direct energy consumption: Scope 1	Direct energy consumption of the Voith vehicle fleet in MWh	FY 2021/22	FY 2020/21	FY 2019/20
	Company cars <sup>1)</sup>	4,404	4,171	4,692
	Logistics	11,260	10,891	12,931

<sup>1)</sup> Company cars do not include employees' personal cars, or rental cars.

Production-related energy consumption: specific Scope 1 and 2	Specific production-related energy consumption (Scope 1 and 2) in MWh/€ million sales revenues	FY 2021/22	FY 2020/21	FY 2019/20
	Specific energy consumption	75.5	89.7	91.6



**Energy-saving measures and further potentials****Reduction in energy consumption as a direct consequence of conservation and efficiency drives in MWh**

In the reporting period the following savings and reductions were achieved, amongst others:

- Voith Hydro in York (USA) switched from gas to induction for preheating during welding. This leads to annual savings of 454 MWh of gas (84 t CO<sub>2</sub>).
- LED conversion projects at Voith Hydro in Shanghai (China) now produce 118 MWh (87 t CO<sub>2</sub>) per year, while at Voith Paper in China 226 MWh electricity is saved annually.
- A further significant power saving at the Voith Hydro location in Shanghai was achieved by switching to a frequency-controlled compressor. This reduces annual electricity consumption by 587 MWh (433 t CO<sub>2</sub>).
- At Voith Paper in Heidenheim, the Tempering Cabin enables annual electricity savings of 176 MWh of electricity.
- In India, Voith Paper will save 347.5 MWh of electricity per year by using chillers to reduce the hydraulic oil temperature during the operation of looms.
- Voith Hydro in Heidenheim is also planning a measure to save 210 MWh (49 t CO<sub>2</sub>) per year through improved use of solar energy and the controlled switching of fan heaters.
- In order to reduce CO<sub>2</sub> emissions in the near term, in future Voith Paper will rely on natural gas for its finishing process in Malaysia. In India too, an emergency power generator will no longer be operated with diesel, but with natural gas.

**Reduction in energy consumption as a direct consequence of conservation and efficiency drives in GWh**

	FY 2021/22	FY 2020/21	FY 2019/20
Energy-saving potential since FY 2011/12	159.0	141.0	140.3
of which achieved in the FY	10.3	7.2	6.5
savings already achieved since FY 2011/12	147.9	137.6	130.4

Measures in scope on the location level are checked by the respectively responsible Ecological Business Managers for their effectiveness. Measures controlling is carried out centrally via a measures tool.

**Total GHG emissions**

Total GHG emissions in t CO <sub>2</sub>	FY 2021/22	FY 2020/21	FY 2019/20
GHG emissions within the organization (Scope 1 and 2)	86,471	142,464	140,318
Direct GHG emissions (Scope 1)	50,544	32,773	33,814
Natural gas	40,447	23,272	22,424
Heating oil	1,077	1,392	1,012
Diesel	4,242	4,166	5,460
LPG	2,778	1,908	2,389
Gasoline	1,200	1,116	1,208
Biomass/biogenic energy sources/hydrogen	22	0	4
Coolants	779	919	1,318
Other renewable energy sources and captive generation of renewable energy	0	0	0
Indirect GHG emissions (Scope 2)	35,927	109,691	106,504
Electricity	17,845	90,314	87,812
Long-distance heating	14,262	15,048	14,192
Steam	3,842	4,465	4,627
Energy sold	-21	-135	-127

**GHG emissions: Scope 1**

Direct GHG emissions of the Voith vehicle fleet (Scope 1) in t CO <sub>2</sub>	FY 2021/22	FY 2020/21	FY 2019/20
Company cars <sup>1)</sup>	1,130	1,070	1,208
Logistics	3,147	3,044	4,588

<sup>1)</sup> Company cars do not include employees' personal cars, or rental cars.

