

# SUSTAINABILITY REPORT 2022

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[Cover picture](#)

## **Tanzania's CloudFishers**

Read more about the story behind our cover picture on page 62 ff.

# Foreword by Stefan Klebert

Chief Executive Officer

Dear Readers,

The world is currently in the grip of multiple crises which are setting the political agenda and dominating the headlines. The pandemic barely seemed to be over before new global challenges erupted: war, inflation, the threat of recession, supply bottlenecks and energy shortages are the watchwords of the day.

In light of this, there is a danger that sustainability and climate protection may fade into the background. Is sustainable industry a luxury we cannot currently afford? In my view, the opposite is true. We need to drive the transformation of our economy and find new solutions faster than ever before. Saving energy, boosting efficiency and conserving resources have always been the right thing to do. And these efforts are more important than ever given the march of climate change coupled with the need to ensure our resilience and security of supply.

At GEA, we are working tirelessly to achieve our sustainability targets. Now more than ever, this issue is our top priority. The conviction that this is the right way forward extends to every corner of our company. Sustainability was once again the highest-rated aspect in our 2022 employee survey. This underscores the commitment of our coworkers across the globe to live our corporate purpose: “Engineering for a better world” and translate it into practice.



As engineers, we have a special responsibility to help preserve a world worth living in. Machinery, equipment and production processes are central to value creation around the world. Without our efforts to continuously improve, no effective progress would be made. At the same time, sustainability is opening up new horizons and significant economic opportunities for companies. The future belongs to intelligent solutions that save energy, avoid emissions and conserve resources. These solutions ensure that we and our customers maintain an edge over the competition.

We made good progress in this direction last year. Our activities were wide-ranging and covered all areas of the company. This report presents the most important of these activities.

We continued to raise employee awareness through online courses on climate-related topics and group-wide sustainability weeks. The transition to sustainable mobility is also well underway. It is already mandatory for all new GEA executive vehicles in an increasing number of countries – including Germany – to be fully electric.

In the reporting year, we also commissioned our first climate neutral factory in Koszalin, Poland, implementing the highest environmental standards. Our next sustainable production facility is already planned: We are investing EUR 70 million in a pharmaceutical technology center, which we intend to open in Elsdorf near Cologne, Germany, in 2024. This will likewise set benchmarks for environmental and climate protection.

To optimally support our customers, we accelerated our rate of innovation in 2022 and prepared for the rollout of a green label for our products. We are focusing on increasingly energy-efficient products, such as our AddCool heat pump technology, which can reduce energy consumption

and CO<sub>2</sub> emissions by up to 50 percent. At the same time, we believe it is important to design plants in a way that ensures their technical potential is fully leveraged.

We are additionally enhancing sustainability in our supply chain by gradually raising our requirements. In the past year, we defined sustainability criteria, which our preferred suppliers must comply with by 2026.

One thing is clear: To achieve progress, we must work together. The success of our efforts depends on cooperation at every link in the value chain. That is why we are working closely with our customers and suppliers to implement our agenda.

Everything we do is rooted in our sustainability strategy and its highly ambitious targets. For example, we aim to reduce our greenhouse gas emissions to net zero by 2040. We are targeting a 60-percent reduction in emissions from our own operations (Scope 1 and 2) and an 18-percent reduction in emissions from our supply chain and the product life cycle (Scope 3) by 2030. By using 100 percent green electricity, we were able to reduce emissions from our own activities by 51.1 percent compared to 2019.

Another key element of our 360-degree sustainability strategy is social engagement. For instance, we promote our employee participation in voluntary activities. Starting in 2023, all GEA employees will be able to use one paid day a year for voluntary work. In addition, we made substantial donations to social causes in the past year, including the aid organization BILD hilft e.V. "Ein Herz für Kinder," the non-profit organization Viva con Agua, and the German Red Cross for aid to Ukraine.

Our commitment to improved sustainability and climate protection has also been noted externally and recognized in diverse ways. Numerous institutions again acknowledged our achievements in 2022, awarding us top places in their ratings and rankings. For example, we were a finalist for the German Sustainability Award and the only German company added to the Dow Jones Sustainability Europe Index last year. The CDP included us once more in the climate "A list" and our gold rating from EcoVadis was confirmed.

Although the global situation is tougher than it has been for a long time, the worldwide sustainability transformation is imperative and must remain at the top of our agenda. Ultimately, each and every one of us knows that we must act now. There is no more time to lose. At GEA, we have grasped this and are leading the way, setting ourselves ambitious targets and working relentlessly to ensure our progress.

I would like to express my sincere thanks to all our employees who are supporting and advancing our journey with heart and soul, passion and commitment. I invite you to read about our activities in the following pages and to join us on our shared path toward a more sustainable future.

Sincerely,



Stefan Klebert

# GEA AT A GLANCE

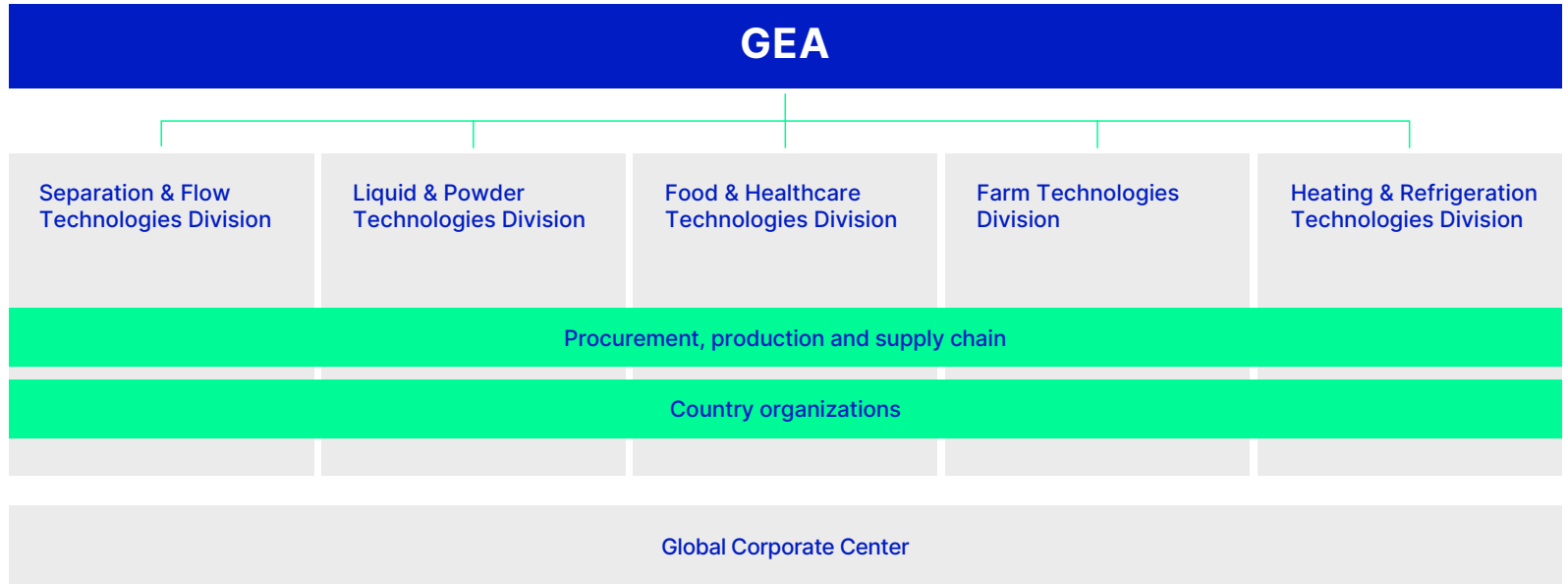


# GEA at a glance

GEA Group is an internationally active technology group specializing in machinery and plants, together with process technology and components. We provide solutions for sophisticated production processes in diverse end-user markets and also offer a comprehensive service portfolio. In doing so, we help our customers to make their production processes ever more sustainable and efficient. GEA is one of the largest suppliers of systems and components to the food, beverage and pharmaceutical industries, as well as to a wide range of other processing industries such as chemicals. The group is a specialist in its respective core technologies and a leader in many of its markets worldwide. It promotes a strong innovation-led culture in order to maintain its technological edge going forward. Further details can be found in the Annual Report 2022 under “Fundamental Information about the Group” in the section “Research and Development.”

Since January 1, 2020, GEA Group has been split into five divisions, each with up to six business units. The divisions are based on similar technologies and mostly have leading market positions. Each division is headed by a management team comprising three

members: a divisional CEO, a divisional CFO and a divisional CSO (Chief Service Officer). The CSO role in each division underscores the significance of the growing, high-margin service business.



GEA's enduring success is based on major global megatrends, such as:

- Global population growth
- Growth of the middle class
- Healthy and safe nutrition
- Essential and affordable medicines
- Sustainable and efficient production processes that conserve resources

 GEA locations



# Separation & Flow Technologies Division

World-class components and equipment for production excellence

### Separators . Homogenizers . Valves & Pumps

Separation & Flow Technologies encompass process engineering components and machines, including separators, decanters, homogenizers, valves and pumps. These technologies are at the heart of many production processes.

Our solutions contribute to a cleaner environment in numerous industrial applications. They also ensure the efficient separation and homogenization of liquids used in the production of foods, beverages, medicines and home & personal care products that consumers enjoy and rely on. GEA pumps and valves guarantee that raw materials and products move safely and efficiently through plants.

Revenue

**1,416**

EUR million  
Previous year: EUR 1,237 million

EBITDA before restructuring expenses

**360**

EUR million  
Previous year: EUR 303 million

EBITDA margin before restructuring expenses

**25.4**

percent  
Previous year: 24.5 percent

Employees

**4,907**

Full-time equivalents  
Previous year: 4,860





# Liquid & Powder Technologies Division

Specialists in processing equipment and integrated solutions

Liquid & Filling Technologies . Powder & Thermal Separation Technologies . New Food

Liquid & Powder Technologies provide processing equipment and integrated solutions for the dairy, food, new food, beverage, chemical and home & personal care industries. The portfolio includes brewing systems, liquid processing & filling, concentration, precision fermentation, crystallization, purification, drying, powder handling & packaging as well as systems for emission control.

GEA designs, builds, configures and installs versatile and sustainable equipment and technologies, processing lines and complete plants, for products as diverse as cell-based protein and polymers.

Revenue  
**1,716**  
EUR million  
Previous year: EUR 1,546 million

EBITDA before restructuring expenses  
**166**  
EUR million  
Previous year: EUR 150 million

EBITDA margin before restructuring expenses  
**9.7**  
percent  
Previous year: 9.7 percent

Employees  
**5,404**  
Full-time equivalents  
Previous year: 5,241



# Food & Healthcare Technologies Division

Safe foods and medicines for a growing population

Pasta, Extrusion & Milling . Bakery . Slicing & Packaging . Food Solutions . Frozen Food . Pharma & Healthcare

Food & Healthcare Technologies provide solutions for food processing. This covers preparation, marinating and further processing of meat, poultry, seafood and vegan products, in addition to processing lines for pasta, baked goods, snacks, breakfast cereals, confectionery and pet food. GEA also offers spiral- and tunnel freezers, as well as equipment for slicing and packaging of food and milling.

GEA solutions for the pharmaceutical industry include machines and plants for processing solid dosage forms, including highly potent drugs for batch or continuous production. This portfolio also includes freeze-drying technology for liquids, such as vaccines.

Revenue  
**1,001**  
EUR million  
Previous year: EUR 937 million

EBITDA before restructuring expenses  
**107**  
EUR million  
Previous year: EUR 100 million

EBITDA margin before restructuring expenses  
**10.7**  
percent  
Previous year: 10.7 percent

Employees  
**3,571**  
Full-time equivalents  
Previous year: 3,577



# Farm Technologies Division

## Next generation farming

### Dairy Farming: Milking, Feeding, Manure, Digital Herd Management, Hygiene & Service

Farm Technologies offer integrated customer solutions for efficient and sustainable high-quality milk production and livestock farming. This includes automatic milking and feeding systems, conventional milking solutions and digital herd management. GEA manure management solutions ensure operators have the right tools for the safe storage, application and upcycling of this important resource.

All solutions are served and fully embedded into our service lifecycle. They are complemented by a wide range of hygiene products and chemicals to promote optimum udder health and superior milk quality.

Revenue

742

EUR million  
Previous year: EUR 634 million

EBITDA before  
restructuring expenses

86

EUR million  
Previous year: EUR 76 million

EBITDA margin before  
restructuring expenses

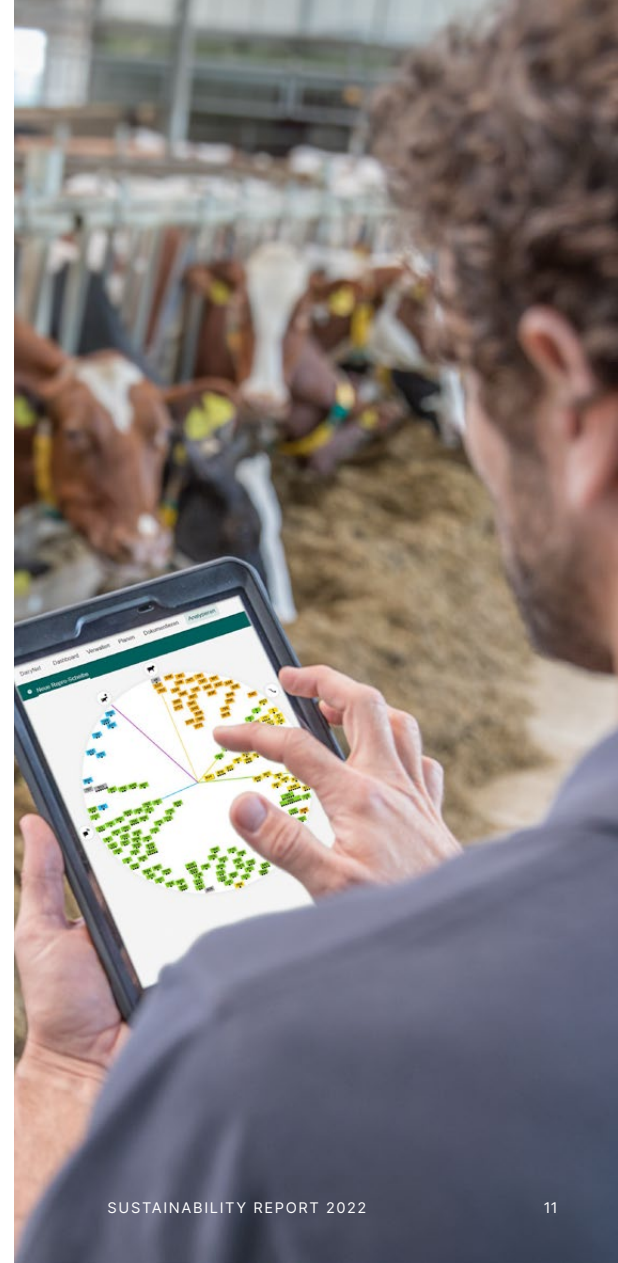
11.6

percent  
Previous year: 12.0 percent

Employees

1,909

Full-time equivalents  
Previous year: 1,865



# Heating & Refrigeration Technologies Division

Industrial heating and cooling solutions for climate-friendly production processes

Turnkey installations . Compressors & compressor packages . Heat pumps . Chillers . Controls . Valves

Heating & Refrigeration Technologies combine extensive production process knowledge and integrated heating and cooling expertise. It provides sustainable, energy-saving solutions for customers in the food, beverage and other key industries. All offerings are supported by comprehensive digital and service platforms.

GEA plays an important role in the decarbonization of production processes, cities and other market activities. Via a sustainable engineering solutions platform, which includes a comprehensive portfolio of heat pumps, GEA delivers the precise temperatures critical to each customer's operation. These proven technologies provide integrated, high-efficiency solutions that significantly reduce CO<sub>2</sub> emissions and energy costs.

Revenue

524

EUR million  
Previous year: EUR 584 million

EBITDA before restructuring expenses

57

EUR million  
Previous year: EUR 59 million

EBITDA margin before restructuring expenses

10.9

percent  
Previous year: 10.2 percent

Employees

1,716

Full-time equivalents  
Previous year: 2,091





# Interview with Dr. Nadine Sterley

Chief Sustainability Officer

**Did the geopolitical and economic headwinds in 2022 impact GEA's progress in the area of sustainability?**

It was a challenging year, but we stayed on track. Over the past twelve months, we have paid particular attention to our own operating activities. All of GEA's sustainability targets are now firmly embedded in our organization, with designated individuals and teams responsible for our progress in this field. At the same time, we launched an internal energy-saving campaign and identified our most energy-intensive sites. These have been given priority in our 2040 decarbonization roadmap. By switching to renewable energy sources, we have already halved our Scope 1 and 2 greenhouse gas emissions compared with 2019. We neutralize GEA's remaining emissions through investments in Gold Standard climate protection projects around the world. In view of the global energy crisis, we have pushed ahead with our own sustainability initiatives.

### **Does this mean GEA is on track to achieve net zero by 2040?**

Yes. As mentioned, we are very confident with regard to our Scope 1 and 2 emissions. Admittedly, Scope 3 emissions pose more of a challenge for GEA as a mechanical engineering company. Most of these indirect emissions result from the use of our machinery by customers; the remainder are upstream emissions from suppliers.

To achieve our net-zero target, we need to get the entire value chain on board. We have introduced a sustainable procurement strategy for our key suppliers and maintain a regular dialog with them regarding the requirements they must meet in full by 2026. With regard to our customers, our main focus is product innovation. We use the emissions data they provide to continuously improve our solutions and make them more efficient. Our new “Add Better” green label embeds sustainability even more deeply in product development. This label enables customers to easily identify our most resource-efficient products, which will in turn help them – and us – reduce greenhouse gas emissions.

### **What social initiatives did GEA launch in 2022?**

We launched an integrated social engagement concept and a corporate giving strategy. These initiatives have two specific goals: We intend to donate one percent of the group’s net profit each year and share knowledge with 100,000 people through our employees’ voluntary work by 2026.

Our giving strategy has four pillars: disaster relief, promoting education – especially in mathematics, IT, science, engineering and technology – combating child poverty and promoting access to clean water, renewable energy and medical care. With regard to volunteering, we want to encourage all GEA employees to use their skills to benefit society in one of the four focus areas mentioned. Starting in 2023, all employees will be able to take one day of paid leave each year to volunteer.

Additionally, we made significant progress in the areas of diversity and inclusion last year. Examples include the mentoring program for women and our Lean In Circles. Both of these initiatives aim to empower and raise the profile of women at GEA. We want to encourage more female employees to pursue a leadership track. Because mechanical engineering still attracts far fewer women than men, we need to work all the harder. GEA is a diverse, open and culturally sensitive company. To make sure it stays that way, we have also expanded the geographic footprint of our recruiting team. Internally, we encourage virtual interactions between employees from different countries, which forges closer relationships. The goal of all these activities is to make GEA an employer of choice in our industry.

### **How does GEA integrate sustainability with corporate governance?**

First of all, sustainability is a key element in our Mission 26 corporate strategy. That makes it fundamental to all decisions we make as a company. We have established a GEA Sustainability Committee, whose members include representatives from our divisions and global functions. This ensures a coordinated approach across the company, enabling us to efficiently implement our sustainability targets.

In 2021, GEA integrated its sustainability targets with the new Executive Board remuneration system. From 2023, our senior management, the Global Executive Committee, will also be included in this incentive scheme.

*“Sustainability is a key element in our Mission 26 corporate strategy. That makes it fundamental to all decisions we make as a company.”*





*"I am especially gratified by the high level of motivation and commitment shown by many of GEA's employees across the globe. Our people are proactive and have a real desire to contribute."*

At the same time, we have established a sustainable finance team within our finance organization, which has helped us become more sustainable in this area. For example, GEA's syndicated loan now has sustainability-linked features. This means that our sustainability performance influences the interest rate payable on borrowed funds. In addition, GEA is the first company in Germany to combine a share buyback program with an initiative to donate the resulting savings. And in 2022, we donated EUR 250,000 to an organization dedicated to providing clean water to schools in Tanzania.

#### **How important is it to inspire and encourage other companies to be more sustainable?**

This is a crucial aspect of our sustainability efforts. We want to lead by example and play an active role, sharing our experience and expertise and taking others along on our journey. GEA is a member of the World Economic Forum's Alliance of CEO Climate Leaders and the Alliance for

Clean Air. As part of these initiatives, we want to motivate other companies to join the collective effort to reduce harmful emissions and promote standards for reporting and disclosing these emissions.

GEA is involved in other sustainability organizations, such as the International Sustainability Standards Board (ISSB) and econsense, a sustainability network of 47 like-minded multinational companies, which – like GEA – are all pioneers in the field of sustainability. Through our membership in these organizations, we aim to foster dialog with other international companies and encourage legislators in Germany and the European Union to further enhance sustainability standards.

#### **Where do you think GEA currently stands with regard to sustainability?**

GEA has been committed to sustainability for many years – long before "ESG" became a buzzword. So we are making very good progress. This is borne out by the regular accolades we receive. For instance, we were

a finalist for the German Sustainability Award in 2022 and have been newly included in the Dow Jones Sustainability Europe Index. We are also a well-established fixture in the DAX 50 ESG and MSCI Global Sustainability indices.

I am especially gratified by the high level of motivation and commitment shown by so many of GEA's employees across the globe. Our people are proactive and have a real desire to contribute. Every time we reach out to them, the most frequently asked question is: "What can I do?" Whether it's finding specific ways to save energy at our sites or joining a working group – they pitch in. And they know how much we value their input. This is vital because we need the support of all GEA employees to achieve our ambitious goals.