GHG emissions: specific Scope 1 and 2	Specific GHG emissions (total emissions Scope 1 and 2) in t CO <sub>2</sub> /€ million sales revenues	FY 2021/22	FY 2020/21	FY 2019/20
		Specific GHG emissions (Scope 1 and 2)	17.5	33.4
Measures for reducing GHG emissions and further potentials	Reduction in CO <sub>2</sub> emissions as a direct consequence of conservation and efficiency drives in t CO <sub>2</sub>	FY 2021/22	FY 2020/21	FY 2019/20
	Reduction through efficiency improvement and fuel switching	–	–	3,300
	Change in CO <sub>2</sub> emissions in %	FY 2021/22	FY 2020/21	FY 2019/20
	Change in CO <sub>2</sub> emissions compared with previous year	–40.0	1.5	–11.8
	Change in direct CO <sub>2</sub> emissions	51.6	–3.1	–9.6
Change in indirect CO <sub>2</sub> emissions	–67.2	3.0	–12.5	

See energy consumption reduction measures.

Air pollutants	Air pollutants in t	FY 2021/22	FY 2020/21	FY 2019/20
	Chlorofluorocarbons (CFCs) <sup>1)</sup>	< 1	< 1	< 1
	Hydrochlorofluorocarbons (HCFCs) <sup>1)</sup>	< 1	< 1	< 1
	Sulfur hexafluoride (SF <sub>6</sub> )	< 1	< 1	< 1

The indicators for other air pollutants are calculated based on the reported energy consumption, logistics, and business-travel data with the aid of LCI conversion factors. Other air pollutants from energy consumption sources generally dominate. We additionally gather data on emissions from refrigerants.

Since fiscal year 2018/19, data on NM-VOC from production-related VOC emissions are no longer gathered due to their low relevance for Voith. These consist mainly of solvents used in coating or cleaning processes at Voith. We strive to reduce this volume continuously through efficiency and substitution measures, such as in-house distillation.

The closure of the foundry in São Paulo in fiscal year 2018/19 eliminated the largest dust emitter. There are no other significant individual emitters of heavy metals or dust.

<sup>1)</sup> Ozone-degradable substances in t CFC-11e

Electricity mix	Electricity mix <sup>2)</sup> in %	FY 2021/22	FY 2020/21	FY 2019/20
	Renewable resources	77.9	38.0	44.3
	Non-renewable resources	22.2	62.0	55.7

<sup>2)</sup> Since 2021/22, the calculation has been based on total energy consumption. Only externally purchased electricity is taken into account.

## Material efficiency and waste

### Use of material and efficiency measures

Materials used	Materials used by weight in t	FY 2021/22	FY 2020/21	FY 2019/20
	Total materials/raw materials used	171,268	159,831	187,341
of which raw material	54,107	52,262	58,931	
of which semifinished products	100,329	90,750	103,275	
of which packaging	12,633	13,354	20,815	
of which auxiliaries	4,199	3,465	4,319	
	Materials used in %	FY 2021/22	FY 2020/21	FY 2019/20
	Renewable materials	–	16	11
	Secondary raw materials	–	43	31

Voith employs country-specific recycling factors to calculate the proportion of secondary raw materials in terms of the overall amount of materials used. No data can be evaluated for the 2021/22 reporting year.

## Management of waste and hazardous materials

Waste volume	<b>Reclaimed and removed waste by method in t</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Total waste	28,061	28,617	28,504
	Reclaimed waste total	18,290	22,811	21,217
	Reused	956	668	237
	Recycled	15,338	1,827 <sup>1)</sup>	18,247
	Composted	242	236	237
	Recovered	1,754	1,592	2,062
	Other reclamation	–	–	–
	Removed waste total	9,771	5,805	6,927
	Incinerated	1,752	3,167	2,904
	Dumped at an external site	2,020	2,117	4,023
	Dumped at a company site	–	–	–
	Other removal	33	521	–

<sup>1)</sup> Retrospectively adjusted

Alongside the type of waste, the locations also enter the manner of disposal in our database. Possible discrepancies are due to rounding.