# MISSION 26





# FINANCE ALSO NEEDS TO BECOME GREENER

Sustainable finance is becoming more and more important for companies. Like others, GEA considers environmental, social and governance factors in its investment decisions. We are the first company in Germany to combine a share buyback with a sustainability initiative. An ESG component was incorporated into the second tranche of the share buyback program, which was carried out with the bank BNP Paribas. This enabled us to finance a drinking water project in Tanzania. Further information can be found on page 62. To ensure that our finance activities make a meaningful contribution to sustainability over the long term, sustainability criteria were added to our internal loan agreement ahead of schedule in 2022; this represents GEA's first sustainable financing agreement. These indicators pave the way for the guarantees and warranties that we issue in our operating business to make sure that sustainability criteria are standardized in local projects.



Mission 26

# Our responsibility for tomorrow's world.

Sustainability is a reality lived and breathed in the GEA Group. It is a linchpin of our company's future viability. That is why sustainability is also a cornerstone of our corporate strategy. This means optimizing our own processes, delivering products and services that enable our customers to achieve their sustainability goals and engaging in dialog with local communities in working toward a carbon-neutral future.

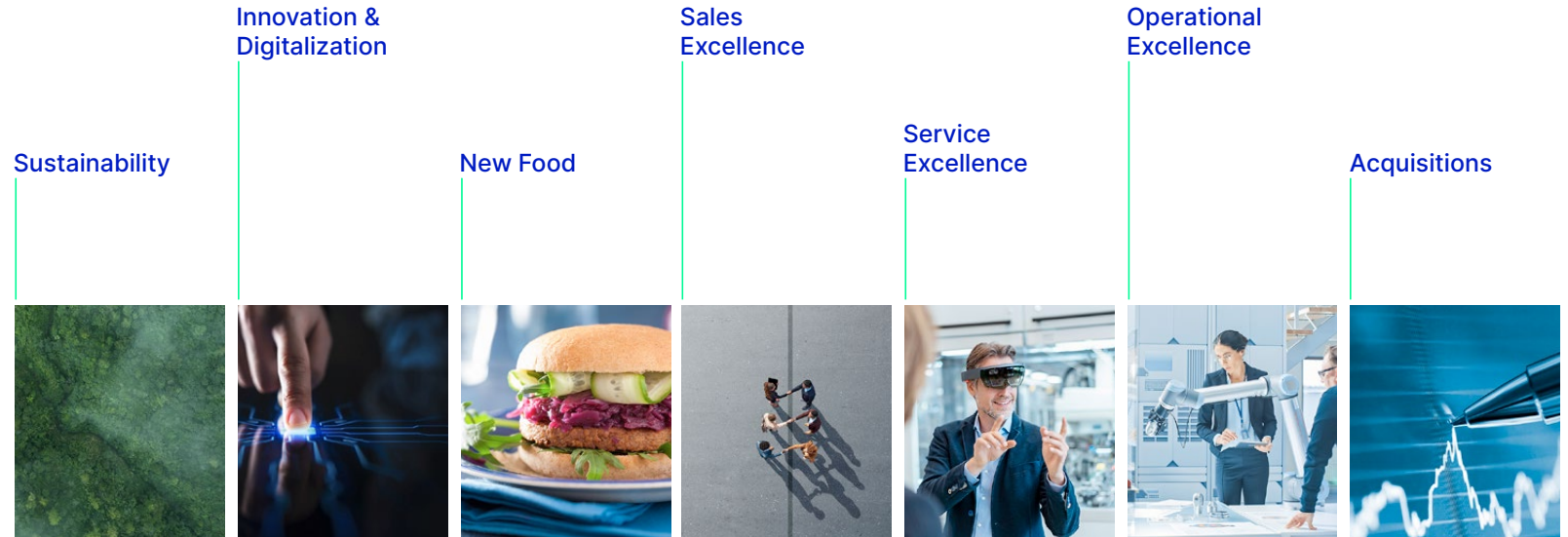


Sustainability is more than just a guideline for our day-to-day work. It has fundamental strategic importance. We have set very ambitious environmental and social targets geared to placing our company at the forefront of the industry by 2026. Consequently, sustainability is likewise a crucial part of our “Mission 26” group strategy, which defines it as one of the seven key levers for attaining our targets. Nevertheless, sustainability aspects are also firmly enshrined in the other six levers, underscoring the overarching significance of this issue for our company. The first of the “Mission 26” measures presented in 2021 were implemented in 2022, and the initial sub-targets have already been met.

## Mission 26 Seven key levers



GEA is committed to its own corporate responsibility. We are a member of many respected sustainability initiatives, have been evaluated by internationally recognized organizations – and we are taking action. Each of these factors is reflected in our sustainability strategy, which will be the benchmark by which we measure our performance in the coming years. As a multinational company, we are able and determined to contribute to a better world. This is mirrored in our corporate purpose “Engineering for a better world”, from which we derived our vision: “We safeguard future generations by providing sustainable solutions for the nutrition and pharmaceutical industries.”





Our sustainability strategy is aligned with objectives including the 17 Sustainable Development Goals (SDGs) contained in the United Nations Agenda 2030. These goals serve to ensure sustainability in global economic, environmental and social development. They are intended to be applied by governments worldwide, by civil society, the private sector and the scientific community. GEA is committed to the Ten Principles of the UN Global Compact and the seven Women's Empowerment Principles (WEPs) for gender equality. The Global Compact is a worldwide pact between businesses and the United Nations that aims to make globalization more socially and ecologically responsible. The WEPs are a joint initiative of UN Women and the UN Global Compact. Moreover, GEA is committed to the twelve sustainability principles of the "Blue Competence" sustainability initiative of the German Mechanical and Plant Engineering Association (VDMA), and has been a member of the econsense German business network since 2022.



### **Our ambitious targets**

We aim to reduce greenhouse gas emissions to net zero along the full length of the value chain by 2040. This is our most challenging target. The Science Based Targets initiative (SBTi) has validated our interim targets for 2030 of cutting Scope 1 and 2 greenhouse gas emissions by 60 percent each and Scope 3 greenhouse gas emissions by 18 percent compared with the base year 2019. SBTi has thereby confirmed that the interim targets are in line with the latest climate research findings and will make an effective contribution to achieving the 1.5°C target set by the Paris Climate Agreement (see also page 34, "Climate strategy").

GEA's corporate purpose is closely linked with our sustainability ambition to responsibly engineer sustainable solutions for a better world together with great people. This aspiration defines the main approaches of our sustainability strategy:

**Sustainable solutions:** We develop environmentally friendly, sustainable solutions for a better world and to support our customers' sustainability goals.

**Responsible operations:** We uphold the highest environmental and social standards at our own sites and in our purchasing activities.

**Great people:** Our employees consider GEA to be the employer of choice in the engineering industry. By increasing diversity, placing the focus on equality and inclusion as well as providing opportunities for lifelong learning and long-term career development prospects, we aim to become the most attractive employer in the engineering industry.

**For a better world:** We generate value for society based on solutions that help reduce food and water shortages and improve nutrition and health. GEA is actively leveraging its expertise and skills to empower local communities.

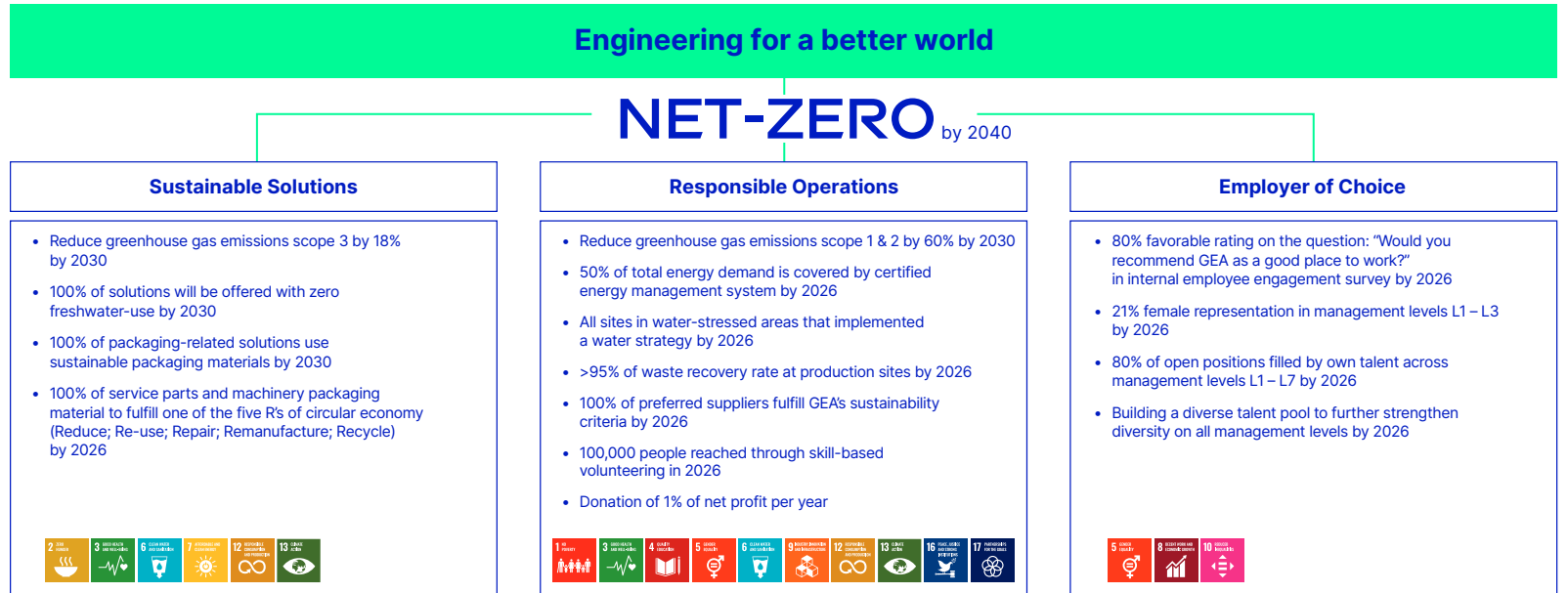


To substantiate our ambitions, we have defined a set of quantifiable targets in each area that will guide our actions in the coming years (see graphic).

You can find out more about how we intend to achieve these targets and the progress we made in 2022 in the following sections of this report.

### Sustainability management

Sustainable corporate governance has been one of our priorities for many years now. Our “Mission 26” group strategy sets out how we achieve this. All sustainability-related activities are consolidated in a single Sustainability department with a company-wide remit. This department acts as an interface with each of our business units and functions that shape the strategic backbone of all our sustainability-relevant activities. In this way, we ensure a professional approach to the increasingly complex requirements of sustainability management. The Sustainability department reports directly to our CEO. The department developed, communicated and supported all of the company’s sustainability targets and will measure their attainment.





In 2022, GEA set up a Sustainability Committee. The Executive Board tasked this cross-functional body with addressing sustainability matters relevant to GEA and actively involving the operating business units in implementing sustainability measures. This applies in particular to strategic and operational decisions regarding implementation of the measures at cross-divisional and cross-functional level. The Committee acts as a central body for all sustainability-related issues in every business area. Consequently, it forms a link between the global functions, the divisions and the Executive Board. This ensures a coordinated approach at all levels. We likewise have the capacity to accelerate implementation or – in the event of delays – apply measures at short notice, which are also coordinated across all levels.

The Sustainability Committee is chaired by our Chief Sustainability Officer (CSO), who reports directly to the Executive Board. The Committee includes permanent representatives from the Sustainability, QHSE, Finance, Indirect and Direct Procurement, Production, Investor Relations and IT departments as well as from each division. Where necessary, other specialist departments are also consulted. The Committee holds regular quarterly meetings, as well as convening to address specific matters, and essentially fulfills the following core tasks: reviewing and, if necessary, approving any changes to sustainability management (processes, structure, content), including amendments to the list of sustainability indicators. In addition, it is responsible for finalizing initiatives and specific instructions for the relevant global functions, departments and senior management to achieve the sustainability targets, which are then forwarded to the Executive Board and extended management circle for approval. At the same time, the Committee prioritizes the projected sustainability initiatives, sets the relevant budgets and continuously evaluates their progress.

### **Change management**

Firmly anchoring sustainability in a company calls for a major shift – within the organization as a whole, in every business area and at all levels. But implementing change within a business is a complex undertaking. Consequently, every major change begins with a change at an individual level. In most cases, the majority of changes have to be actively enacted and driven by employees if they are to achieve the desired outcome. That means the human factor is a crucial element of project planning if changes are to be successfully implemented within the organization. The best course for any company that decides to become more sustainable is to adopt a change management approach specifically for sustainability.

That is why GEA set up a central change management unit at the end of 2021. This unit applies a systematic approach to change that helps any employees affected by change to overcome their individual challenges. Our aim is to make change management expertise part of GEA's DNA and enhance the group's competitive edge by empowering our employees to continue to thrive in an ever-changing world. We use the ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) model as the framework for this. ADKAR is a goal-oriented change management method for managing individual and organizational change. If an individual possesses the five elements of awareness, desire, knowledge, ability and reinforcement, change will have been successfully accomplished.

## Sustainability principles

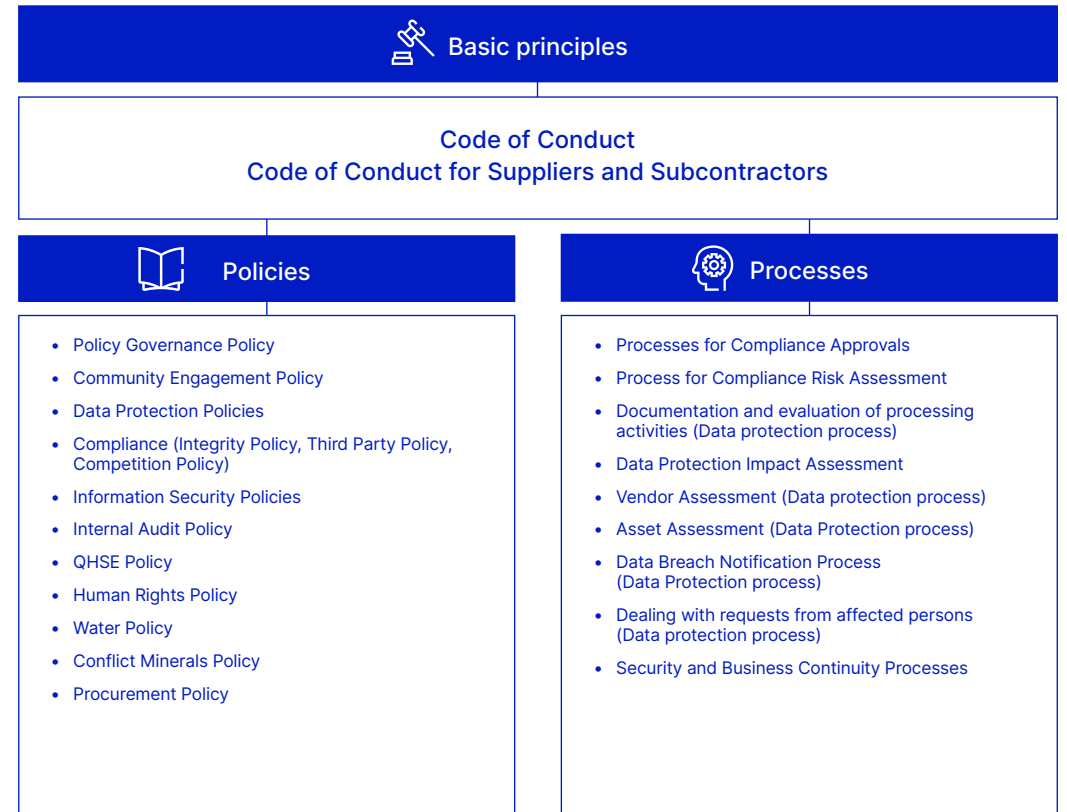
Sustainability management at GEA is based on the following principles, which are implemented by means of different policies and processes (see graphic):

### 1. Group Code of Conduct

The GEA Code of Conduct describes the values, principles and policies that guide corporate conduct at GEA (see graphic). The purpose of the Code of Conduct is to ensure company-wide compliance with standards and to create a working environment characterized by integrity, respect as well as fair and responsible conduct. It applies to all GEA employees and corporate entities worldwide. In the year under review, the previously separate Code of Corporate Responsibility was integrated into the Code of Conduct. The Code of Corporate Responsibility defines ethical and legal standards that are binding throughout the group. Consequently, for the first time, it is also mandatory for all employees to conduct themselves in a manner that aligns with sustainability principles. This covers matters such as human and workers' rights, diversity and inclusion as well as human development and education. As a globally successful technology group with more than 18,000 employees and operating companies in 62 countries, GEA is committed to fair world trade as a prerequisite for global economic growth.

### 2. Code of Conduct for Suppliers and Subcontractors

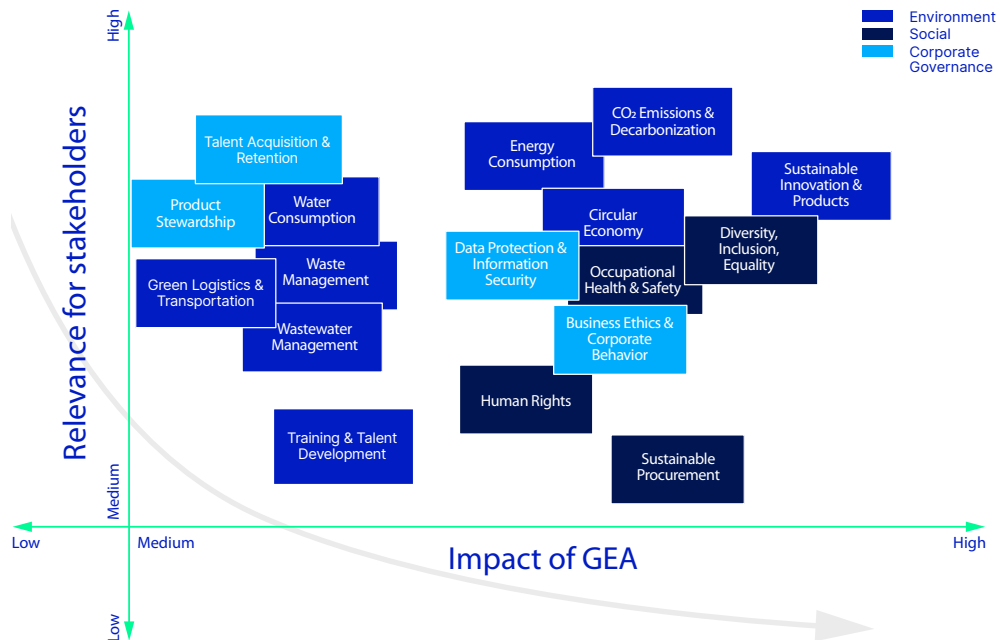
Like the GEA Code of Conduct, the Code of Conduct for Suppliers and Subcontractors requires GEA's suppliers to operate in an environmentally responsible manner, to respect human rights and to refrain from using conflict resources. This Code defines the GEA principles and requirements applicable to all suppliers of goods and services, to subcontractors and to group companies of suppliers and subcontractors with regard to their responsibility toward society, the environment and the people involved in the production of goods and/or the provision of services. The Code of Conduct for Suppliers and Subcontractors was likewise updated in the year under review. It now also includes reference to the UK Slavery Act 2015 and the German Act on Corporate Due Diligence in Supply Chains (Lieferkettensorgfaltspflichtengesetz), which entered into force on January 1, 2023, as well as more extensive requirements for environmental protection. Additionally, alongside the data protection requirements already provided, it now covers information security.





## Key sustainability issues

Each year, GEA identifies and assesses the issues that are material to understanding the economic, environmental and social impacts of its business activities (see graphic). Alongside our own internal assessment, this process incorporates the expectations and interests of our most important stakeholders: our investors, customers, employees as well as independent institutions such as non-governmental organizations (NGOs). To prepare the Sustainability Report in line with legal requirements (Germany's CSR Directive Implementation Act, CSR-RUG) and the Global Reporting Initiative (GRI) Standards, we conducted a comprehensive materiality analysis in 2021. We have classified 17 topics that are reflected in the sustainability strategy of "Mission 26" as relevant according to the GRI materiality principles. 13 of these topics have been defined as relevant within the meaning of the CSR RUG and therefore reviewed by auditors. The relevance of the issues and action areas was confirmed for the year under review:



## Management system

	Coverage rate 2022 (in %)	Number of certified Production sites 2022	Number of Production sites total
DIN EN ISO 9001:2015	66	38	58
DIN EN ISO 14001:2015	38	22	58
DIN EN ISO 45001:2018	33	19	58
DIN EN ISO 50001:2018	7	4	58

**ISO 9001** is the standard that specifies requirements for a quality management system. Organizations use the standard to demonstrate their ability to consistently provide products and services that meet customer and regulatory requirements. The standard also helps organizations to continually improve their quality management system.

**ISO 14001** is the international standard that specifies requirements for an effective environmental management system (EMS). It is part of the ISO 14000 family of standards on environmental management.

**ISO 45001** specifies requirements for an occupational health and safety (OH&S) management system, and gives guidance for its use. It was published by the International Organization for Standardization in March 2018.

**ISO 50001** specifies requirements for establishing an energy management system. The intended outcome is to allow an organization to continually improve its energy performance.

## Certification of management systems

Far from resting on its laurels, GEA strives to continuously improve. To help ensure this, our management systems undergo regular audits. After all, management systems not only govern value-creation processes – they also contain an inherent commitment to go on improving.

At GEA, quality management, energy management, environmental management as well as occupational health and safety are aligned with international standards supplemented by GEA-specific standards and regulations, such as the QHSE Guideline, GEA Safety Core Rules, GEA Environmental Core Rules as well as globally applicable process descriptions. Developed together with QHSE experts in the divisions and countries, these rules apply to all GEA companies and are implemented with the support of the global QHSE organizations. GEA holds a total of 182 certificates for its various ISO management systems. These cover all different types of GEA locations, including production, sales and administration sites.

We started certifying our sites with integrated management systems back in 2016. GEA Group Aktiengesellschaft, headquartered in Düsseldorf, Germany, leads the way with certification to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018. One aspect of the “Mission 26” group strategy is certification of the quality, environmental and occupational safety management systems at all GEA production sites. In the year under review, we achieved coverage of 66 percent for ISO 9001:2015, 38 percent for ISO 14001:2015 and 33 percent for ISO 45001:2018. By 2026, we aim to have half of our annual energy requirements covered by an energy management system certified to ISO 50001:2018; in 2022, around 22.5 percent of total energy requirements were already covered. Unrelated to certification, environmental protection measures and projects as well as the measurement of consumption data are performed in cooperation with the QHSE department.

### ESG ratings and rankings

Sustainable corporate governance has been one of our priorities for many years now and our product solutions meet high standards when it comes to environmental protection and the preservation of resources. Even though our customers already know this, we are happy to have our commitment confirmed by independent third parties. Our sustainability efforts are frequently recognized in international ratings and rankings. The term ESG encompasses criteria from the environmental, social and governance fields.

### DAX 50 ESG

Our exemplary approach to environmental, social and governance issues has earned GEA a place among the 50 companies listed in the DAX 50 ESG Index.

### CDP

In late 2022, GEA was once again honored by CDP (formerly Carbon Disclosure Project) for its performance and transparency in reporting, this year with an “A-” rating in the water security category and an

“A” rating for environmental protection. This puts GEA among the handful of almost 15,000 companies surveyed worldwide that made it onto the A List.

### EcoVadis

In the year under review, GEA confirmed the “Gold” rating in the EcoVadis sustainability assessment, placing it among the top five percent of all companies in the engineering sector assessed by EcoVadis worldwide. Every year since 2016, we have commissioned independent rating agency EcoVadis to audit our sustainability management with increasing detail and have seen a continuous improvement in the results. In the 2022 assessment, GEA achieved a “Gold” rating with 68 out of 100 points. EcoVadis analyzes companies’ sustainability performance in the areas of environment, labor and human rights, ethics and sustainable purchasing.

### MSCI

In January 2023 GEA was upgraded from “AA” to “AAA” in the MSCI ESG Rating by the US-american financial services provider MSCI.



1) In 2023, GEA Group received a rating of AAA (on a scale of AAA–CCC) in the MSCI ESG Ratings assessment. The use by GEA of any data of MSCI ESG Research LLC or its affiliates (“MSCI”) and the use of MSCI logos, trademarks, service marks or index names do not constitute a sponsorship, endorsement, recommendation or promotion of GEA by MSCI. MSCI services and data are the property of MSCI or its information providers, and are provided “as-is” and without warranty. MSCI names and logos are trademarks or service marks of MSCI.

### Dow Jones Sustainability Index

GEA was included in the Dow Jones Sustainability Europe Index (DJSI Europe) for the first time in December 2022. Companies are included in the index based on the annual evaluation of the S&P<sup>1</sup> Global Corporate Sustainability Assessment. In 2022, more than 10,000 companies were invited to participate in the assessment. GEA significantly improved its score from 56 in 2021 to 69 out of 100 in 2022. Strong results were achieved in the following categories: business ethics, materiality, information security/cybersecurity & system availability, environmental reporting and social reporting.

### Other awards

Following the index review in December 2022, GEA remained in the FTSE4Good Index Series. This is designed to measure the performance of companies that demonstrate strong environmental, social and governance (ESG) practices. In September 2022, GEA also earned "Prime Status" in the ISS ESG Corporate Rating, putting us at the top of the industry index group. ISS ESG is a service provider for institutional investors. GEA's Sustainalytics ESG risk rating improved from 22.4 to 18.3 and its risk of material

financial impacts as a result of ESG factors was classified as low. The ESG risk rating places GEA in the 3rd percentile (1st percentile = lowest risk) in the mechanical engineering industry, as rated by Sustainalytics. The lower the risk value, the better the rating. In addition, GEA was named as an ESG Industry Top Rated company by Sustainalytics. Sustainalytics, a Morningstar company, is a leading provider of environmental, social and governance analytics, ratings and data.

- 1) S&P stands for Standard and Poor's. S&P Dow Jones Indices LLC is a joint venture between S&P Global, CME Group and News Corp.
- 2) ESG Corporate Rating / ISS ([issgovernance.com](https://www.issgovernance.com))
- 3) Copyright ©2023 Sustainalytics. All rights reserved. This [publication/article/section] contains information prepared by Sustainalytics ([www.sustainalytics.com](https://www.sustainalytics.com)). Such information and data are the property of Sustainalytics and/or its third-party providers (data of third-party providers) and are provided for information purposes only. They do not constitute a recommendation of any product or project, nor do they constitute investment advice and are not warranted to be complete, timely, accurate or suitable for a particular purpose. Use is subject to the terms and conditions available at <https://www.sustainalytics.com/legal-disclaimer>.

Member of  
**Dow Jones  
Sustainability Indices**  
Powered by the S&P Global CSA



2



3



3

## Greenhouse gas emissions

By 2030, we will reduce our greenhouse gas emissions from our own activities (scopes 1 and 2) by 60 percent compared with 2019.

2022  
**-51%**

By 2030, we will reduce our greenhouse gas emissions in the entire product value chain (Scope 3) by 18 percent compared with 2019.

2022  
**40%**

## Water

Machine and plant operation with no additional need for fresh water consumption by 2030.

2022  
**Products identified, development processes underway in business units**

All sites in water-scarce regions will implement a water strategy by 2026.

2022  
**Water strategy development initiated with affected sites**

## Circular economy

100% of packaging solutions will use sustainable packaging materials by 2030.

2022  
**Process definition developed, piloting of first business unit completed, rollout launched in all business units**

100% of our spare parts and the packaging for our machinery will meet one of the circular economy's five Rs (reduce, reuse, repair, remanufacture, recycle) by 2026.

## Energy

50% of our total energy needs will be covered by a certified energy management system by 2026.

2022  
**22.5%**

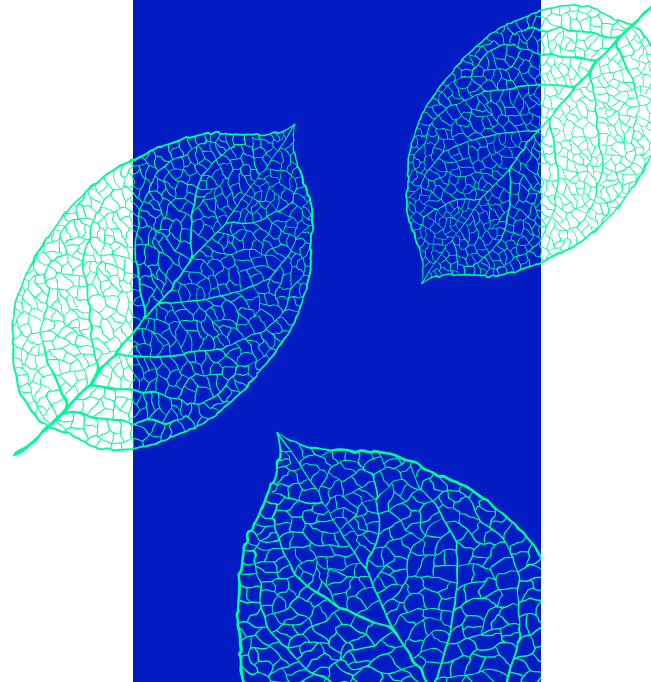
## Waste

The waste recovery rate will be at least 95% by 2026.

2022 – Target achieved  
**96%**

# NET-ZERO by 2040

At GEA, we take a 360-degree view of sustainability and have set targets for all aspects in our sustainability strategy.



## Talent

80% of vacancies at all management levels will be filled by our own junior staff by 2026.

2022  
**59%**

The newly introduced talent pools support the targeted development of our junior staff, making a significant contribution to internal recruitment.

2022  
**New talent programs launched**

## Social responsibility

We have set the target of conveying knowledge to a total of 100,000 people through voluntary work by 2026.

2022  
**Process defined, policy adopted, effective 1/1/2023**

GEA will donate one percent of its net profit each year.

2022  
**0.4%**

## Employee satisfaction

In the annual employee survey, we intend for at least 80% of employees to respond that they would recommend GEA as a good employer by 2026.

2022  
**78%**

## Diversity

Over the next five years, we will increase the proportion of women at the top three management levels to 21%.

2022  
**19%**

## Sustainable purchasing

By 2026, all of GEA's preferred suppliers will meet our sustainability criteria.

2022  
**Criteria defined and communicated, first wave of relevant suppliers rolled out**

# CLIMATE STRATEGY



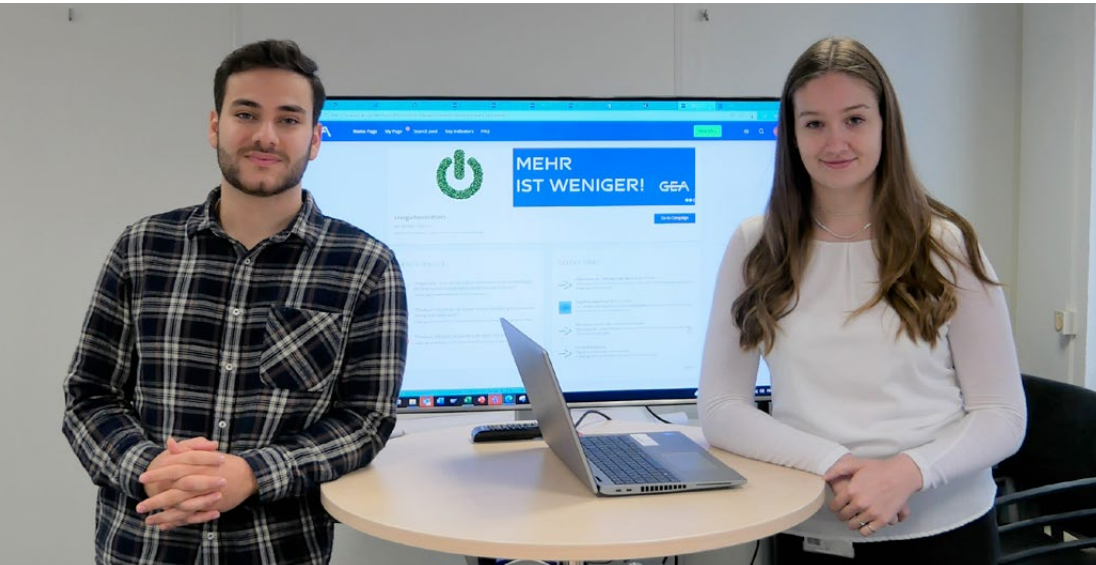
[Climate strategy](#)

# CALL FOR IDEAS

Saving energy was an important issue well before 2022 – to conserve raw materials, reduce costs and protect the climate. And there have also been energy-saving campaigns in the past. Back in the 1980s, bumper stickers declaring “I’m an energy-saver” were popular in Germany. At that time, the second oil price shock prompted the Federal Ministry for Economic Affairs to launch a campaign encouraging the population to save energy. We now find ourselves in the midst of another energy crisis. Once again, the price of crude oil and natural gas skyrocketed almost overnight, putting the livelihoods of individuals and businesses in jeopardy. Yet there is a big difference compared with earlier crises: The climate situation has never been as precarious as it is today. Consequently, it is now probably more important than ever to contribute to saving energy.

To counter rising energy prices, GEA has raised its cost-cutting and sustainability targets and resolved to reduce its monthly gas consumption by 20 percent. In order to achieve these targets, we launched our Global Energy Saving Campaign in September 2022. This campaign ensures that our employees can play their part – either by taking small steps from day to day or by coming up with good ideas to save energy globally.





The energy saving campaign was voluntarily supported by Moayad Esmail Basha and Laura Slominski, engineering students from our Oelde site.

### Everyone can contribute to saving energy

Although GEA's production is not heavily dependent on natural gas, we must improve our resource management and be more cost-conscious. "The current business environment is demanding and we need to cut costs to address these challenges," says Johannes Giloth, GEA's Chief Operating Officer. "Reducing our energy consumption will have an immediate impact and while we have already implemented global energy-saving measures, we also need each and every employee to contribute on a daily basis. That's why we launched our energy-saving campaign as a call to action for all employees."

The entire GEA workforce is encouraged to take any steps possible to reduce energy consumption in the workplace – from simply turning off lights when leaving a room to switching off equipment after work. However, to generate a greater impact, employees have also been asked to put forward their energy-saving ideas either locally or globally. Using the "Improve" platform specially set up for the campaign, anyone can submit their ideas or rate the ideas of others as well as add comments or suggestions. The ideas are regularly reviewed by a team of experts, who assess their feasibility and potential impact.

Since the Global Energy Saving Campaign was launched, 141 ideas have already been submitted by numerous coworkers from 28 different sites. But what exactly happens with their proposals? First, they are sorted according to subject matter or location. There are things everyone can do, like turning off computers and monitors when they are no longer in use, or making efficient use of air conditioning systems. Yet many ideas – such as the installation of solar panels – require more effort and expense to implement. Ideas should be submitted in English so that everyone can participate in the discussion. Checks are also made as to whether any site has already launched a local campaign for an idea submitted. The campaign will initially run for one year.

# We need to turn up the pressure to act.

The vague outcomes of the COP27 world climate summit in Egypt in November 2022 demonstrated once again that, of all of the world's challenges, climate change is the most urgent priority. The first major effects of climate change have been seen and felt for a long time. Rising atmospheric temperatures will have more far-reaching consequences than any other event. Under the Paris Climate Agreement, the global community in 2015 already adopted the non-negotiable goal of limiting global warming to well below 2 and preferably to 1.5 degrees Celsius (°C). The way things are currently progressing, the world is headed for a temperature rise of 2.7°C. For the ambitious climate target to remain attainable, the industrial sector must also contribute to decarbonization. First, we need a comprehensive energy efficiency offensive. And second, we need to switch to an all-embracing circular economy and carbon-neutral production processes.







### Innovative solutions to combat climate change

With its innovative products, GEA has been playing an active role in climate protection for many years now. For example – in cooperation with a Norwegian company – we have developed a system that processes manure from livestock farming into an environmentally friendly, nitrogen-rich fertilizer, which can increase crop yields by up to 40 percent. This is a positive step in the fight against global hunger. But perhaps even more significantly, the system can reduce greenhouse gas emissions from livestock farming by up to 30 percent as well as methane emissions from manure storage and distribution by as much as 99 percent.

We use life cycle analyses to demonstrate how much we are improving the energy efficiency of our machinery and plants from generation to generation, thus preserving resources and reducing greenhouse gas emissions. Additionally, in certain cases, we already operate a take-back scheme for our products, which we recondition so they can be used for many more years. From 2026, we will extend the offer of reuse to selected service parts.

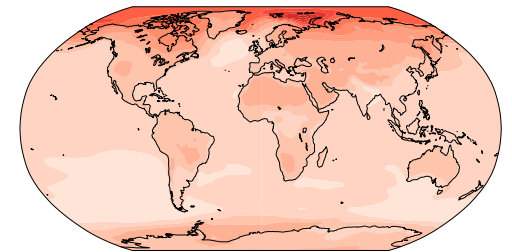
Our climate strategy means that climate protection measures are managed centrally and selectively. This kind of framework is the only way to measure and compare objectives. The climate strategy defines the operational structure and provides guidance for the onward development of our company's business activities.

### Finalist for the German Sustainability Award

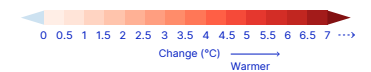
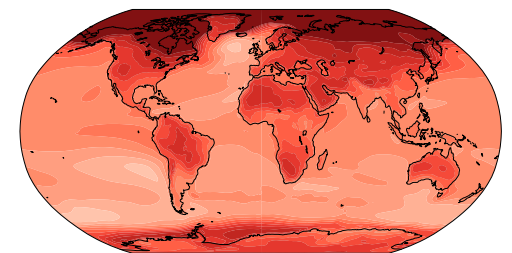
Our climate strategy has already made an impression: GEA was a finalist for the German Sustainability Award 2022 in the "Companies" category in the "Climate" field of transformation. Our ambitious climate protection and sustainable development targets impressed the jury and qualified us for the final. The winners and finalists were announced and received their awards in Düsseldorf on December 2, 2022. Since 2008, the German Sustainability Award has honored companies that promote sustainability as part of their business model and make a meaningful contribution to sustainable transformation through innovative products and services, high environmental standards in production or special social commitment in their supply chains. The award is presented each year by the German Sustainability Award Foundation in cooperation with the German federal government, municipal umbrella organizations, business associations, civil society organizations and research institutions.

### Annual mean temperature change relative to 1850 – 1900

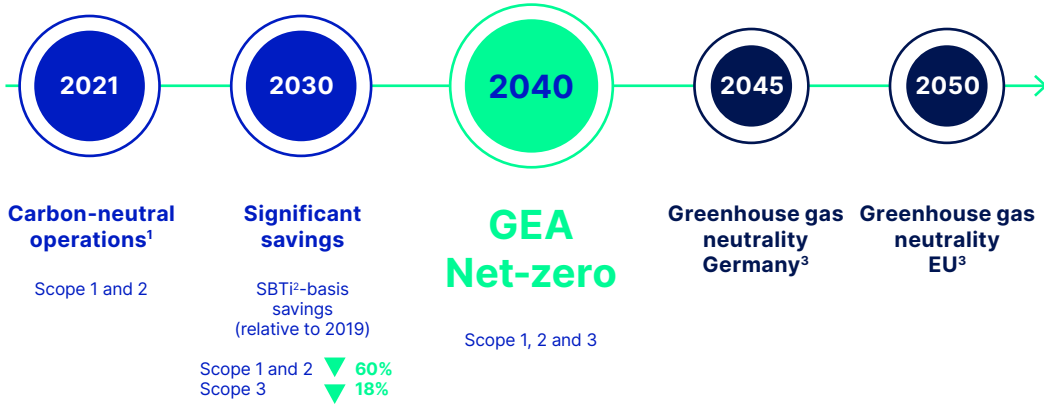
Simulated change at 1.5 °C global warming



Simulated change at 4 °C global warming



Source: IPCC report "Climate Change 2021, The Physical Science Basis", Page 22



**Alignment with the TCFD recommendations**

We disclose our assessment of the risks and opportunities arising from climate change in the Sustainability Report. This makes our climate protection measures fully transparent. We follow the recommendations of the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD). The detailed TCFD report can be found starting on page 152.

**Ambitious climate targets backed by science**

By 2040, GEA will reduce greenhouse gas emissions to net zero at every link in the value chain (net-zero target). We measure ourselves against this benchmark each year. Yet we are not leaving attainment of this target to chance. Our interim targets for 2030 of cutting Scope 1 and 2 greenhouse gas emissions by 60 percent each and Scope 3 greenhouse gas emissions by 18 percent compared with the base year 2019 have been scientifically validated. These science-based targets are scientifically calibrated to limit global warming ideally to 1.5°C compared with the pre-industrial age. GEA’s reduction targets were reviewed by the Science Based Targets initiative (SBTi), an independent, globally recognized organization for auditing climate targets, whose standards we

apply in reporting our KPIs. This showed that we are on the right track. The SBTi confirmed that our pledges are in line with the latest climate research findings and will make an effective contribution to achieving the 1.5°C target.

Even more important than the reduction in Scope 1 and 2 emissions is decreasing Scope 3 emissions. These are the indirect emissions from upstream and downstream activities such as the purchase of goods and services, their transportation as well as business travel. Above all, however, they originate in the phase in which our customers use the products. Firstly, our increasingly resource- and energy-efficient products and processes enable our customers to achieve their sustainability targets; secondly, they contribute toward improving our own greenhouse gas balance. In 2022, indirect emissions from downstream activities accounted for more than 96 percent of GEA’s total greenhouse gas emissions.



**2040**

GEA is a net-zero company!

**WE’VE HAD OUR SCIENCE-BASED TARGET APPROVED**



1) Offset through © certified climate protection projects  
 2) Science Based Targets initiative (SBTi): globally recognized independent institution for verification of climate targets. GEA’s interim targets were validated by the SBTi.  
 3) According to the German Climate Change Act 2021/European Green Deal 2019

### Actively shaping environmental policy

GEA is among the first European machinery manufacturers to set science-based targets. We have one of the most comprehensive and ambitious climate strategies in the mechanical and plant engineering sector. It involves the entire value chain, enabling us to reduce both direct and indirect emissions. To drive forward the progress toward our climate protection targets, GEA participates in initiatives such as the World Economic Forum (WEF) Alliance of CEO Climate Leaders, a global community of CEOs from major corporations across different industries. Its goal is to facilitate the transition to a net-zero economy by the middle of the century at the latest by encouraging action across all sectors and engaging with policymakers. The Alliance was founded to support the Paris Climate Agreement and climate protection measures by companies. These companies set themselves ambitious targets, reduce their own emissions and encourage others to do the same.