Waste-saving measures and further potentials	<b>Reduction in specific waste quantities in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Reduction in specific waste quantities	–1.9	–1.5	–20.6
	<b>Specific waste weight in t/€ million sales revenues</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Specific waste weight	6.6	6.7	6.8
	<b>Material efficiency potential in t</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Efficiency potential since FY 2011/12	11,369	9,000	8,886
	of which achieved in the FY	667	145	47
	savings already achieved since FY 2011/12	11,369	9,000	8,855

Hazardous waste	<b>Hazardous and non-hazardous waste in t</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
	Total waste	28,061	28,617	8,886
	Hazardous waste	2,873	3,582	4,144
	of which transported	2,873	3,582	4,144
	of which imported	–	–	–
	of which exported	–	–	–
	of which transported between Voith locations	–	–	–
	Non-hazardous waste	25,188	25,036	24,360

### Work materials and hazardous materials approval process

At Voith, any new work material or hazardous substance undergoes central and local approval processes before introduction.

In the central approval process, a systematic and automated check is made based on applicable legal regulations (e.g. the ECHA Candidate List, or REACH annexes). The downstream local approval process adds workplace- and location-specific topics (e.g. water protection area, local regulatory requirements, storage location, on-location transportation, disposal). The use of centrally approved materials can therefore still be blocked at a local level for location-specific reasons.

## Water

### Water withdrawal

<b>Water withdrawal by source<sup>1)</sup> in m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Total water withdrawal	1,031,268	1,076,327	1,015,335
of which rainwater	287	541	1,121
of which wastewater procured from other companies	-	-	-
of which freshwater (< 1,000 mg/l total dissolved solids)	1,030,982	1,075,786	1,014,214
of which surface water	72,944	69,512	81,991
of which groundwater	569,215	626,718	538,804
of which public as well as private water treatment plants	388,823	379,556	393,419
of which other sources (> 1,000 mg/l total dissolved solids)	-	-	-
<b>Water withdrawal by region in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Germany	51	58	55
Europe excluding Germany	12	11	11
Americas	15	11	12
Asia	20	20	21
Other	< 1	< 1	< 1
<b>Total volume and percentage of reused water in m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Reused water	0.0	20.2	31.0
<b>In % of total water withdrawal</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Reused water	0	0	< 1

<sup>1)</sup> Categories are gathered centrally by means of a data-gathering process at the locations.

### Freshwater-saving measures and further potentials

<b>Specific freshwater withdrawal in m<sup>3</sup>/€ thousands revenues</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Specific freshwater withdrawal	0.21	0.25	0.24
<b>Freshwater efficiency potential in 1,000 m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Efficiency potential in planning since FY 2011/12	862	818	818
of which additionally achieved in the FY	49	14	< 1
of which savings already achieved since FY 2011/12	862	813	799

**Wastewater by method of discharge and quality**

<b>Wastewater by method of discharge in m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Total wastewater	895,889	966,326	855,260
<b>Total wastewater in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
of which discharged into the public sewage system	44.5	42.2	49.2
of which discharged into surface water	55.3	57.5	50.5
of which discharged into groundwater	0.2	0.3	0.4
of which reused at another company	0	< 1	< 1
<b>Total treated wastewater in m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Total treated wastewater	39,572	33,737	45,230
<b>Total treated wastewater in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
of which discharged into the public sewage system	47.2	47.6	42.4
of which discharged into surface water	52.8	51.6	56.0
of which discharged into groundwater	–	0.8	1.6
of which reused at another company	–	–	–
<b>Total untreated wastewater in m<sup>3</sup></b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Total untreated wastewater	856,316	932,589	810,030
<b>Total untreated wastewater in %</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
of which discharged into the public sewage system	44.4	42.0	49.6
of which discharged into surface water	55.5	57.7	50.1
of which discharged into groundwater	0.2	0.3	0.3
of which reused at another company	0	< 1	< 1
<b>Wastewater quality<sup>1)</sup> in t</b>	<b>FY 2021/22</b>	<b>FY 2020/21</b>	<b>FY 2019/20</b>
Biological oxygen demand (BOD)	1.5	3.6	7.7
Chemical oxygen demand (COD)	5.9	10.8	25.2
Total suspended matter content	2.1	3.2	6.3
Heavy metals	0.0	< 1	< 1
Nitrogen	0.3	1.9	1.0
Phosphorus	< 1	< 1	< 1

The monitoring processes to measure and control locations' wastewater quality are designed to fulfill the respective local statutory requirements. The existence of monitoring processes is recorded via hse+. Currently 29 % of total wastewater volume is covered by monitoring processes.