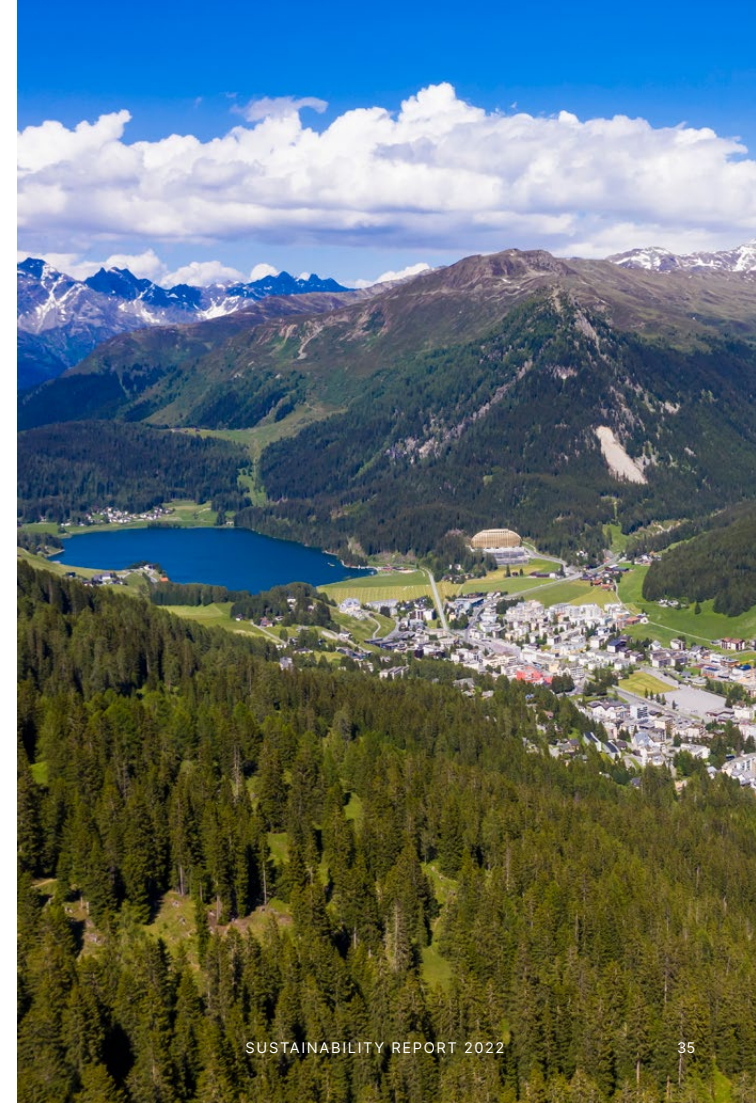
At the WEF Annual Meeting in May 2022, the agenda included the subject of sustainability alongside the war in Ukraine, geopolitical tensions and global economic risks. Despite multiple concurrent challenges, climate change persists and must not be allowed to fade into the background. Quite the opposite: If we really still want to achieve the Paris climate goals, we need to step up the pace. “Even more countries, companies and institutions need to set ambitious targets, take more decisive action and cooperate more closely in the process,” says GEA CEO Stefan Klebert, who led a workshop in Davos. “How far we still have to go is notably reflected in the Scope 3 indirect greenhouse gas emissions. For many companies, the biggest challenge right now is bringing these –

typically very substantial – emissions under control. The best way for us to make significant progress is by convincing many more companies at every link in the value chain to implement effective measures.”

But how do we build momentum in this process? “I think it's time for the companies leading the way on climate protection in different industries around the world to more closely coordinate their efforts in this area,” says Stefan Klebert. “The more major companies not only set themselves ambitious targets but also collectively demand greater commitment and transparency from their main suppliers, the more the pressure to act will build along the entire value chain. Strong incentives will emerge, also for companies that have so far been hesitant to act.”

A global platform such as the World Economic Forum could play a central role. Many pioneers in the field of climate protection are already actively contributing. Working together, we can effect real change and make major strides toward a more sustainable world.

GEA has also been a member of the Alliance for Clean Air since 2022. The Alliance for Clean Air, which was set up by the WEF and the Clean Air Fund, brings together business leaders committed to measuring and reducing value chain air pollutant emissions, investing in innovation and working with policymakers and other peers to champion the social, economic and climate benefits of tackling air pollution.

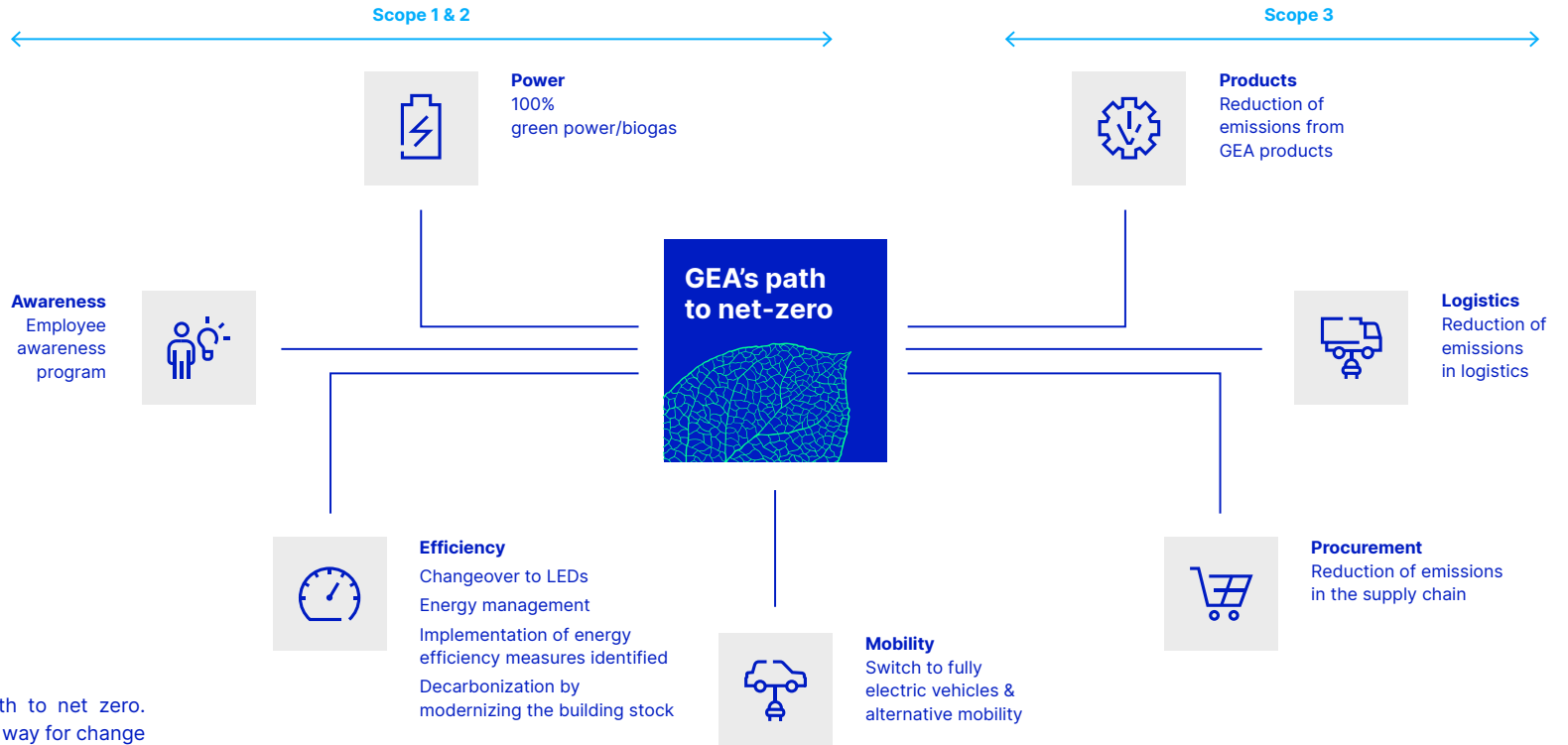




# 60%

By 2030, we aim to cut our Scope 1 and 2 emissions by 60 percent.

## Focus on seven action areas



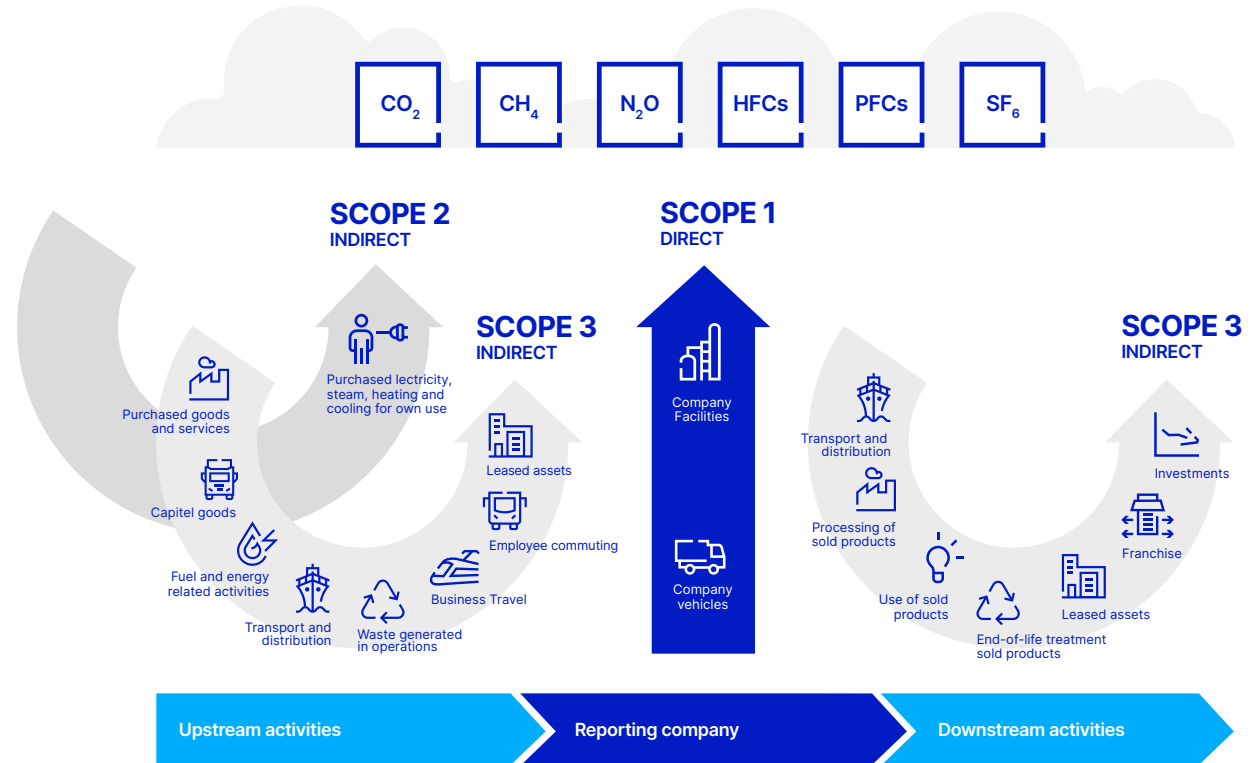
### Focus on seven key action areas

GEA has identified seven key action areas on its path to net zero. Employee awareness and sustainable products pave the way for change and our products in particular give us significant leverage for reducing greenhouse gas emissions. Other action areas concern the procurement of electricity from renewable sources (Scope 2 emissions) as well as more energy-efficient buildings and mobility (Scope 1 emissions). Lastly, they include purchasing and logistics in the area of indirect Scope 3 emissions resulting from our suppliers' operations.

**The following activities are planned:**

- Employee awareness: We are raising our employees' awareness of sustainable conduct. For example, in 2022 we launched an energy-saving campaign calling on all GEA employees to share their ideas and suggestions for saving energy at a global or local level with their coworkers and to evaluate and comment on the ideas of others.
- Sustainable products: We aim to make a positive contribution to our customers' sustainability by offering a net-zero product portfolio by 2040. For instance, the GEA AddCool high-temperature heat pump technology can reduce primary energy consumption and CO<sub>2</sub> emissions by up to 50 percent.
- Energy and mobility: We are planning to procure green electricity and gradually switch to fully electric company and service vehicles. In 2022, all of our electricity needs worldwide were already supplied from renewable sources and our own power generation capacity was expanded using photovoltaics.
- Energy efficiency: In the long term, we intend to modernize our buildings and make them greenhouse gas-neutral by 2040. In the short term, we aim to reduce energy consumption at all our energy-intensive sites. GEA's carbon-neutral<sup>1</sup> Factory of the Future in Koszalin, Poland, was commissioned in 2022. This factory generates its own electricity using a photovoltaic unit, uses a combined heat and power system for power, heating and cooling, has LED lighting, energy-efficient building insulation and low-emission glazing.
- Purchasing and logistics: By 2040, all the goods and services we purchase will be carbon-free. Emissions in purchasing are to be cut by 18 percent by as early as 2030. To achieve this, a project will be implemented in 2023 to define specific reduction targets and actions for their attainment for each product group. In parallel, new software is currently being rolled out to track and manage progress in the area of decarbonization.

You can read about how we aim to reach these goals in the following chapters of this Sustainability Report.



Source: The Global Compact Network Germany

<sup>1</sup>) Offset through certified guarantees of origin for gas and electricity as well as certified climate protection projects

### Reducing climate footprint through product innovation

Our impact on climate protection extends well beyond our company's own climate footprint. The majority of our technologies make significant contributions to helping our customers reach their climate targets by replacing systems that are responsible for substantially higher greenhouse gas emissions. We apply the concept of avoided emissions to measure this contribution, in line with established standards such as the Avoided Emissions Framework. Avoided emissions result from the effect of a product on greenhouse gas emissions compared with the baseline situation without that product.

Through the use of heat pumps and compressors in place of gas boilers or oil-fired heating systems, which run on fossil fuels, as well as with efficient heat recovery systems in our project business, GEA was in 2022 able to avoid emissions from its customers amounting to around 686,000 tons of CO<sub>2</sub> equivalents over the entire product life cycle. Heat pumps are significantly more energy-efficient because they make use of waste heat rather than allowing it to dissipate. In addition, they are powered exclusively by electricity, which will increasingly be generated using emission-free, renewable energy sources going forward.

We proactively inform our customers about the energy and emission savings that can be made through our innovative machinery, plants and technologies. At the same time, we will successively extend the avoided emissions concept to other products in our portfolio. In this way, climate change also presents vast opportunities for GEA and many others. New energy- and resource-efficient technologies and processes will enable companies to safeguard their success and competitive edge over the long term.

### Gold Standard certified offsetting

Since 2021, GEA has invested in Gold Standard climate protection projects to offset its greenhouse gas emissions. Thanks to this, GEA is already a net carbon-neutral company today (Scope 1 and 2). According to the German Federal Environment Agency, the only projects eligible for Gold Standard certification are those that demonstrably lead to a reduction in greenhouse gases and, at the same time, are good for the local environment and meet the population's social needs. These include global projects to generate sustainable energy from wind, sun, biomass and waste gases. They fulfill the criteria and conditions set out in the 2005 Kyoto Protocol on Climate Change.



# SUSTAINABLE SOLUTIONS



Sustainable solutions

# CONTRIBUTING TO MORE SUSTAINABLE AND ETHICAL NUTRITION

A secure food supply has long been taken for granted in many countries. But population growth, climate change and war are leading to a scarcity of resources globally. The corresponding figures are alarming. So the question of how we will secure our future food supply is being raised ever more frequently.





The growing middle class of a world population expected to reach the ten billion mark by 2050 is rapidly accelerating demand for food worldwide, especially meat and other protein-rich products. According to the Food and Agriculture Organization (FAO), production needs to increase by at least 70 percent to meet future food needs. Yet science tells us that we cannot expand existing agricultural production capacity without grave environmental and social consequences.

At the same time, consumers' eating habits are changing. Many people want a healthier, more environmentally friendly diet that affords greater consideration to animal welfare. However, it is unlikely that demand can be met exclusively through eco-farming.



*"We need to not only find new ways of feeding people but also to make that food readily available and affordable. Since GEA is a technology expert, this is where our strength lies – in providing our customers with an exceptionally high level of investment security when they enter into the New Food arena."*

Heinz-Jürgen Kroner,  
Senior Vice President Business Units Liquid Technologies  
and New Food

#### **Alternative proteins instead of more meat**

In its "Mission 26" group strategy, GEA makes a clear commitment to protecting future generations through sustainable food industry solutions. New Food, one of the seven key levers for attaining our corporate targets, will be a crucial element in making our vision a reality. The term "New Food" covers foods based on alternative proteins such as plant-based protein, cell-based protein and insect protein. Nevertheless, the precise definition of New Food is continuously evolving today.

GEA expects the global consumption of New Food products to triple by 2030. While this offers huge business potential, it is also an opportunity for us to contribute to more sustainable and ethical nutrition. We have set ourselves ambitious targets to enable us to tap into this New Food trend in a strategic and meaningful way.

And we already have a competitive edge thanks to technological expertise and wide-ranging know-how. As a full-range supplier, all of the relevant technologies required by customers in this industry are already at our disposal. Our portfolio currently places us among the market leaders in the New Food industry. This makes us perfectly equipped to meet the burgeoning demand from customers in this surging market.

### New Food is colorful, diverse and dynamic

New Food embraces the fundamental principle and goal of feeding more people using fewer resources. As a category, the primary focus is protein-rich foods and components as well as other nutritious compounds, produced through traditional processing methods, precision fermentation or tissue engineering, or a combination of these methods:



Plant-based foods, beverages and food components



Fungi-based foods and ingredients



Precision fermentation: proteins (e.g., enzymes), sweeteners, fats, microbes (e.g., yeast, bacteria and microalgae), algae-based foods and ingredients



Cell cultures: cultivated meat, cultivated seafood, cell-based milk



Novel foods: insect-based foods and ingredients, crustacean-based ingredients (e.g., krill)



# USD 1.36 billion

invested in cultivated meat in 2021 – more than twice as much as before

Focused primarily on the production of alternative protein foods and protein-rich components, the New Food boom is a response to consumer demand for more nutritious, sustainable and ethical foods.

Together with Danish biotech company Novozymes, GEA is constructing a new plant for the production of plant-based proteins in the USA. The plant, which will go into operation in 2023, is one of the largest projects in our company's history. Novozymes develops fermented catalytic (i.e. industrially produced) enzymes that form the basis for many industrial applications. The new plant covers the manufacturing steps from harvesting to separation of the proteins.





### GEA as an enabler of the New Food industry

As a technology partner to the industry, GEA aims to lead the way in the New Food market. At the Anuga FoodTec 2022 trade show, GEA showcased its new pilot line for cell cultivation and fermentation – a catalyst for cellular agriculture’s development from the laboratory to commercial production. “Our Anuga showcase bannered ‘A Taste of Tomorrow’ shines a light on GEA’s model New Food initiative, through which GEA promotes innovations in the emerging cellular agriculture sector,” says Heinz-Jürgen Kröner, Senior Vice President Liquid & Filling Technologies at GEA.

For the first time, GEA presented a mobile test center (MTC) for New Food applications – a fully equipped, pilot-scale process line for cultivating different cell types and fermentation that can be individually configured. With the MTC, GEA has devised a new way

of providing proof of concept for cellular agriculture. This makes it possible, for example, to develop fermentation processes that produce key nutritional components such as proteins and other functional ingredients on a large scale, or to use bacteria and other cells to biologically produce hormones and enzymes.

There is no need for customers to invest in a full pilot plant in order to facilitate the process of scaling up from the lab to commercial manufacturing – they can simply use the MTC. This makes it possible to study the growth and behavior of cell cultures and microorganisms as well as fermentation processes, modify formulas, alter growth media and ingredients, plus tweak process parameters so as to increase yield and repeatability.



**A further milestone was reached in the year under review: GEA’s New Food report, which included detailed information on New Food, the findings of a survey conducted among chefs as well as interviews with experts. This marks the first comprehensive publication to show what New Food involves and the opportunities it offers.**

## Sustainable solutions

# Achieving greater sustainability for our customers.

GEA is one of the world's largest systems suppliers for the food and pharmaceutical sectors. Our portfolio includes machinery and plants as well as process technology, components and end-to-end services. We offer a host of solutions that enhance the sustainability and efficiency of our customers' production processes worldwide. This is in keeping with our corporate purpose of "Engineering for a better world".

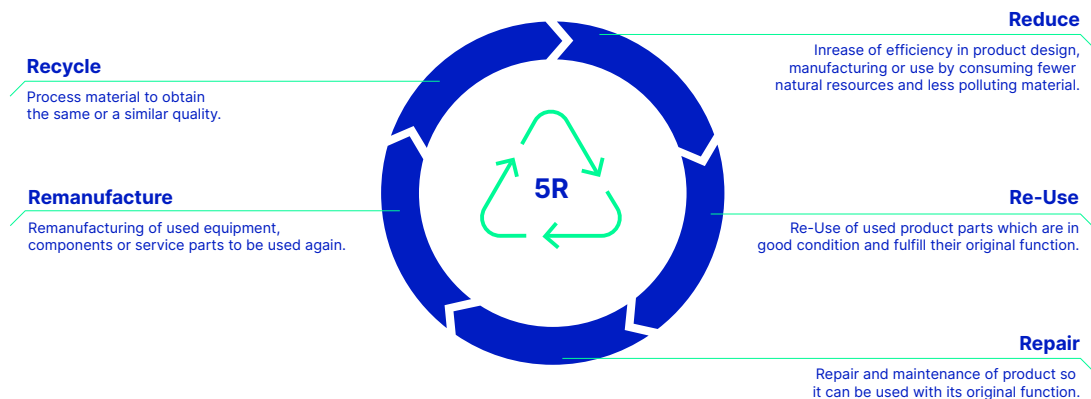
For our customers, the sustainability performance of both our products and the company itself – alongside quality and product safety – is hugely important in the supplier selection process. Nowadays, customers expect our plants, machinery and components to help them enhance their own sustainability performance – allowing them, for instance, to achieve carbon neutrality or reduce their environmental footprint. That means our customers will be able to curb their environmental impact because they use fewer raw materials and less energy or water, or produce less waste. And yet it goes without saying that customers also expect our machinery to facilitate economical production throughout its life cycle.



**In light of this, we set the following sustainability targets for product development in our “Mission 26” group strategy and already achieved initial results in the year under review:**

- By 2030, Scope 3 greenhouse gas emissions are to be reduced by 18 percent compared with the base year 2019. The GEA AddCool high-temperature heat pump technology contributes toward this target, reducing both primary energy consumption and the CO<sub>2</sub> footprint of a spray dryer by up to 50 percent.
- By 2030, GEA will offer its customers the option of operating plant and machinery with zero fresh water consumption. Today, the GEA AromaPlus Pro already reduces the water consumption for diafiltration during dealcoholization by up to 100 percent.
- By 2030, suitable GEA products will process sustainable packaging materials. Our “Pasta Eco-Pack” machinery range is already capable of processing packaging materials made from 100 percent recycled FSC-certified paper. At the same time, this meets the stringent food packaging safety requirements.
- By 2026, spare parts and packaging materials for GEA products must meet one of the five Rs of the circular economy (reduce, reuse, repair, remanufacture, recycle).

## Circular economy approach runs five R's



Reduce, reuse, repair, remanufacture and recycle together form GEA's chosen "R" strategy for implementing a circular economy. This strategy is a model for production and consumption in which existing materials and products are separated, reused, repaired, remanufactured or recycled for as long as possible. In this way, product life cycles can be extended and resources conserved. In the year under review, the Business Unit Separation developed a process to introduce circular economy principles in all of the group's divisions. By 2026, all other business units will introduce the circular economy principles for spare parts and packaging materials. GEA has thus taken a leading role in the mechanical and plant engineering sector.

In addition to adopting the "R" strategy for spare parts and packaging materials, GEA is focusing on circular economy as a future model – from product design to customer service throughout the product application cycle to refurbishment and, where possible, reuse.

As a machinery and plant manufacturer, GEA understands the need to decouple economic growth from the associated consumption of resources. The circular economy and its applications such as the use of remanufactured parts, modular design, performance-based machinery and plant operation as well as component remanufacturing can make a major contribution to extending machinery life cycles and thus considerably reduce their environmental footprint.

To this end, GEA will develop machinery and plant concepts that extend life cycles and facilitate continuous innovation with regard to the most relevant machine components. At the same time, we offer digital services that maximize a machine's productivity while minimizing its environmental footprint. This 360-degree approach is digitally supported throughout all phases of a machine's life cycle. A product life cycle management approach using the "Digital Twin" and "Digital Product Passport" tools will accelerate GEA's speed of innovation and help our customers ensure that their plants and machinery meet the latest technology and sustainability standards in a cost-efficient way.

### Product management

At GEA, the strategic management of sustainable solutions is the responsibility of the Sustainability department, which develops and communicates qualitative and quantitative goals, providing support for their implementation and assessing their attainment. The Sustainability department is the central unit that initiated our sustainability targets and ensures that they are met. Operational implementation – namely the development of sustainable solutions – is the responsibility of the divisions.

An overarching product development process focuses on selected criteria when implementing sustainability projects. Development activities focus on energy and water consumption, material usage and the circular economy. Where required, we use a trend scouting process based on “search – evaluate – observe” to zoom in on these sustainability subcategories. This trend scouting process results in a trend radar for sustainable technologies and market or customer trends that the divisions and businesses can use to specifically develop sustainable solutions. Success in reducing the raw materials consumption, emissions and water consumption of GEA products also involves the company’s supply chain partners, which is why GEA maintains a permanent dialog with its suppliers.





### Product development

Alongside product functionality and cost effectiveness, sustainability aspects are the main considerations in product and process development because decisions taken in the development phase have a long-term impact outside the company and hence must be scrutinized critically to ensure that sustainability criteria are met. In 2022, we created a methodological basis that takes circular economy into account from the very start of product development. The aforementioned sustainability criteria are already considered during the requirements and design phase of the development process. For example, GEA consistently strives to integrate mono-materials into product development to enable subsequent recycling.

The introduction of the new “Add Better” green label represents a further step toward aligning innovation with sustainability criteria right from the development phase. The “Add Better” mark will help customers clearly and unambiguously identify the benefits of sustainable product solutions. In this context, GEA developed a process in 2022 that measures the efficiency improvements achieved in relation to environmental criteria such as energy and water consumption, material and resource use, or greenhouse gas emissions, under the strict application of ISO standards. From 2023, the green label will be applied across the entire product portfolio, labelling the most resource-efficient product solutions with the “Add Better” mark.

The intended sustainability effects are measured by key performance indicator systems that record the sustainability parameters during product development and facilitate strategic monitoring. In addition to resource efficiency, machine safety to ensure user health and safety throughout the entire life cycle is also a fixed development criterion. This means that all product safety requirements form an integral and mandatory part of every single GEA product development process.

### GEA's product development has four focus areas that reflect market and customer requirements:

Environmental Sustainability	New Food	Digital Solutions	Modularization & Configuration
			



### **Product responsibility**

The divisions and business units have product responsibility. They manage the development and growth of their product portfolios on the basis of the “Mission 26” group strategy. The potential risk posed by each plant, machine or component must be taken into account separately in the installation, testing and operation phases. Avoiding the risk of mechanical, biological, chemical, electrical and acoustic hazards is the central function of a standardized machine and plant safety risk analysis in accordance with ISO 12100. For example, GEA products are designed in such a way that potential noise emissions are already taken into account in the development phase. Corresponding noise measurements are carried out under operating conditions in accordance with ISO 3746. Risk assessment is conducted as part of the development and technical documentation processes using failure mode and effects analysis (FMEA). This method makes it possible to uncover potential weaknesses and errors in a machine or process, assess the associated risk and provide guidance on avoiding errors and minimizing damage.

Product safety committees (PSCs) in the divisions assess and evaluate incidents involving GEA products that could lead or have led to either a risk to human life, harm to human health or property damage on customers’ premises. GEA has twelve different PSCs. Three of the divisions operate PSCs that cover all business units, while two divisions have established a separate PSC for each business unit. Committee leadership is determined by the division or business unit management. The interdisciplinary PSCs, which meet once a quarter, fall under the technical direction of the QHSE department and regularly exchange information with each other. The committees are tasked with taking appropriate action to prevent and remedy product safety defects as well as minimize

legal and financial risks for GEA. The PSCs collect and evaluate information about the use of a product during its life cycle. We also provide information in the operating manuals on how to dispose of critical components at the end of the product’s life cycle.

GEA confirms statutory product conformity by means of labels, including the CE label, FDA approval or China Compulsory Certification (CCC). In addition, the user manuals provide information on recycling and disposal of GEA products. In specific cases, further information is provided via GEA’s websites and social media channels. Internally, such information is shared via the intranet and the Yammer social media service.

In addition to those responsible for product safety, all other development, production and service employees receive in-depth product safety training once a year. Project-specific product training courses, which also include safety-related aspects, are held both for our employees and our customers. GEA also offers to regularly check the condition of machinery and equipment for customers to ensure disruption- and accident-free operation.

All components, machinery and equipment from GEA’s production undergo specific product safety tests that follow defined procedures in accordance with ISO standards. Test protocols are created for aspects relevant to safety. Our service personnel monitor product safety during operation of the machinery and plants. Any incidents are systematically recorded and reported.

### Life cycle analyses

In the context of our “Mission 26” group strategy and our sustainable solutions targets, life cycle analyses deliver planning assumptions necessary for reducing greenhouse gas emissions. This is why standardized CO<sub>2</sub> life cycle analyses in accordance with ISO 14040 are prepared for selected products to provide a reliable basis for planning and setting CO<sub>2</sub> target values. If required, a life cycle analysis of the technology is also performed as part of the portfolio analysis. With a view to initiating appropriate, strategic technology development measures, the current life cycle phase of a technology is first determined.

### Digitalization

GEA's digital service innovation focuses on availability and productivity. The installed base of our digital services is networked with the GEA Cloud. With high-quality service level agreements such as “Predictive Care”, unplanned machinery and plant downtime can be predicted and avoided through preventive service measures. Notably in combination with remote maintenance, this reduces the environmental footprint of service activities for our customers and GEA alike. Furthermore, productivity-based digital services such as “Opti-partner” reduce the energy used in production, cut resource consumption and avoid waste.

### Customer satisfaction

GEA regularly conducts customer satisfaction surveys worldwide. As a rule, these surveys are carried out immediately after various customer contacts such as a business transaction or the delivery of spare parts. A standardized reporting dashboard used throughout the company makes it possible to measure and analyze customer satisfaction both globally and regionally for the group as a whole and for the individual divisions. This allows prompt responses to customer feedback and pinpointing room for improvement. Customer satisfaction in the new machine business increased in the reporting period – the corresponding Customer Satisfaction Score (CSS)\* for the area was 80 percent (2021: 78 percent). The CSS for global customer satisfaction in service in 2022 was 79 percent (2021: 79 percent).

\*) The Customer Satisfaction Score indicates a customer's level of satisfaction with a product or service.





### The EU Taxonomy Regulation explained

What are sustainable products and services? The European Green Deal aims to achieve absolute carbon neutrality in the European Union by 2050. The European Commission has developed the Action Plan on Sustainable Finance to establish the economic basis and funding for this goal. The EU Taxonomy Regulation is one of the measures defined in this action plan that aims to promote investment in sustainable economic activities. It defines an activity as environmentally sustainable only if it makes a substantial contribution to at least one of the environmental objectives established in the EU Taxonomy Regulation:

- Climate change mitigation
- Climate change adaptation
- Sustainable use and protection of water and marine resources
- Transition to a circular economy
- Pollution prevention and control
- Protection and restoration of biodiversity and ecosystems

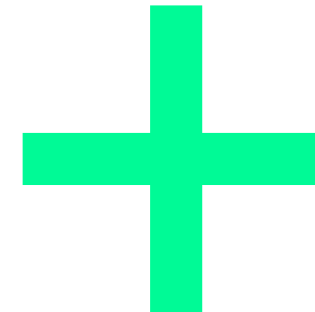
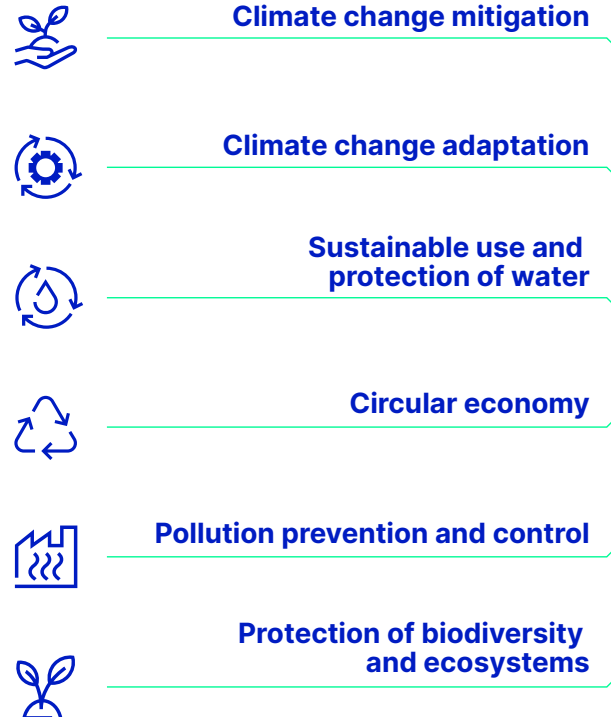
At the same time, economic activities may not significantly harm any of the other environmental objectives (Do No Significant Harm) and must comply with the minimum requirements in the areas of labor standards and human rights.

### The EU Taxonomy Regulation has only limited applicability to GEA

It is a fact that the EU Taxonomy Regulation in its current form only applies to some of GEA's economic activities. The development of technologies and manufacture of plants and machinery for food and pharmaceuticals production is not listed among the EU Taxonomy Regulation's economic activities.

Yet GEA generates over 75 percent of its revenue from its products for the beverage, food and pharmaceutical industries. This means that the main purpose of our machinery and solutions is the production of food and pharmaceuticals, not generating renewable energy or manufacturing materials for the energy transition. Nevertheless, our technologies

and machinery ensure that customers in the food and pharmaceuticals industries in particular achieve their climate targets and comply with increasingly stringent regulations on greenhouse gas emissions, water consumption and waste disposal. This is exactly what we mean by "Engineering for a better world".



Contribution to environmental goal



Protection of human rights

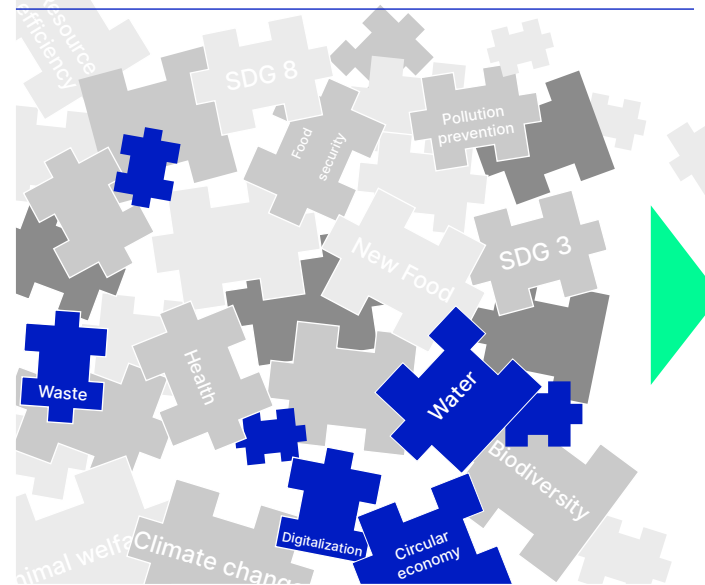
**DNSH**  
criteria

Do No Significant Harm

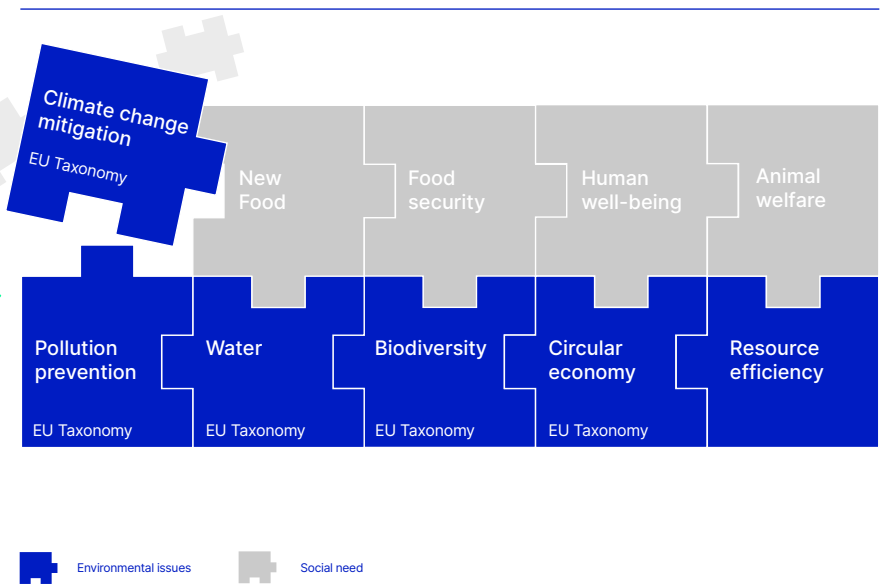
## Our sustainable solutions are aligned with the UN Sustainable Development Goals



### Current sustainability landscape



### Our definition of sustainable solutions



### Sustainable solutions

Although the approach of the EU Taxonomy Regulation is good, it currently takes little account of the economic activities of Germany's plant and mechanical engineering sector, which includes GEA. However, since we have also set our own clear sustainability targets as part of our "Mission 26" strategy and aim to make our products and services more sustainable, we have developed our own definition of sustainable product solutions. In this, we were guided by the 17 United Nations Sustainable Development Goals (SDGs). These are political objectives that are intended to ensure sustainable economic, social and ecological development worldwide. We have identified ten categories in which our solutions make an environmentally sustainable contribution.



The European Green Deal aims to achieve carbon neutrality by 2050. The European Commission developed the Action Plan on Sustainable Finance to establish the economic basis as well as funding for this goal. The EU Taxonomy Regulation is one of the measures defined in this action plan that aims to promote investment in sustainable economic activities. This classification system defines economic activities that contribute to achieving the environmental objectives of “climate change mitigation” and “climate change adaptation” in the year under review. A list of taxonomy-aligned products can be found in the “Non-financial Group Statement” section of the GEA Annual Report 2022.

GEA products contribute positively to mitigating climate change because they deliver high energy efficiency, dispense with fossil fuels and use only natural and carbon-neutral refrigerants or innovative technologies such as plasma technology. This means we are complying with SDG 13.



## Turning manure into environmentally friendly, nitrogen-rich fertilizer

Manure has a bad reputation. Not only does it smell bad, in many places it is already partly responsible for nitrate-polluted groundwater. The alternative is artificial fertilizer, but high energy prices have made this a very expensive option. Together with Norwegian agri-tech company N2 Applied, GEA has developed a new solution for processing liquid manure. The system processes the manure from livestock farming into a more nutrient-rich and better for the plants to process fertilizer than the original product. By using plasma technology, the manure is enriched with nitrogen from the air. At the same time, the pH is lowered without adding chemicals, reducing 95 percent of ammonia and 99 percent of methane emissions from manure storage and spreading.

The end product is a sustainable, cost-effective fertilizer that can increase crop yields by up to 40 percent and reduce a livestock farm's greenhouse gas emissions by up to 30 percent. An added benefit is that the process almost entirely eliminates the typical odor of manure. Built into a container, the system is fully automated, can be monitored remotely and can be easily integrated into farm's existing infrastructure.





Definition: Plants, technological solutions or software for the production of plant-based alternatives to dairy products and meat, insect proteins, precision-fermented proteins and cell-based meat.

GEA's expertise in the New Food segment can help guarantee food security for the world's population, ensure that everyone maintains a healthy and balanced diet as well as end all forms of malnutrition. In other words, we comply with SDG 2. In addition, the production of meat and dairy substitutes helps to protect the climate, so we are also complying with SDG 13.



## Contributing to more sustainable and ethical nutrition

New Food means feeding more people with fewer resources. In addition, the production of alternative protein-rich foods also meets the increasing consumer demand for more nutritious, sustainable and ethical foods. As a full-range supplier, GEA already has all of the relevant technologies required by customers in this industry.





Definition: Devices, technological solutions or software designed to prevent food damage, either by direct protection against negative impacts (e.g. contamination, oxidation) or by ensuring high quality by means of additional measures (e.g. testing).

GEA's pigging systems reduce resource waste, water consumption and wastewater treatment. In this way, GEA is contributing to SDG 2, 6 and 12.



## Waste less food with pigging

The resources needed for food production are becoming scarcer and more expensive. Not letting food go to waste makes sense not only from a financial point of view but also for environmental, social and ethical reasons. In particular, we need to protect our drinking water as a valuable and limited resource. The "pigging" of product-carrying pipelines – a well-established method in liquid processing – minimizes product losses and saves water during pipe cleaning.

A pig – a movable plug that was developed and first used in the oil and gas industry to monitor pipelines – has become an important tool that helps reduce product waste in many cases. The pig pushes the valuable product residue out of the pipes to be returned to the production cycle before the pipes are flushed and cleaned. The thin film of product left behind is easily removed through subsequent cleaning, reducing the amount of rinsing required. It also ensures greater food safety by minimizing the risk of contamination of the manufactured products with germs or mold.





Human  
well-being

Definition: Devices, technological solutions or software designed for producing goods (or treatments) for restoring, maintaining or improving human health by means of pharmaceutical products or food supplements.

GEA's expertise in pharmaceutical and food technology is helping to ensure the health of all people around the world. This also includes innovative workplace warning systems. We are thus complying with SDG 3.

## Enhanced workplace safety with the GEA Digital Canary

In the past, it was real canaries that saved miners' lives if toxic mine gas suddenly escaped. Today, companies prefer to rely on a digital relative to protect their employees from hazardous airborne substances in the workplace. GEA has developed a real-time monitoring system to detect containment breaches in pharmaceutical production lines. By providing an additional level of monitoring, this reduces the need for routine health checks.

The patented device comprises a sensor that provides a constant reading of any product exposure at the sampling point. The information is relayed to a control system that sets off an alarm if the reading exceeds the specified limits. At the same time, the Digital Canary acts as a trigger for preventive maintenance, reducing the need for secondary personal protection equipment.





Definition: Devices, technological solutions or software designed to analyze and improve animal health and welfare to ensure sustainable animal husbandry.

GEA's smart technologies satisfy SDG 12 concerning animal welfare – for instance, by helping farmers use their natural resources sustainably and efficiently.



## Better animal health, higher milk yields and a reduced workload

Feeding dairy cattle based on output is a complex and labor-intensive process, but it is crucial for animal health as well as to achieve high milk yields. A consistent and homogeneous feed mix coupled with the permanent availability of fresh feed for the animals plays a key role here. A new automated feeding robot developed by GEA can ensure both. The autonomous feeding robot weighs, mixes and distributes up to 2.2 cubic meters of feed in one pass for up to 300 animals in different nutritional groups. It also prepares customized rations for individual groups according to the specified feeding cycles. Depending on the cows' milk output, feed can be administered up to eight times a day, which would not be possible manually for a comparable cost.

The robot can be deployed to check feed consumption and leftovers. This information can then be used to determine the amount of the next rations. It is also possible to analyze the nutrient composition of the ingredients as well as the mix quality, with the mix adjusted based on the farmer's own feeding strategy. The connection to the herd management software DairyNet and networking with GEA's milking robot lets the farmer directly compare feeding, milk yield and milk quality data around the clock. This data can then be used for precision optimization of the feeding strategy and milk production.



Definition: Devices, technological solutions or software designed to prevent or reduce emissions of pollutants other than greenhouse gases into the air, water or soil.