<sup>1)</sup> The emissions in wastewater are based on the volume of wastewater streams from Voith locations subject to monitoring and the respective average of the measured concentrations.

## Products and supply chain

### Management approach

#### Calculation method for CO<sub>2</sub> emissions of products in the use phase

Voith has developed its own concept for analyzing CO<sub>2</sub> emissions of products in the use phase, which is aligned with the GHG Protocol. TÜV SÜD Industrie Service GmbH was contracted to perform an independent verification of the analysis based on ISO 14064-03:2019 and with reference to compliance with the requirements of ISO 14067:2019. The calculation methods and results were verified in October 2021.

The calculations included all material products delivered in the 2019/20 fiscal year. The calculation of emissions and emission savings is based on usage scenarios and average emission factors relating to one year. Only the use phase was considered; upstream or downstream stages of the value chain such as the supply chain, product manufacture, transport, construction, and disposal of the plants were not considered.

The Paper Division includes whole facilities such as stock preparation and paper machines, as well as facility modifications. Other plant components, such as drying units, pumps and pipes that do not originate from Voith, were delimited accordingly. To calculate emissions, the paper produced was multiplied by the specific energy consumption per ton as well as a CO<sub>2</sub> factor and a run time of one year.

In the Voith Turbo Division, emissions resulting from the use of Voith products (transmissions, hydrodynamic couplings, retarders, and dampers) were considered. The calculation of the corresponding emissions is based on the respective efficiency or weight, depending on the product.

For hydropower and wind turbine installations, no emissions were calculated but rather emission savings. The energy fed into the grid was multiplied by the grid mix of hard coal and natural gas power plants and the Voith share, measured by the cost share in relation to the total cost of the project and a run time of one year.

R&D expenditure	Research and Development in € millions	FY 2021/22	FY 2020/21	FY 2019/20
	R&D expenditure		213	192
R&D expenditure	Research and Development in %	FY 2021/22	FY 2020/21	FY 2019/20
	R&D percentage		4.4	4.5

### Reliable and safe products

#### Quality targets

- Ensure customers' requirements are met to their complete satisfaction
- Comply with legal, regulatory, and further governmental requirements
- Ensure the quality of products and services
- Reduce quality costs, risk costs, and especially error costs
- Reduce technical risk potentials and the probability of their occurrence
- Increase efficiency and effectiveness through consistent, clear structures
- Ensure the development and qualification of employees
- Align all measures with increasing efficiency and effectiveness
- Ensure reporting and data analysis across Voith companies with the goal of reducing quality costs, environmental, health and occupational safety as well as regulatory risk costs, and identify early warning signs for risk management
- Focus on preventive measures (e.g. FMEA and DRBFM (Design Review Based on Failure Mode))

## Product impacts by Group Division

### Further information on Life Cycle Assessments carried out

At **Voith Hydro**, a generic Life Cycle Assessment (LCA) model for hydropower plants was created as early as 2010 and evaluated in a case study for a pumped storage plant. In 2018, a detailed LCA for StreamDiver applications was carried out. In the current reporting year, a LCA for vanadium redox flow batteries was also completed. In addition, we are receiving more and more customer enquiries about the CO<sub>2</sub> footprint of Voith Hydro products. To meet these requirements, we created a simplified tool in the reporting year based on data from the world's leading LCA database, GaBi, which enables us to make fast and reliable statements about the CO<sub>2</sub> emissions of our products. In addition to the materials and quantities used, information on transport is also considered.

The spectrum of LCAs carried out at **Voith Paper** ranges from a fundamental analysis of the paper production process from 2014 to LCAs from fiscal year 2021/22 that were prepared for the various yarn types used in the production of coverings. Their results show that the majority of greenhouse gas emissions associated with yarns occur during raw material extraction. We meet the resulting requirements of our customers regarding LCA or CO<sub>2</sub> data for wearing and consumable products in the Voith Paper Division by performing analyses for relevant products and making the results available to our customers. For example, in the year under review we started collecting data in order to calculate LCAs for the coverings and roller shells.