In line with SDG 12, GEA's emission control systems contribute to the environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks; the systems also significantly reduce their release into the air, water and soil, thus minimizing their adverse effects on human health and the environment.

## CO<sub>2</sub> separation from flue gases

The rising levels of CO<sub>2</sub> in the atmosphere are significantly contributing to climate change. To slow down this process, it is essential that we reduce the CO<sub>2</sub> emissions from industry. For example, the CO<sub>2</sub> in industrial gas streams can be captured using various methods – either by means of separation before or after combustion or through the “oxyfuel” process. GEA is currently focusing on post-combustion capture, as this approach reduces the impact on upstream processes to a minimum.

The principle of CO<sub>2</sub> capture through physicochemical absorption processes has existed for decades and is well established in the treatment of sour gas, in natural gas processing as well as in ammonia production. The current challenge is to adapt the concepts for oxygen-rich flue gases, which are prevalent in the relevant industries, and to reduce the amount of energy required for CO<sub>2</sub> capture. GEA's current solution for CO<sub>2</sub> capture is based on the use of aqueous amine solvents, which it combines with special scrubbing technologies. The physicochemical separation processes used for flue gases and process streams enable the highly efficient capture of CO<sub>2</sub>, thus contributing to the reduction of greenhouse gases.







# Water-saving technology for separator cooling

Definition: Devices, technological solutions or software designed for treating, purifying or reducing consumption of process water, mains water, river water or wastewater.

GEA products such as the Water Saving Unit not only reduce water consumption but also save energy. In this way, we are supporting the attainment of SDG 6, 12 and 13.

Neuenkirchen-based Naarmann dairy in Germany's Münsterland region has been operating a GEA separator for eight years. Until recently, the engine, hood and catcher had been cooled in a conventional manner with softened well water, which was discharged into the sewer system. A new add-on unit from GEA is now helping the dairy save 300 liters of water per operating hour. Extrapolated over the year, this amounts to more than one million liters, depending on production time.

But that is not all: Equipped with a circulation pump, the Water Saving Unit operates with two separate cooling water circuits for the engine and the hood and catcher. This also optimizes the unit's energy consumption. The customer needs to provide iced water at a rate of 11 to 13 liters per minute to cool the circulating water in a plate heat exchanger.

While continuous engine cooling is required during separator operation, hood/catcher cooling switches on automatically only when required during processing. This significantly reduces energy consumption compared with the previous cooling process, which required energy for pumping, cleaning as well as preparing and disposing of the separator's cooling water. With the installation of the Water Saving Unit, energy demand is reduced to just the electrical power necessary for cooling the circulating iced water and the unit's power consumption of less than 40 watts.





## Supporting extensive agriculture – conserving species

Definition: Devices, technological solutions or software designed to help conserve or protect the biodiversity of ecosystems.

GEA offers an end-to-end portfolio of advanced systems such as milking machines that contribute to conserving biodiversity. This is how we are supporting SDG 15 to halt biodiversity loss.

Agriculture and biodiversity are not mutually exclusive – they belong together. When sheep or goats move across grassland, this often means more than making sure they have enough food: they are also keeping the countryside open. The extensive cultivation of fields and pastures has created – and continues to create – a huge variety of habitats, which are home to numerous wild animal and plant species and must be protected, especially at a time when biodiversity is in decline. Sheep grazing also positively impacts the quality of grassland. It causes more species-rich populations to form in the spring, which are more productive than species-poor populations. Sheep and goats have an indirect positive effect on groundwater quality, as comparatively little nitrate leaching occurs.

Yet extensive farming is also labor-intensive because dairy sheep or goats do not milk themselves. GEA supports farmers looking to practice extensive or non-extensive livestock farming with a range of technical solutions, including rotary and group milking parlors for sheep, goats, buffalo, as well as camels and horses.





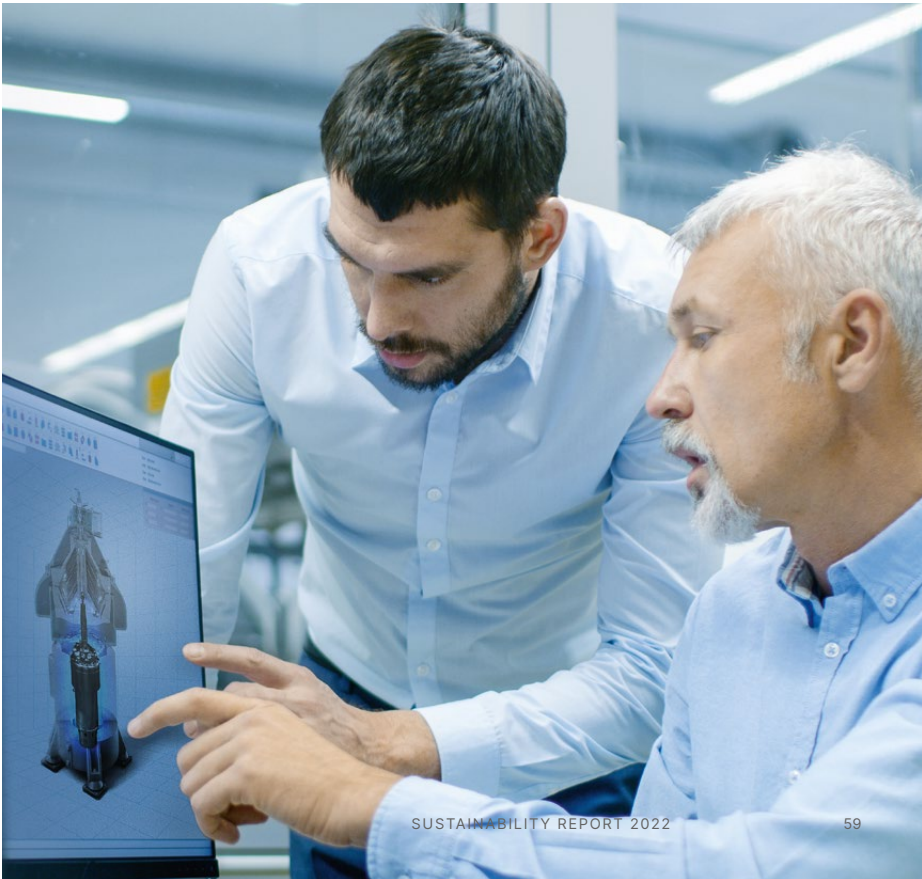
## Regular inspections conserve precious raw materials

Separators are used to clarify liquids or to separate liquids of different densities. They work based on the principle of centrifugal force. Using high acceleration forces, separators ensure the reliable performance and economical operation of marine engines, for example, increasing their uptime even under extreme conditions. The bowl that rotates inside the separator is one of the most highly stressed machinery components. Weighing up to 1,400 kilograms, it is subjected to centrifugal forces of up to 15,000 times the Earth's gravitational force. This is an acceleration of 15,000g. By way of comparison, when an ejector seat is released in a fighter aircraft, the pilot is subjected to acceleration of between 15 and 20g. So it stands to reason that a separator bowl must be of exceptional quality. Nevertheless, it still needs to be regularly inspected to ensure that, for instance, material fatigue is detected in good time.

This is why GEA offers customers bowl audits to minimize the possibility of separator failure as well as to reduce the effort and cost of repairs, which in turn increases the safety and service life of the machine. If a bowl is inspected on a timely basis, this core element of the separator can almost always be repaired. A prime example of the circular economy, this not only preserves the operator's finances but also conserves natural resources. In contrast to the manufacture of a new bowl, repairs require only extremely low material consumption.

Definition: Devices, technological solutions or software that meet at least one of the five Rs (reduce, reuse, repair, remanufacture, recycle).

By reducing materials consumption as well as increasing the repair and recycling rate, GEA is helping to ensure greater sustainability in consumption and production. Our machinery and plants support the attainment of SDG 12.





Definition: Devices, technological solutions or software designed with lower energy consumption / water consumption / material usage compared with previous generations.

GEA's heat pump technology significantly reduces energy consumption, saving both resources and emissions. This is how we are supporting the attainment of SDG 13.



## Integrated heat pumps reduce energy consumption

If the climate targets are to be met, consumption of primary fossil energy must substantially decrease. GEA has developed an air heating system for spray dryers that more than halves a plant's consumption of fossil fuels and its associated CO<sub>2</sub> footprint. Based on proven high-temperature heat pump technology, AddCool can be integrated into an existing powder spray drying process, cutting the overall energy required to heat the dryer air. This not only leads to considerable operating cost savings but also avoids emissions and can generate additional cooling capacity.

Powered by electricity, AddCool heat pump technology provides both high-temperature heat for the spray drying process and cooling for other process steps. Overall, it can reduce primary energy consumption and CO<sub>2</sub> emissions by up to 50 percent.



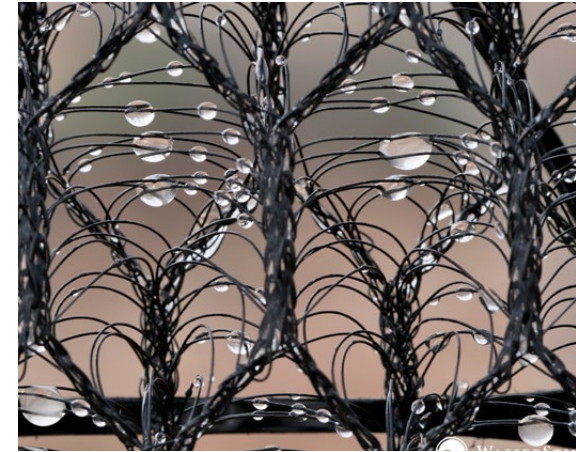
# RESPONSIBLE OPERATIONS



Responsible Operations

# TANZANIA'S CLOUDFISHERS

Water is life. The statistics alone show that these are not empty words: Diseases caused by contaminated water are responsible for more deaths than all forms of violence – including war. According to the United Nations (UN), 771 million people worldwide are without safe access to clean drinking water. And almost one in two of them lack access to any drinking water infrastructure. But water supply is one thing, hygiene is another: An incredible 3.6 billion people do not have assured access to sanitation, with around half of them without access even to basic sanitary provision.



Hamburg-based non-profit organization Viva con Agua supports WASH projects with the vision: “Water for all – All for water”. WASH stands for water, sanitation and hygiene – everyone should have access to clean drinking water, hygiene facilities and basic sanitation. GEA is exclusively supporting a WASH project to supply water to schools in Tanzania, East Africa, over the next three years. Viva con Agua received a donation of EUR 250,000 for this project in late 2022. In addition, GEA employees, especially in the field of environmental protection, will contribute their expert knowledge to the project by joining forces with the Viva con Agua teams.

The project is located in Babati in the Manyara region near Mount Kilimanjaro at an altitude of about 2,000 meters. The climate is temperate with dry winters and warm summers. Since well construction is virtually impossible in this area, Viva con Agua uses rainwater collection as well as a special technology for water harvesting that is as simple as it is ingenious: CloudFisher. These “fog nets” capture and store moisture

from the air. Made from special three-dimensional textile fabric, the low-maintenance nets can draw up to 1,000 liters of water from the air on a misty day. In areas where groundwater is in short supply, CloudFisher can ensure a sustainable water supply.

Measurements in Babati promise a yield of 51 cubic meters per year from a 54-square-meter fog net, collecting water at a rate of 300 to 600 liters per misty day. The highest yield is obtained during the dry season when it is misty. This makes it the most technically advanced, high-yield fog net system in the world. The water is channeled into 10,000-liter cisterns.



# 1,000

Made from special three-dimensional textile fabric, the low-maintenance nets can draw up to 1,000 liters of water from the air on a misty day.



#### **CloudFisher provides drinking water to 1,000 school children**

Starting in the fall of 2023, the fog nets, which have a lifespan of around ten years and cost between EUR 5,000 and EUR 10,000 each, will supply drinking water to 1,000 children at three schools in the town of Manyara. Schools in the Babati district are not connected to the public water supply. The situation in the region is representative of much of rural Tanzania. A good half of the population has no access to clean drinking water and more than three-quarters do not even have basic sanitation. The bulk of the water supply comes from rainwater, since there are two rainy seasons – one in the spring and one in late fall. Viva con Agua devised the collection systems used to gather rainwater from the school roofs. These supply clean water to another ten schools, a vocational training center and the local hospital. A total of around 4,000 children and – indirectly – 25,000 inhabitants of the surrounding communities are reached.

But the efforts do not stop there. Viva con Agua is looking to expand this project to reach three more schools and their neighboring communities using CloudFisher technology. The overall package also includes three cisterns each holding 50,000 liters of rainwater, six sanitation systems and 30 ceramic water filters for schools. To develop local capabilities, the project additionally comprises operations and maintenance training as well as hygiene education.



# 4,000

A total of around 4,000 children and – indirectly – 25,000 inhabitants of the surrounding communities are reached.

#### **Project expansion with GEA assistance**

In consultation with local experts, government and school authorities and the GEA team involved, a preliminary analysis will be carried out to select further schools that have the specific climatic conditions required to use CloudFisher technology.

Given GEA's technological expertise and based on the country's capacities, Viva con Agua welcomes the cooperation with GEA's team on the ground as well as their support in assessing and recommending appropriate technologies. The overarching challenges of procuring and securing equipment and materials are best addressed by pooling ideas. This has proven a successful approach in past projects – and this time should be no different. In any case, as regards ensuring a sustainable water supply with little technical effort, the project in Tanzania's Manyara region is highly promising.



## Responsible Operations

# We need to accelerate the pace of environmental protection.

Climate change is now one of the greatest risks to humanity alongside global species extinction. GEA is committed to the 2015 Paris Climate Agreement, the first universal, legally binding global climate accord. Under this Agreement, 196 countries pledged to limit the global temperature increase to well below 2°C and ideally to 1.5°C compared with pre-industrial levels. This has resulted in stricter climate regulations, particularly with regard to greenhouse gas emissions.

Climate protection now plays an increasingly important part in companies' social acceptance. It is a core value that civil society demands companies embody. As a multinational company, GEA takes this responsibility seriously and has set itself ambitious sustainability targets as part of its "Mission 26" group strategy. Most notably, these targets are aligned with the United Nations' 17 Sustainable Development Goals (SDGs). In addition to reducing emissions, we are committed to using our resources more efficiently as well as cutting our water consumption and waste generation. Social commitment in the communities close to our sites is also high on our agenda.



## GEA's Sustainability Targets:

- GEA intends to be a **net CO<sub>2</sub>-neutral company** by 2040 (net-zero target).
- By 2030, **greenhouse gas emissions** from our own operations (Scope 1 and 2) will be reduced by 60 percent compared with the base year 2019. In this context, GEA has set itself the target of reducing energy consumption across the company by 1.5 percent per year.
- By 2026, half of our total energy needs will be covered by a **certified energy management system**.
- Sites in regions where water is scarce must develop and implement a **water strategy** by 2026. In addition, water consumption is to be continuously reduced by 2.1 percent per employee compared with the previous year and the water treatment rate increased.
- The **waste recovery rate** will be at least 95 percent by 2026. The longterm target is 100 percent.\*
- By 2026, all preferred suppliers will meet GEA's **sustainability criteria**.
- GEA has set the goal of conveying industry and function-specific knowledge to a total of 100,000 people through **voluntary work** by 2026.
- GEA will donate **one percent** of its net profit each year.

\*) We already exceeded the 2021 target of achieving a waste recovery rate of 95 percent by 2026, recording 95.9 percent in the year under review. The target was adjusted in 2022.



# 2.1%

For GEA sites, the specific target is a year-on-year reduction in water consumption of 2.1 percent per employee each year.

Due to the global situation which led to a rise in gas prices in the past year – especially in Europe – GEA has set itself the target of reducing gas consumption by 20 percent at each site. In addition, all GEA employees have been called upon to reduce the company's energy consumption at local or global level, thereby not only saving costs but also acting in line with the company's sustainability strategy. As part of a global energy-saving drive, all employees can put forward their ideas to inspire others and bring about sustainable change (see also page 30).

Alongside the reduction of greenhouse gas emissions, all GEA sites are required to save water, thus reducing water consumption on a continuous basis. For GEA sites, the specific target is a year-on-year reduction in consumption of 2.1 percent per employee each year. In addition, we will recirculate more water in the future and sites in water-scarce regions must implement a water strategy by 2026. Going forward, we will place greater emphasis on the circular econ-

omy in order to conserve raw materials and protect the environment. Recycling and converting waste into new and usable materials will be a top priority.

Environmental protection is a central goal of GEA's "Mission 26" strategy and an integral aspect with regard to our products, services and processes. We seek to design our value creation processes responsibly and provide our customers with increasingly efficient products and process solutions to help them contribute to sustainability and preserve natural resources. Efficiency comes from minimizing the amount of energy we use, conserving raw materials and increasing recycling rates while at the same time enhancing performance.



### **Systematic energy and environmental management**

Group-wide environmental protection is not only enshrined in GEA's business strategy but also integrated into our daily processes in dialog with our business partners and other stakeholders. Reporting directly to the Chief Operating Officer, the central QHSE department is responsible for environmental protection. The environmental key performance indicators from all relevant GEA sites are collated and analyzed. Results are regularly evaluated with those responsible at divisional and regional level and used to monitor target attainment.

Environmental aspects are managed in accordance with the Quality, Health, Safety and Environment (QHSE) Policy. This binding policy sets out how to identify the key environmental factors related to activities, products and services. Our energy management system is decentralized so that we can meet local legal requirements. The effectiveness of the existing management systems was confirmed by internal and external audits in 2022.

### **External audits**

The group-wide validity of the environmental management system under ISO 14001 was confirmed for a further three years in the year under review through matrix certification\*. Twelve external audits were conducted as part of this recertification. By 2026, all production sites are to be externally certified in accordance with ISO 14001. A total of 22 production sites are already certified, which corresponds to a coverage rate of 38 percent. In addition, Internal Audit conducts a questionnaire to check the extent to which audits and other requirements have been met. It then reports the current status to the QHSE department.

### **ISO 50001 certification**

By 2026, 50 percent of the annual energy needs across ten GEA sites will be covered by a certified energy management system. Germany's Oelde and Niederahr sites are already ISO 50001 certified. Certification of the remaining eight sites is planned over the coming years (see overview of certifications on page 25).

### **HSE legal compliance audits**

In the context of HSE legal compliance audits, we voluntarily have our compliance with legal requirements in different areas, such as environmental protection or occupational safety, audited by an external service provider at site level. External HSE compliance audits are carried out every three years at all GEA production sites as well as at the major service workshops and test center locations. Twenty-one were conducted in the year under review alone.

### **Internal audits**

The central QHSE department developed the "Environmental Excellence Audit" in 2022. Using a questionnaire, compliance with internal and external processes and specifications related to the environment (emissions, water, waste, etc.) and the GEA standards are reviewed. This audit was tested at one production site in the year under review. Looking ahead, this new internal audit will be carried out at all 58 production sites on a rolling basis over three years.

\*) GEA opted for matrix certification in 2016 and includes the global subsidiaries in the umbrella certification of GEA Group Aktiengesellschaft (headquarters). That means the integrated management system is based on uniform documentation. The advantage of matrix certification is that a company does not have to be audited every year. Sample-based auditing of selected sites is sufficient to obtain or maintain certification for all companies. This not only has financial advantages but also requires less work. Each participant is audited an average of once per certification cycle.

### Energy demand, greenhouse gas emissions and other air emissions

By 2030, we aim to cut Scope 1 and 2 greenhouse gas emissions by 60 percent and Scope 3 greenhouse gas emissions by 18 percent compared with the base year 2019. The Science Based Targets initiative (SBTi) – a globally recognized, independent organization for auditing climate targets – validated these reduction targets in 2021. The SBTi has therefore confirmed that GEA's interim targets are in line with the latest climate research findings and will make an effective contribution to attaining the targets set by the Paris Climate Agreement.

Since 2017, GEA has been recording its greenhouse gas emissions across all three scopes by region, and since 2019 we have been reporting CO<sub>2</sub> equivalents (CO<sub>2</sub>e<sup>1</sup>) for those countries where energy suppliers are able to provide reliable information on the energy mix on the basis of which the CO<sub>2</sub>e is determined.