At **Voith Turbo**, an LCA for drive systems with DIWA NXT (combustion engine), DIWA NXT+CRU (hybrid transmission), and VEDS (electric drive) was carried out in fiscal year 2020/21. A comparative LCA with cradle-to-grave limits was calculated for a Veco drive and a Vorecon drive. However, this analysis does not correspond to the LCA according to ISO 14040 and 14044, as the cost of the LCA would have exceeded the economically reasonable scope.

The available analyses of the global warming potential of our products show that the majority of CO<sub>2</sub> emissions occur during the use phase. The production, transport, and end-of-life phases, on the other hand, are of little significance. In addition, Voith Turbo's analyses once again show the importance of the Group Division's electrification strategy. For example, a city bus drive system with electric propulsion causes significantly lower emissions during the use phase than similar technologies with fossil fuel or hybrid propulsion. The same applies, among other things, to the stock preparation systems at Voith Paper: Here, up to 20% less energy is consumed compared to competing technology.

### Further information on social and environmental impacts – Voith Hydro

Technology	Sustainability impacts	Area of application (product group)
<b>Cavitation Erosion Detection:</b> Enables statements on the intensity of material removal and/or damage to affected components, depending on their operating condition, as well as the creation of condition-based analysis reports and the derivation of recommendations for action.	<ul style="list-style-type: none"> <li>Improved reparability</li> <li>Improved upgradability/retrofitting</li> <li>Improved service life technology</li> </ul>	<ul style="list-style-type: none"> <li>Condition Monitoring</li> <li>System/Digital Hydro/HyService application area</li> </ul>
<b>StreamDiver:</b> Enables the installation of new hydropower plants under strict environmental conditions at existing dams, locks, and irrigation dams. This allows energy potential to be used that cannot be tapped with conventional power plant concepts.	<ul style="list-style-type: none"> <li>Improved energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Small Hydro</li> </ul>

#### Approach to noise emissions and pollution at Voith Hydro

At Voith Hydro, noise emission targets are set on a project basis in the calls for tender. Specifically with regard to noise emissions, Voith Hydro pursues the ongoing goal of predicting noise emissions increasingly accurately and defining necessary measures in advance.

An example of a project-specific measure to reduce noise emissions is the Voith turbine gearbox for the Barrage du Seujet hydropower station on Lake Geneva. For years, the power plant could not be operated at night due to low-frequency vibrations that were clearly noticeable inside the adjacent residential area's buildings. Together with the power plant operator's technical partner, Voith developed the concept for an improved transmission arrangement. As a result, outstanding gear-system efficiency of over 99% was achieved. In addition, it was possible to reduce noise emissions to such an extent that the power plant can now be operated continuously.

StreamDiver, Voith's particularly environmentally friendly compact turbine, is also especially quiet. These advantages, combined with the possibility of installing the units directly in the tunnel, also convinced Eisackwerk s.r.l. in the reporting year to rely on this solution as a supplement to the existing Pelton units in its project in St. Anton near Wangen in Italy.

**Selection: Technologies for improved social and environmental impact of Voith Paper**

Technology	Sustainability impacts	Area of application (product group)
Introduction of the <b>Curved Bar Refiner Plate</b> , whose new design significantly reduces wear of the die plates in the pulper. The service life has more than tripled.	<ul style="list-style-type: none"> <li>• Improved reparability</li> <li>• Improved upgradability/retrofitting</li> <li>• Improved service life technology</li> </ul>	<ul style="list-style-type: none"> <li>• Products &amp; Services</li> </ul>
After extensive fluid mechanics surveys on our pilot plants and by using 3D printing in production, we were able to completely redesign key functional components of the <b>EdgeExpert 2.0</b> . For example, its range of applications has significantly expanded to save fibers and energy for even more customers.	<ul style="list-style-type: none"> <li>• Improved resource and material efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Products &amp; Services</li> </ul>
<b>Green Pulping Technology:</b> This new pulping concept for recycled paper enables significantly more energy-efficient pulping of recovered paper. The pilot installation was put into operation at the customer's location in February 2022. The first step was to pulp the internal broke. This already demonstrated that energy savings of more than 30% can be achieved. In the next step, used corrugated packaging will be broken down to test the concept for an expanded range of applications.	<ul style="list-style-type: none"> <li>• Improved energy efficiency</li> <li>• Improved climate footprint</li> </ul>	<ul style="list-style-type: none"> <li>• Projects</li> </ul>
<b>ProLube/FilmLube:</b> Freshwater consumption for lubrication spray pipes is greatly reduced, and the moisture cross-profile of the wet felts is significantly more uniform. This improves the useful life of press felts by up to 30%. The machine environment is also safer for the plant operators, as no spray water mist is deposited, avoiding slippery walkways.	<ul style="list-style-type: none"> <li>• Improved safety</li> <li>• Improved service life</li> </ul>	<ul style="list-style-type: none"> <li>• Rollers and covers</li> </ul>
<b>Smart Loop Technology for water treatment:</b> This technology is the result of a cooperation project with Voith subsidiary meri Environmental Solutions. It enables improved cleaning of wastewater from paper factories. This reduces freshwater consumption by about 4 m <sup>3</sup> of freshwater per metric ton of paper. With an annual production output of 750,000 t of paper, this corresponds to a saving of around 3 million m <sup>3</sup> freshwater per year.	<ul style="list-style-type: none"> <li>• Improved environmental compatibility</li> <li>• Improved resource and material efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Projects</li> </ul>
<b>Polyurethane roller coverings:</b> These roll covers have a significant proportion of bio-based raw materials and present unchanged excellent product properties. These have been commercially available to our customers as part of field trials since October 2021.	<ul style="list-style-type: none"> <li>• Reduced carbon footprint of the product</li> </ul>	<ul style="list-style-type: none"> <li>• Rollers and covers</li> </ul>
<b>Forming screens:</b> Further, forming screens were developed to reduce the load absorption in the forming section. As a result of the field test phase, which has now been completed, nine out of ten fabrics showed lower energy absorption in the forming section. The field tests on reducing the load absorption were completed in the reporting year. They showed that the use of the innovative material employed allows a targeted release of water for improved lubrication. The resulting optimized friction conditions subsequently reduce the load absorption in the forming section.	<ul style="list-style-type: none"> <li>• Improved energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Covers</li> </ul>



**Further information on social and environmental impacts – Voith Turbo****Approach to dealing with sound and noise emissions at Voith Turbo**

Voith Turbo works continuously to reduce its products' noise emissions. To this end, Voith Turbo always aims to comply fully with the technical specification for interoperability (TSI) relating to the subsystem "rolling stock – noise" (TSI Noise) according to EU regulation 1304/2014, as well as DIN EN ISO 3095 ("Acoustics – Railway applications – Measurement of noise emitted by railbound vehicles"). Other noise emission standards such as ISO/TR 11688-1/2 are also met. Examples are the Silent Vent fan wheel and the bionic gearing of final drives in the field of drive technology. Bionic toothing was developed to minimize material costs and noise emissions in gear drives; it is already being used in the serial production of rail vehicles and enables a reduction in noise emissions by up to 10 dB(A). An example of this is a new railcar transmission test stand that allows Voith Turbo to conduct detailed noise measurements, advancing the optimization of railcar-transmission noise emissions. An approach to reducing the noise generated by railcar transmissions was also developed.

**Responsibility in the supply chain**

Procurement markets	Regional distribution in %	FY 2021/22	FY 2020/21	FY 2019/20
	Europe	58	61	57
	Americas	20	16	18
	Asia	21	23	24
	Other	1	0	1

Conflict materials	Due diligence process in compliance with the US Dodd-Frank Act at Voith Turbo in %	FY 2021/22	FY 2020/21	FY 2019/20
	Proportion of relevant suppliers identified for the investigation of conflict minerals	52	52	–
	Response rate of the relevant suppliers	91	88	–

Of the Voith Group Divisions, only Voith Turbo is required to report on the topic of conflict minerals. The Group Division reports in accordance with the legal requirements of the United States Securities and Exchange Commission (SEC) on the topic of conflict minerals. Voith Turbo is also committed to taking appropriate steps within its organization in relation to its own supply chain to ensure that Voith Turbo products contain no conflict minerals within the meaning of Sections 1502 and 1504 of the US Dodd-Frank Act.