For the year under review, we were able to report the greenhouse gas emissions for 85 sites, including production facilities, service operations and administrative offices. Worldwide, the energy consumption data for Scopes 1, 2 and 3.6 is collected via a standard system (SoFi) and reported as follows:

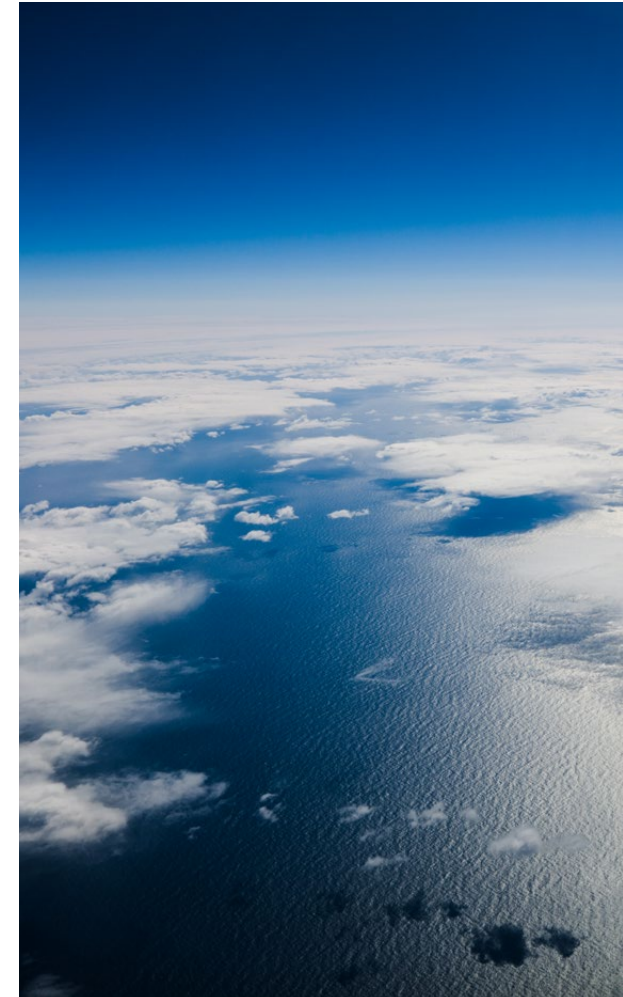
- **Scope 1:** Direct greenhouse gas emissions, calculated from the combustion of mineral oil, various gases, wood pellets, diesel, kerosene and gasoline
- **Scope 2:** Indirect greenhouse gas emissions from the consumption of electricity, heat, steam and cooling
- **Scope 3.6:** Greenhouse gas emissions from business travel

In addition, since 2021, further Scope 3 data has been recorded or calculated using internationally recognized methods:

- **Scope 3.1:** Purchased goods and services
- **Scope 3.2:** Capital goods
- **Scope 3.3:** Fuel- and energy-related activities
- **Scope 3.4:** Upstream transportation and distribution
- **Scope 3.5:** Waste generated in operations
- **Scope 3.7:** Employee commuting
- **Scope 3.8–3.10:** Not relevant for GEA<sup>2</sup>
- **Scope 3.11:** Use of sold products
- **Scope 3.12–3.15:** Not relevant for GEA<sup>2</sup>

1) CO<sub>2</sub> equivalent (CO<sub>2</sub>e) is a unit of measurement used to standardize the climate impact of the various greenhouse gases (CO<sub>2</sub>, methane, HFCs, N<sub>2</sub>O, PFCs, NF<sub>3</sub>, and SF<sub>6</sub>) included in the overall data. This means that GEA's methane emissions are reported as CO<sub>2</sub> equivalents and count toward the emissions reduction target of 60 percent by 2030. Unless market-based, emission data is based on the conversion factors specified in the GHG Protocol/IEA, 2022 version (12/2022). Scope 1 and 2 emissions are reported quarterly for each site and annually in the Sustainability Report.

2) We periodically assess which Scope 3 categories are relevant to us and whether they should be calculated and managed. The Scope 3.8–3.10 and 3.12–3.15 categories are not relevant for GEA or are not calculated because of their minimal relevance to emissions.





# 1.5%

We have set ourselves the target of reducing NO<sub>x</sub> emissions by 1.5 percent per year.

All sites report their energy consumption to the QHSE department on a monthly basis. In addition, energy consumption (electricity and natural gas) is reported monthly to the GEA Energy Dashboard, thus ensuring greater energy transparency within the company. Relevant employees can use the dashboard at any time to track the level of energy consumption at their site compared with the previous month or year or with other sites. Additionally, energy consumption and greenhouse gas emission data is published once a year in both the Annual Report and the Sustainability Report.

Besides greenhouse gases, GEA generates other air emissions including nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>) and volatile organic compounds (VOCs). NO<sub>x</sub> and SO<sub>x</sub> are released when fossil fuels are burned. This is a major cause of poor air quality and responsible for health problems in millions of people worldwide. Elderly people and children especially suffer from the effects of poor air. With more than 18,000 employees worldwide, air quality is important for GEA because some of our sites are located in regions with high levels of air pollution that could affect the health and productivity of our workforce.

In 2022, GEA joined the Alliance for Clean Air, which was launched a year earlier by the World Economic Forum (WEF) in partnership with the Clean Air Fund. The alliance brings together business leaders committed to measuring and reducing value chain air pollutant emissions, investing in innovation and working with policymakers and other peers to champion

the social, economic and climate benefits of tackling air pollution. Our participation in the Alliance for Clean Air is aimed at sharpening the focus on air pollution and accelerating improvements in air quality.

That is why we have set ourselves the target of reducing NO<sub>x</sub> emissions by 1.5 percent per year (2022: 31.7 tons; 2021: 31.1 tons). Sulfur oxide emissions at GEA are negligible because only very small quantities are generated by the company's production processes. VOCs result from the evaporation of solvents when coating GEA products as well as from fuel combustion by the GEA vehicle fleet. In 2023, GEA plans to record VOC values as the basis for setting reduction targets.

Due to the sharp rise in global gas prices in the year under review, GEA has set itself the target of reducing gas consumption by 20 percent at each site. A contingency plan has been drawn up to provide for any impending gas shortage. Going forward, some of the gas used by GEA will be replaced with electrical energy. In addition, fossil-based natural gas is to be replaced with biogas by 2030, which means that at the latest from then on we will be using solely renewable energies.

Our total energy needs (Scope 1 and 2) in the reporting period amounted to 243,498 MWh, 37.3 percent of which was met from green power. That means consumption decreased by 5.8 percent compared with 2021 (see “Energy consumption” table). In 2022, total CO<sub>2</sub> emissions (market-based) for Scope 1 and Scope 2 were 33,018 tons, down 35.8 percent from the previous year (see “Greenhouse gas emissions” table). GEA is thus on track to achieve the aforementioned target for Scope 1 and 2.

The lower energy consumption in 2022 was due to the intensive measures aimed at reducing natural gas consumption. All of the company’s electricity needs worldwide were supplied from renewable sources, representing 36.6 percent of the total energy requirement. In addition, the company is expanding its own power generation capacity using photovoltaics (PV). PV units are currently in operation at seven sites: ‘s-Hertogenbosch (Netherlands), Vadodara (India), Tullamarine (Australia), Mexico City (Mexico), Suzhou (China) and Quinto de Treviso and Colognola ai Colli (both Italy). The site in Mexico, for example, is entirely self-sufficient and generates so much electricity that it feeds about 18 percent of its output into the public grid. In Suzhou, a unit with an output of 1,200 MWh has been installed and supplies one third of the site’s total needs. Eighty-eight percent of the electricity generated was used by the company itself and the remaining 12 percent was fed into the grid. Each year, GEA generates around 2,852 MWh of solar electricity, enough to meet the average needs of around 880 two-person households in Germany. In 2022, solar electricity accounted for 3.1 percent of total electricity consumption by GEA.

Further PV units will be installed in 2023, for instance, in Oelde, Germany, (2,000 MWh) and Koszalin, Poland, (1,800 MWh). Preparations are currently underway to construct further units in Italy, Germany, India and China. Our goal is to install new units with a total capacity of 7,000 MWh in 2023. Thanks to this expansion, the amount of electricity generated by the company would be enough to supply more than 2,150 two-person households. Increasing the proportion of in-house electricity generation reduces climate impact and will cut costs in the medium term, thereby safeguarding the company’s competitiveness. Further installations are planned for 2024 and 2025; a feasibility study will be conducted for the respective sites beforehand. If all planned projects are implemented, it is anticipated that as much as 30 percent of our electricity needs (base year 2022) could be met from our own photovoltaic units from 2026 onward.

Special attention will be given to energy efficiency when constructing the new GEA Avapac plant in Hamilton, New Zealand. Planning here also takes account of EU Taxonomy requirements. The entire building will have LED lighting with daylight sensors, fully insulated walls and ceilings as well as double glazing. In addition, there are plans to equip parking spaces with charging stations for electric cars and bikes. Reducing water consumption by irrigating green spaces with rainwater from cisterns is likewise on the agenda.

## Using heat pumps to combat climate change

Tim Scheuermann, Simon Keller and Luisa Naphtali from the Heating & Refrigeration Technologies (HRT) Division came up with a great idea which won them third place in the “Carbon Busters” competition organized by the German Mechanical and Plant Engineering Association (VDMA). Yet the idea of combating climate change by using a heat pump to capture the heat generated at the HRT Validation Test Center in Berlin and sell it to the local heating network was not the end of the story. Students at the Berliner Hochschule für Technik (BHT) and the local heating network operator are now testing the concept’s feasibility. At present, the waste heat from testing engines is simply lost to the atmosphere. But heat pumps could soon be used to convert this waste heat into energy and cut CO<sub>2</sub> emissions by some 2,700 tons each year. This is equivalent to around 230 percent of the CO<sub>2</sub> emissions produced by the site, excluding the test center. Although some work remains to be done, the three award winners are optimistic. “If we get this project off the ground, it could be a model for other industrial processes and production sites around the world,” says Luisa Naphtali.





## Water

GEA aims to reduce the local negative impacts of water consumption. To this end, the company has developed a process for identifying those regions at risk of water scarcity and for determining potential impacts on GEA sites. Each year, GEA sites in water stress regions are mapped in line with the classification used by the World Resources Institute (WRI) to produce the Aqueduct Water Risk Atlas. In the year under review, GEA focused on its sites in regions with a high or extremely high water risk. Detailed surveys recorded whether any water risks are known and relevant to a site's operations, what legal requirements apply and what measures are being taken to reduce water consumption. By 2026, these sites must develop and implement a water strategy. Each year, they must also provide information about the current status and action taken as part of the water risk assessment. Of 84 sites surveyed, including production facilities, service organizations and administrative offices, four sites reported extremely high water stress and 11 high water stress. These 15 sites together accounted for 16.2 percent of GEA's total water consumption in 2022. An ongoing goal is to continuously reduce water consumption by 2.1 percent per employee compared with the previous year and to increase the water treatment rate.

The responsible use of water is an integral part of the group-wide commitment to sustainability and is described in the company's Water Policy. QHSE management teams record water data at 84 sites. In addition, water data is collected for our service organizations, repair shops, hygiene operations, locations with management systems certified to ISO 14001 as well as offices and warehouses with significant environmental impact. We measure the extraction of water from municipal networks and groundwater from our own wells alongside wastewater volumes. Starting in 2023, we will also be recording data on rainwater use.

GEA's water consumption is relatively low at around 19.1 cubic meters (m<sup>3</sup>) per year and full-time employee, equivalent to about 52.3 liters of water per person each day. In 2022, the amount of water extracted from municipal networks and wells and wastewater volumes was recorded at 84 (2021: 89\*) sites (production facilities, service organizations, administrative offices) (see "Water" table). Total water consumption decreased by 1,273 m<sup>3</sup> compared with the previous year. This is primarily because GEA did not experience any essential water leakages in 2022. At the 15 sites in water stress areas, water consumption was reduced by 26.3 percent.

To reduce water consumption, two sites in India treat 14,568 m<sup>3</sup> of wastewater themselves each year for use in cleaning processes and plant irrigation. The resulting water treatment rate is 4.9 percent. Looking ahead, there are plans to treat wastewater also at other sites. Several sites now collect rainwater to irrigate their green spaces. It is normal practice to discharge site wastewater into municipal sewage systems. On behalf of GEA, external disposal companies collected and treated 432 m<sup>3</sup> of wastewater which could not be discharged into municipal sewage systems.

\*) Decrease in the number of sites due to the sale of operations and site relocations.

## Preserving resources made easy

GEA employees can create their own digital business cards in just a few clicks. According to a study by Adobe, 88 percent of all the printed business cards distributed are thrown away within a week. To stop this waste, GEA's Business Card Generator makes it possible to produce digital business cards in the new corporate design. And it is pretty easy to do. The Business Card Generator fills in the employee's contact data automatically, simply retrieving it from GEA's human resources data processing system. The card is then created with a QR code which can be stored on the user's cell phone and shared with contacts. The Business Card Generator can be accessed by all employees who have a GEA computer with access to the GEA network.



### Waste

Systematic waste management ensures that material consumption and disposal volumes are kept as low as possible. Contributory measures include waste separation, economical recycling processes and the increasing use of secondary raw materials. We already exceeded our 2021 target of achieving a waste recovery rate of 95 percent by 2026, recording 96 percent in the year under review. That means the long-term target is now 100 percent. A further goal is to reduce the amount of waste generated per employee by 2.1 percent each year.

In 2022, the waste volume was recorded at 72 GEA sites\* (2021: 75 sites), including production facilities, service organizations and administrative offices (see "Waste" table). The waste volumes recorded include municipal waste, hazardous waste and recyclable residual materials. The total volume of waste generated in the reporting period was 13,437 tons, an absolute increase of 0.7 percent compared with the previous year. The reasons for this were increased production activities, a major archive cleanup and a collection campaign for metal scrap.

Nine hundred and four tons of this waste consisted of halogen-free machining emulsions and solutions as well as aqueous cleaning liquids, representing 14.8 percent of the total waste volume. While these substances are classified as hazardous waste, they are necessary for certain production processes. In compliance with legal requirements, we regularly review whether it is possible to replace these substances. This involves analyzing whether the relevant substances can be replaced with less hazardous alternatives or whether it is possible to eliminate their use in whole or in part by modifying production processes. We are aiming to reduce the use of these substances by 1.5 percent each year.

All hazardous waste is collected and processed by authorized specialist companies on behalf of GEA. Within the European Union, these companies must comply with strict legal requirements. In Germany, regulations are based on the Circular Economy Act and are intended to ensure compliance with environmental protection and occupational health requirements.

\*] Decrease in the number of sites due to the sale of operations and site relocations.



### **Biodiversity**

The protection of biodiversity and forests is firmly anchored in our sustainability processes and policies. GEA is committed to protecting biodiversity, especially in connection with new construction projects. GEA in Mexico has undertaken two reforestation projects to help restore the habitat of an endemic butterfly – one that is found only in a specific area. The insect migrates between South and Central America and plays an important role in the ecosystem.



## **Additional environmental protection initiatives and measures:**

### **Making compressed air leaks visible**

At the Oelde site in Germany, many of the lines and machines used in production are operated with compressed air which must be generated by a compressor, resulting in high energy costs. That means compressed air leaks should be avoided for both financial and environmental reasons. Yet, unlike water, the air cannot be seen escaping from leaking pipes. In order to identify any leaks, the site uses a special camera that also calculates the leakage volume and the associated costs. After filming all the lines and machines that use compressed air, repairs were made and the respective machines fitted with compressed air meters. This has been a worthwhile investment because these measures save us some EUR 30,000 in energy costs each year.

### **Montigny strengthens environmental protection**

In 2022, GEA's site in Montigny le Bretonneux, France, not only switched its entire power supply to green electricity but also installed automatic lighting in printer rooms, restrooms, stairwells and a number of corridors. Half of the old heat pumps were replaced with efficient, state-of-the-art HVAC heat pumps to ensure automatic temperature control at night and on weekends. There are plans to replace the remaining pumps as well. The investment for installing 47 electric vehicle charging stations was approved, as was the expenditure for replacing the building's primary heating and cooling system, which will consume about 60 percent less energy. The waste separation portfolio has been expanded, with plastic bottles, cans, glass and organic waste such as coffee pods, etc. now being collected in the offices. In addition, GEA provides an allowance to all Montigny employees if they travel to work by bicycle or electric scooter.

Occupational health and safety

# Safety always pays off.

GEA's employees are the company's most important asset. That is why we promote the health of our workforce in order to sustain their long-term performance. The aim is to avoid any accidents and illness from the outset. For this reason, we are continuously fine-tuning our occupational health and safety activities. Physical well-being and a safe workplace are the key to coping with the physical and psychological stresses of a challenging role and sustaining professional performance. GEA has always made it a priority to create a safe working environment for all employees, contractors and service providers. Ultimately, a strong occupational safety culture contributes to enhancing performance throughout the company.





Zero accidents has been GEA's target for many years. That is why we protect all our employees and contractors wherever they work. Contracts with customers, suppliers and subcontractors are always subject to the respective safety standards of both parties. Specifically this means that, if the standards applied by our contractual partner are more stringent than our own, these will also extend to our employees. Contracts contain provisions governing occupational health and safety and the related procedures. Additionally, occupational health and safety is directly linked to the United Nations 2030 Agenda for Sustainable Development (SDG 3 "Good health and well-being" and SDG 8 "Decent work and economic growth").

#### **Systematic occupational safety management**

All hazards and risks that could result in workplace accidents and work-related illnesses need to be identified in good time and remedied sustainably by means of systematic processes supported by GEA's central occupational health and safety management system, which is certified in accordance with ISO 45001. The central Quality, Health, Safety and Environment (QHSE) organization is supported by decentralized QHSE units in the divisions, regions, countries and companies. The main objective is to ensure a safe and healthy working environment for all employees and to comply with legal requirements as well as GEA's own occupational safety standards. GEA has additionally established a central crisis management system.

At the company's larger sites, several people are responsible for occupational health and safety. In other cases, a single employee is responsible for several small sites. Appointed by the local business units in accordance with the respective country's legal provisions, the persons in charge then act as HSE managers for the GEA companies. In Germany, for instance, the tasks are performed by occupational safety specialists. The QHSE unit regularly reports to the Executive Board regarding health and safety risks.

GEA's occupational safety principles are documented in the QHSE Policy. The GEA Safety Core Rules are central to the company's occupational safety standards. Occupational safety management is reviewed by way of occupational safety audits as well as by regularly updating and amending the risk assessments. The Executive Board receives regular reports on the audit results. Occupational healthcare is provided in accordance with the respective national requirements. The associated health services are contracted locally and in compliance with the relevant legislation. In Germany, the occupational physician at a site is a member of the Occupational Health and Safety Committee (Arbeitschutzausschuss – ASA). This provides a platform for planning, coordinating and evaluating measures to improve occupational health and safety at GEA. It is also an important forum for involving employees in the occupational health and safety organization. Similar committees have been established in the countries in accordance with local requirements.

### Education, training and briefings

GEA systematically records the primary causes of accidents, the types of injuries, the body parts affected and other accident-related data. This level of detail facilitates our analysis, especially when it comes to identifying accident hotspots and causes. Introduced in 2017, the GEA Safety Core Rules apply worldwide and represent the minimum standards for occupational health and safety in our company. They are available in the GEA Learning Center in the form of online training courses and videos in 14 languages. Employees and temporary workers are regularly instructed and trained in work-related health and safety aspects – for example, as part of an occupational health and safety campaign.

Contractors are informed about the GEA standards and receive instruction before starting any activity. In accordance with the respective national regulations, country-specific training courses on occupational health and safety are provided for certain hazardous activities or equipment with risk potential, such as working at height or using forklift trucks. Such courses are the responsibility of the local managing directors and site managers. In this connection, more than 60 uniform minimum standards (Safe Systems of Work) must be considered by GEA companies worldwide. Centrally organized external and internal occupational safety audits are performed regularly at GEA companies to review their compliance with GEA's occupational health and safety standards and support the implementation of specific action plans.

External HSE compliance audits are carried out every three years at all GEA production sites as well as at the major service workshops and test center locations (2022: 21). External audits of ISO 45001 occupational health and safety management systems take place at least every three years at certified sites (2022: 12). Compliance with GEA standards and ISO certification requirements is regularly reviewed by internal HSE Excellence Audits (2022: 12).



# 21

Number of external HSE compliance audits performed in 2022 at GEA production sites as well as at the major service workshops and test center locations.



### Serious Events Reporting System

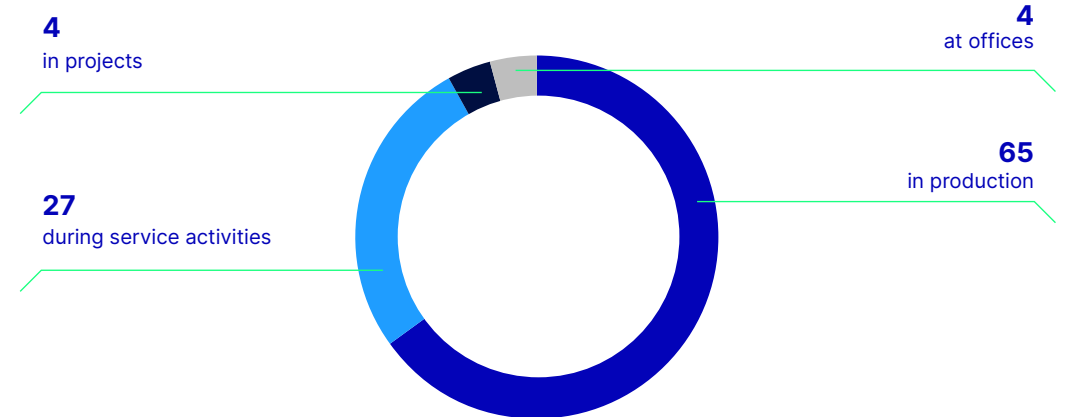
The Serious Events Reporting System instantly alerts the Executive Board and divisional management to harmful events such as fatal and serious accidents, fires, explosions or environmental and safety incidents. They include events involving contractors' employees working on behalf of GEA. The reporting system allows us to respond very quickly to serious events, potentially minimize their impact and promptly initiate investigations into incidents. This is followed by a dedicated lessons-learned process with the aim of avoiding similar incidents in other areas, identifying measures for improvement and communicating them to the organization. The Serious Events Reporting System also deals with incidents related to our products and plants, which are recorded and analyzed even if a GEA product or plant was not the cause of the incident. All GEA sites are required to develop their own contingency plans and regularly test their effectiveness.

The safety of our subcontractors is just as important to us as that of our own workforce. Occupational safety is not only an integral aspect of the terms and conditions specified in the Code of Conduct for Suppliers and Subcontractors but also a core element of our supplier assessments and a regular feature of supplier audits. Serious accidents and other incidents affecting subcontractors' employees – for instance, on construction sites or at our plants – are already recorded in the Serious Events Reporting System. Starting in 2023, we will be recording all accidents resulting in lost time involving subcontractors and related to work on behalf of GEA.

To achieve our long-term zero-accident target, we apply a consistent precautionary approach to occupational health and safety. This means that, for the purpose of detecting potential risks and hazards early on and preventing possible accidents, we have also been recording near misses worldwide since 2017. Just like actual accidents, these incidents are systematically analyzed to initiate a follow-up process with defined responsibilities and a specific set of actions. This process is greatly appreciated by our employees and, as a result, they have reported more near misses and unsafe situations than in the previous year (2022: 317; 2021: 264), which confirms their growing risk awareness.