**Voith Turbo Quality Guideline**

The Quality Guideline of the Voith Turbo Group Division specifies – in addition to the requirements in the GPC – further requirements for dealing with conflict minerals (see item 7.3.2 Conflict minerals). The Quality Guideline is publicly available; in addition to providing a clear definition of conflict minerals and conflict resources, it also contains detailed obligations for suppliers regarding due diligence and reporting obligations on the topic of conflict minerals as defined by the Dodd-Frank Act.

For example, we require our direct suppliers to source 3TG (tantalum, tungsten, tin, and gold) from smelters whose due diligence has been certified by an independent third-party audit program, such as the Responsible Minerals Assurance Process (RMAP) under the Responsible Minerals Initiative (RMI). In addition, all relevant Voith Turbo suppliers are required to provide information on conflict minerals in the products they have supplied. They are to use the standard Conflict Minerals Reporting Template (CMRT) of the Responsible Minerals Initiative (RMI) for this purpose. The CMRT complies with the IPC-1755 Conflict Minerals Data Exchange standard and thus covers all reporting requirements resulting from the US Dodd-Frank Act. Voith Turbo evaluates the data in a regular review process and adopts appropriate corrective measures where any deficiencies are uncovered. A finer pre-selection process significantly reduced the number of suppliers to be surveyed in the year under review, while at the same time we were able to increase the response rate to over 90% thanks to more user-friendly preparation and more intensive supplier support.

Scope of training	Training of Purchasing employees globally Number	FY 2021/22	FY 2020/21	FY 2019/20
	Purchasing employees	approx. 450	approx. 450	approx. 500
	Purchasing employees trained	almost all	almost all	almost all
	Hours of training of Purchasing employees (total)	7,197	4,522	6,152

Supplier risk assessment

**Evaluation of existing suppliers**

In addition to the risk analysis introduced in the period under review, the Voith Hydro and Voith Turbo Group Divisions have been conducting their own supplier risk assessments for several years.

Voith Turbo, for example, has implemented a multi-stage process for assessing supplier risks. In addition to basic risk categories such as creditworthiness, quality and delivery reliability, competitiveness and customer structure, the process includes further risks such as geographical location, geographical and political risk, or the interruption of supply systems.

For supplier assessments and supplier audits, Voith Turbo applies the audit standard VDA 6.3 Process Audit. This includes questions on the subject of occupational health and safety and environmental protection: For example, it checks whether the supplier has implemented a system for occupational health and safety and environmental protection and whether there is a system for implementing the material compliance requirements (EC 1907/2006 REACH or, in the case of electronics suppliers, Directive 2011/65/EU ROHS).

At Voith Hydro, suppliers are intensively monitored with regard to compliance and quality throughout the entire life cycle. Before being included in the supplier database, suppliers are subjected to a check with regard to integrity (including compliance and HSE criteria), financial stability, implemented quality systems, and experience and references in cooperation. In the case of suppliers of important power plant components and services, on-site audits are also used. The audits are carried out jointly by Quality Assurance and the Supplier Development & Support function based in Purchasing. To ensure the highest level of quality assurance, Quality Management always has the final decision in the approval process via a veto right.

Supplier self-assessment

Suppliers who have submitted a self-assessment Number	FY 2021/22	FY 2020/21	FY 2019/20
Compliance & Sustainability Check of initial self-assessment	2,671	3,417	3,532
Suppliers who have submitted a self-assessment in %	FY 2021/22	FY 2020/21	FY 2019/20
Share of the invoice volume obtained from suppliers for whom there is a valid Compliance & Sustainability Check of the initial self-assessment	52.0	67.4	63.7

The reduction in the coverage rate is due to the process being switched over to the new PurONE purchasing system in the reporting period. Since the Compliance and Sustainability questionnaire is now a mandatory part of the registration process, a renewed increase in the rate can be expected in the future.

Supplier evaluation

Evaluation of existing suppliers Number	FY 2021/22	FY 2020/21	FY 2019/20
Evaluations (individual processes)	–	554	1,128
Suppliers evaluated	–	464	963
Suppliers audited	n.d.	n.d.	n.d.
Evaluation of existing suppliers in %	FY 2021/22	FY 2020/21	FY 2019/20
Sustainability ratio	–	86.0	83.2
Supplier evaluation ratio (percentage of invoice volume by evaluated suppliers)	–	18.0	26.7
Invoice volume in € millions	FY 2021/22	FY 2020/21	FY 2019/20
Invoice volume with suppliers with a current and approved supplier evaluation	–	329	479

Our established method of supplier evaluation is currently being moved over to the new PurONE purchasing system. We are reviewing the scope of application and responsibilities as part of this migration. The evaluations are always carried out retrospectively and start after the end of the fiscal year. In order to be able to account for the entire scope in future, the upcoming evaluations, which have started for the 2021/22 fiscal year, will be reported next year.

Supplier compliance

Supplier compliance Number	FY 2021/22	FY 2020/21	FY 2019/20
Blocked suppliers	–	–	13

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



## About this report

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Since 2011, our Sustainability Report has informed our stakeholders annually about our sustainability performance. This report describes the progress made in the 2021/22 fiscal year, i.e. from October 1, 2021 to September 30, 2022. In it we focus on the material fields of action for our company and our stakeholders. The report will be published on our website together with a supplementary Fact base. In addition, for many years now we also outline our sustainability activities in our Annual Reports.

In compiling our report we follow the internationally recognized guidelines of the Global Reporting Initiative (GRI). The scope of our report fulfills the requirements of the Core option of the GRI Standard 2016. The editorial deadline for submission of relevant content for inclusion is December 1, 2022. The report was not audited externally. In 2018 we carried out a comprehensive stakeholder survey to identify the material sustainability topics and enhance our materiality analysis; this report continues to include those results.

Unless stated otherwise, the facts, figures, and information provided in this report apply globally to the following Voith Group Divisions: Voith Hydro, Voith Paper, and Voith Turbo worldwide. Please refer to the Voith Annual Report for details of the Group companies covered. With the exception of the total number of employees and sales revenue, the qualitative and quantitative information in this report does not include the acquisition of the Argo-Hytos Group effective August 2, 2022. The degree of consolidation comprises at least 80 % of the Voith Group by revenue, headcount, and consumption, and includes all of our Group's major locations. While we provide employee key figures in this report in terms of headcount, in our Annual Report we state this figure mainly in terms of FTEs (full-time equivalents); this may lead to discrepancies between the figures.

The data for the core figures provided in this report were gathered using mainly Division-specific software. Figures have been commercially rounded to support reporting clarity, which may cause discrepancies between the individual totals given in the relevant tables and final Group-wide totals. In individual cases it is not yet possible to derive a three-year trend; however, this is our objective for future reports. In a few cases, certain key figures already reported relating to previous reporting periods have been retrospectively updated due to a change in the underlying data basis or calculation methodology; we have indicated this in the report at the corresponding points. All forward-looking statements in this report are based on reasonable assumptions as at the deadline for report content submission. Due to unknown risks, uncertainties, and other factors, the actual results, developments, or performance of our company may deviate from our forecasts, estimations, and statements. (For further information please see our Annual Report.)

In recording its GHG emissions, Voith complies with the guidelines set out in the Greenhouse Gas (GHG) Protocol. Emissions of greenhouse gases such as CH<sub>4</sub>, N<sub>2</sub>O, HCF, PFC and SF<sub>6</sub> are recorded as CO<sub>2</sub> equivalents using conversion factors and are reported correspondingly as CO<sub>2</sub>e.

Voith is committed to Diversity and Inclusion and seeks to express this, among other ways, through gender-inclusive statements in this report.



Further information is provided at [www.voith.com](http://www.voith.com) and in our Annual Report. We currently expect to publish our next Sustainability Report in early 2024.



# Imprint and contacts

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## **Further information**

The Sustainability Report is also available in German.  
The German and English editions are available online at:  
<https://voith.com/corp-de/ueber-voith/nachhaltigkeit.html>  
<https://voith.com/corp-en/about-us/sustainability.html>

In addition to the Sustainability Report, Voith also publishes a comprehensive Annual Report at the end of the fiscal year.  
It is available online at:  
[www.voith.de](http://www.voith.de)

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**VOITH**