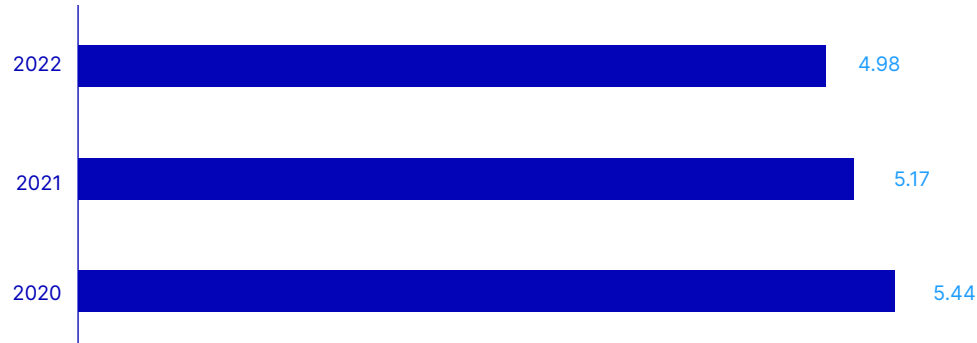
### Worksite accidents by place of activity

(in %)



## Lost time injury frequency rate

Accidents with period of absence per million hours worked



## Occupational health and safety in 2022

Compared with the previous year, the number of accidents declined by 4.4 percent (see “Occupational health and safety” table). Over almost the same number of hours worked, we cut the lost time injury frequency rate in the year under review to 4.98 accidents per million hours worked (2021: 5.17) (see “Lost time injury frequency rate” graphic). A total of 197 accidents were reported by companies contracted by GEA (2021: 206). There were no accidents resulting in lost time at 239 sites, representing 74 percent (2021: 77 percent) of the GEA sites covered by the reporting system. Regrettably, one fatal accident at work occurred in 2022: a traffic accident involving a GEA employee in the USA. No fatal accidents at work were reported by our subcontractors. In the year under review, the lost time injury severity rate<sup>1</sup> fell by more than the target of minus ten percent to 101 days lost after accidents per million hours worked (2021: 129). This corresponds to a decrease of 22 percent. The increase in the rate of other incidents to 317 (2021: 264) is positive because it means

that measures to eliminate unsafe situations or actions can help prevent accidents. We expect GEA's average accident rate<sup>2</sup> to be significantly lower than that of the member companies of the employers' liability insurance association for the wood and metal industry (BG Holz und Metall) (2021: 21.5) and that of all employers' liability insurance associations (2021: 12.85) as in 2021. The data from the employers' liability insurance associations will not be available until mid-2023.

### Targets

GEA has set itself the target of continuously reducing the number of accidents at work. Up to 2026, we plan to reduce both the lost time injury frequency rate and the lost time injury severity rate by ten percent year on year. At the same time, we aim for an annual ten-percent increase in the number of other incidents reported, such as unsafe situations, unsafe actions or near misses. These targets were exceeded in the

reporting year for the accident severity rate and the rate of other incidents. The accident frequency rate, on the other hand, was above the set target. We have one long-term goal here: zero accidents. That is why a health and safety risk assessment is generally performed as part of the due diligence processes relating to potential new businesses or projects. In addition, we are working consistently to optimize workplace ergonomics and prevent the risk of contact with hazardous substances. A further target is to implement an ISO 45001 management system at all 58 production sites by 2026. At present, around 33 percent of the sites have such a management system in place.

1) Number of lost days multiplied by one million and divided by the number of hours worked.

2) Reportable accidents at work per million hours worked.

## Sustainable supply chain

# “We are a strategic partner”

No fewer than 90 of GEA's most important suppliers accepted the company's invitation to attend the third GEA Supplier Summit on September 14, 2022. Top of the agenda was sustainability. The summit also addressed digitalization and how companies can become more resilient in uncertain times. Alongside representatives from many multinational companies, GEA's CEO Stefan Klebert, Chief Operating Officer Johannes Giloth and some 50 other members of the GEA management team traveled to Hamburg for the event. Klebert presented GEA's "Mission 26" to the company's largest suppliers while Giloth offered an insight into the Global Operations organization.

GEA has very ambitious sustainability targets – economic but above all environmental and social. Yet we are fully aware that we can only achieve these targets with the support of our suppliers. That is why, in 2022, we formulated sustainability criteria for suppliers. Compliance with these criteria benefits not only GEA but also our suppliers. Therefore it made perfect sense to present our project at a GEA Supplier Summit and discuss it with our suppliers.



“We wanted to show our preferred suppliers that GEA is an attractive partner for them,” says Jean-Victor Panzani, Vice President Procurement Operations & Excellence. “For instance, GEA’s spending with our top 25 suppliers grew by eight percent between 2020 and 2021, while spending with the remaining suppliers increased by only one percent. We presented ‘Mission 26’ and emphasized that we are a strategic partner. If they join us on this path, they will also benefit,” Panzani explains.

“The Supplier Summit was undoubtedly a great success. We strengthened our relationships with our preferred suppliers and presented our sustainability criteria,” reports Johannes Giloth. “Now we all need to work together to ensure that our supply chain functions as well as possible so that we can achieve our Scope 3 targets and reduce our greenhouse gas emissions. I think it is equally important to highlight the pressure currently weighing on our coworkers in Procurement, Engineering and Production due to the unpredictability of supplies and material shortages. And also to thank them for their tremendous work.”

#### **A consistent focus on sustainability**

At the first two supplier summits in previous years, GEA had presented its sustainability plans. Now it was time to explain what the company actually does. Dr. Nadine Sterley, Chief Sustainability Officer, outlined how and why GEA is seeking to play a leading

role in sustainability. Sebastian Zingsheim, Head of Sustainable Procurement, presented the sustainability criteria for suppliers and notably elucidated GEA’s expectations.

A forum involving our investors’ and customers’ sustainability managers and a panel discussion with our suppliers explored sustainability in greater depth. “We told our suppliers that meeting our criteria in a timely manner will also make them leaders in sustainability, thus giving them a competitive edge. They will receive an EcoVadis rating and be pursuing science-based carbon reduction targets consistent with the 1.5°C target. During the round table discussions, we received very positive feedback on the criteria and learned a lot about what our customers and suppliers are already doing,” Panzani reports.

Florian Wintermantel, Senior Vice President Direct Procurement, is similarly positive about future cooperation with the company’s suppliers. “We are aiming to improve our profitability with the support of our key suppliers. They can help us with new technologies, innovations, technical resources and standardization,” explains Wintermantel. “The Supplier Summit gave us the opportunity to discuss these issues and clearly formulate our sustainability criteria. Everyone understood and everyone agreed. Now we have to implement them all.”

#### **Shared challenges and solutions in uncertain times**

Given the uncertainties the procurement sector is currently facing, the Supplier Summit and especially the round table discussions could not have happened at a better time, according to Zsolt Szeker, Senior Vice President Indirect Procurement. “The market is unpredictable. Europe is experiencing raw material shortages, inflation and an energy crisis. We need to ensure that suppliers continue to prioritize GEA as companies fight for resources. Yet we also need to learn from each other because we are all up against the same challenges,” says Szeker.

Suppliers engaged in in-depth dialog about what they and other customers are doing. And they praised GEA’s initiative. “Several suppliers said they were impressed with the frank and open nature of the discussions we had. I think we all learned a lot. Now we must see which ideas we can pursue,” says Zsolt Szeker, summarizing the spirit of the summit. “We’re all in the same boat, with the same goals and the same challenges. And if we don’t pull together, none of us will get to where we need to be.”

*“The Supplier Summit was undoubtedly a great success. We strengthened our relationships with our preferred suppliers and presented our sustainability criteria.”*

Johannes Giloth, Chief Operating Officer

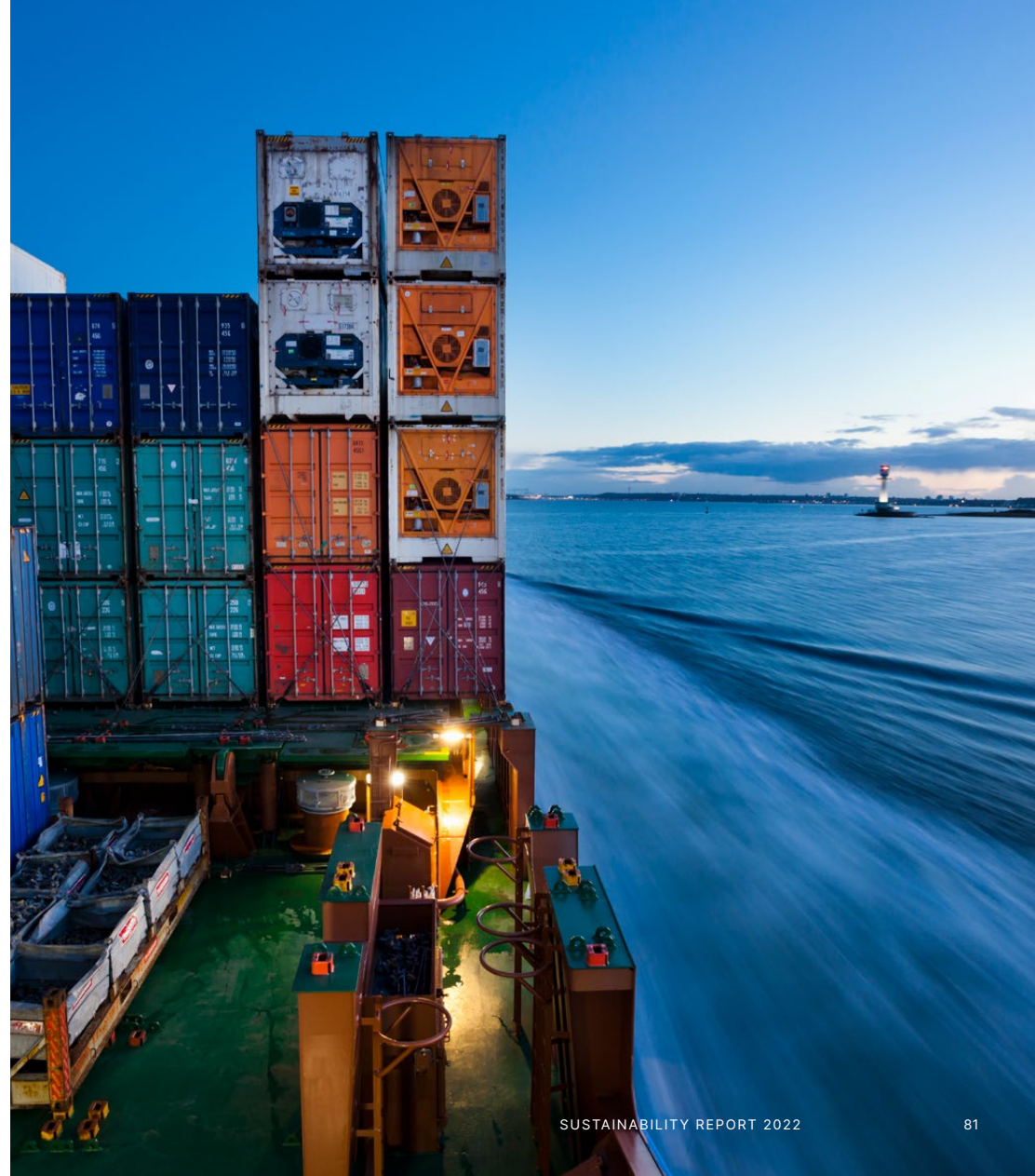




## Sustainable supply chain

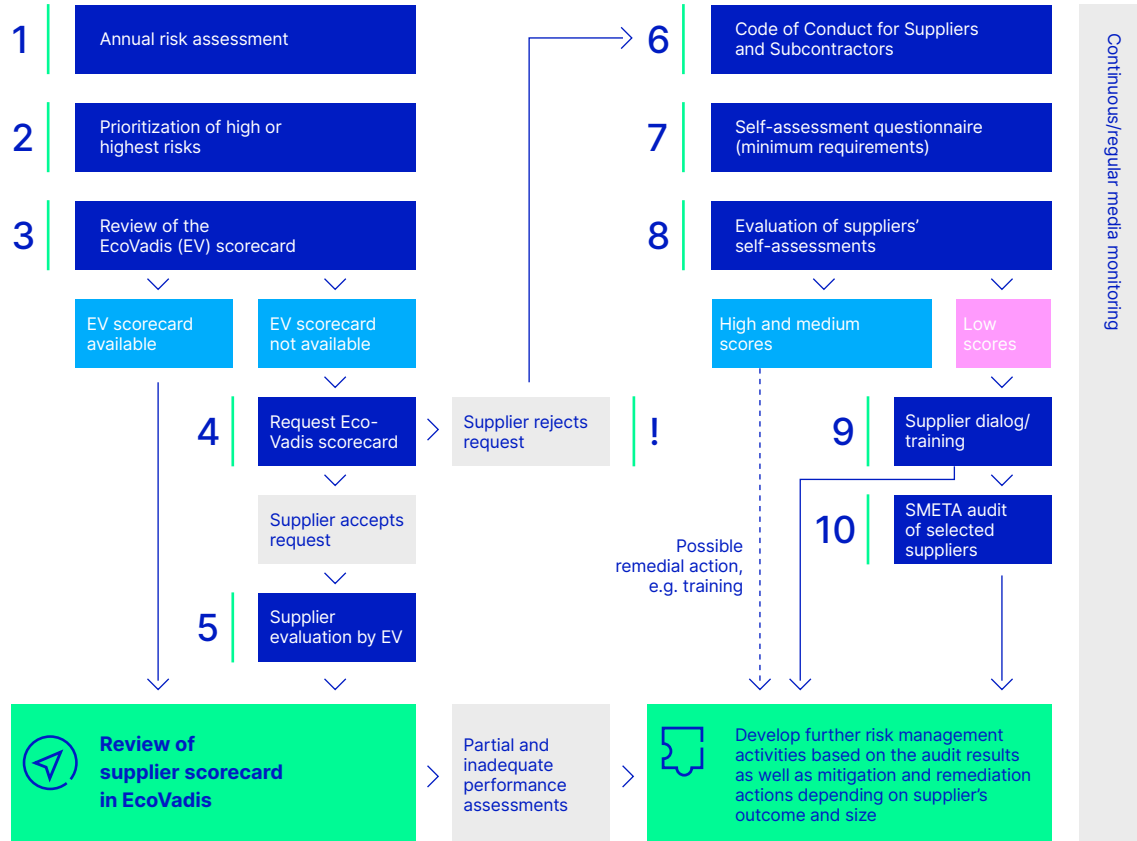
# We are committed to fair trade worldwide.

Customers, employees, investors, scientists, politicians and the general public nowadays all expect businesses to disclose the conditions under which they extract their raw materials and manufacture their products. They want to know whether the workers involved enjoy decent working conditions as well as whether any harm has been done to the environment and, ultimately, to people. In an era of globalized flows of goods and services and the exploitation of wage slaves in developing and least developed economies, the public interest is more than ever focused on how sustainable companies' organize their supply chains and whether companies are exercising human rights due diligence in accordance with the United Nations (UN) Guiding Principles on Business and Human Rights.



## Human rights due diligence – risk management for suppliers

Development of standard procedures for suppliers with focus on preventive action



Adopted twelve years ago, these Guiding Principles are intended to prevent companies from violating human rights. At the same time, they define the state's duty to protect human rights and the corporate responsibility to respect human rights in global supply chains. In Germany, the Guiding Principles have become binding since January 1, 2023, with the entry into force of the Act on Corporate Due Diligence in Supply Chains (Lieferkettensorgfaltspflichtengesetz). It is not a question of Germany seeking to enforce compliance with German social standards around the world but of ensuring respect for fundamental and internationally recognized human rights standards. In concrete terms, this means companies must guarantee that human rights are respected at every link in the supply chain.

The key aspects of due diligence include establishing a risk management system to identify, prevent or minimize the risks of human rights violations and environmental damage. The law states that preventive and remedial measures are necessary. It stipulates complaints procedures and regular reporting.

In 2022, GEA took all steps necessary to achieving full compliance with the Supply Chain Act. In doing so, we were able to build on existing company regulations. Respect for human rights is one of our company's fundamental values and is reflected in the unequivocal and binding requirements that set the benchmark not only for our own actions but also those of our business partners. In addition, we were already using sustainability-related criteria to select suppliers as well as a multi-index approach to assessing human rights risks. Yet more far-reaching measures are necessary to meet the requirements of the Supply Chain Act. That is why, in the year under review, we developed a risk management approach for the supply chain as well as for our own business operations, both of which are aligned with the requirements of the Supply Chain Act (see graphics). Additionally, sustainability criteria will be applied to selecting our suppliers in the future (see "Sustainability in the supply chain").

We expressly call upon our business partners to apply specific values and regulations regarding social responsibility to the greatest extent possible. These specific values and regulations regarding social responsibility at every link in the value chain are defined in our Code of Conduct for Suppliers and Subcontractors.

The human rights-related obligations that arise for our suppliers from the Code of Conduct are additionally derived from the following rules:

- Respect for human rights, including non-discrimination, fair wages and working hours, freedom of association as well as occupational health and safety
- Recognition of the guidance on social responsibility in accordance with ISO 26000
- Conventions of the International Labour Organization (ILO)
- UK Modern Slavery Act 2015

Added to these are obligations relating to environmental protection:

- Promotion of technologies to limit greenhouse gas emissions and water consumption as well as to foster energy-saving solutions
- Avoidance of harmful soil changes, water and air pollution, noise emissions and excessive water consumption

In the year under review, GEA adapted its Code of Conduct for Suppliers and Subcontractors to the new legal requirements in preparation for the Supply Chain Act. All current and new suppliers are required to accept the adapted Code of Conduct that applies from 2023 if the following third-party policy thresholds are exceeded: EUR 2,500 for individual orders and EUR 10,000 for longer contracts. It is part of all framework agreements with GEA and of all other contracts for the supply of goods or services to our company, which will be successively adapted to the new Code of Conduct.

#### Principle 10

Businesses should work against corruption in all its forms, including extortion and bribery.

#### Principle 9

Businesses should encourage the development and diffusion of environmentally friendly technologies.

#### Principle 8

Businesses should undertake initiatives to promote greater environmental responsibility.

#### Principle 7

Businesses should support a precautionary approach to environmental challenges.

#### Principle 6

Businesses should uphold the elimination of discrimination in respect of employment and occupation.

#### Principle 1

Businesses should support and respect the protection of internationally proclaimed human rights.

#### Principle 2

Businesses should make sure that they are not complicit in human rights abuses.

#### Principle 3

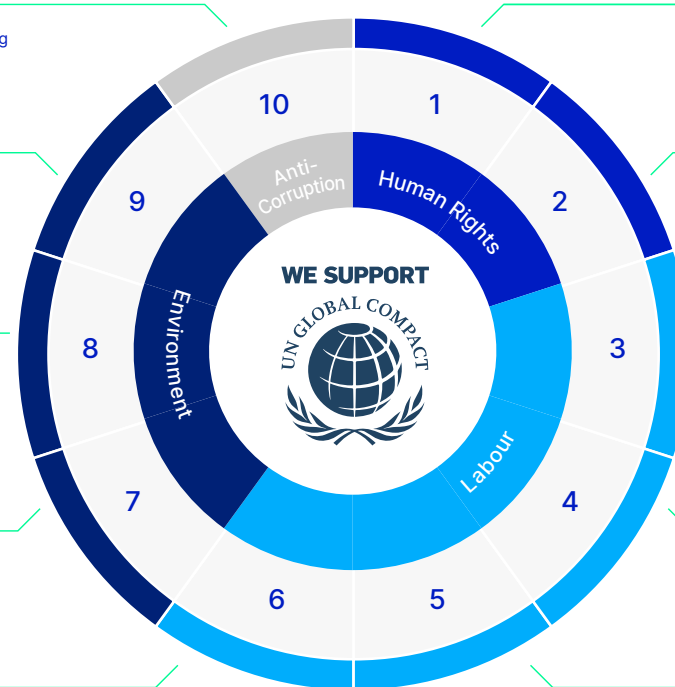
Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

#### Principle 4

Businesses should uphold the elimination of all forms of forced and compulsory labour.

#### Principle 5

Businesses should uphold the effective abolition of child labour.





*“We are working with our suppliers to foster environmental excellence and the highest social standards at every link in our supply chain.”*

Sebastian Zingsheim,  
Head of Sustainable Procurement

By signing a framework agreement or order confirmation, suppliers confirm that they have understood the contents of the Code of Conduct and will implement them within their company. The core of the Code is the commitment to ensuring human rights, environmentally sound business practices, business integrity and access to our whistleblower system. It also requires suppliers to satisfy broader sustainability expectations such as recognizing the guidance on social responsibility (ISO 26000), taking a holistic approach to product life cycles from design to recycling, obtaining certification to ISO 14001, protecting natural resources, reducing water consumption and greenhouse gas emissions and ensuring the environmentally friendly design of production and procurement processes. Major suppliers of the individual local purchasing companies are visited by GEA annually and are regularly subjected to an environmental assessment.

#### **Risk analysis and risk management**

Up to the end of 2021, the annual assessment of human rights risks within the supply chain was analyzed annually on the basis of a multi-index approach using factors from Freedom House (a U.S. nongovernmental organization), the Heritage Foundation, the Wall Street Journal, Reporters Without Borders and the Economist Intelligence Unit (EIU) to identify purchasing volumes from countries with an increased human rights risk. Correspondingly, purchasing volumes from countries with human rights risks were reported in the past, amounting to 8 percent of our total purchasing volume in 2021.

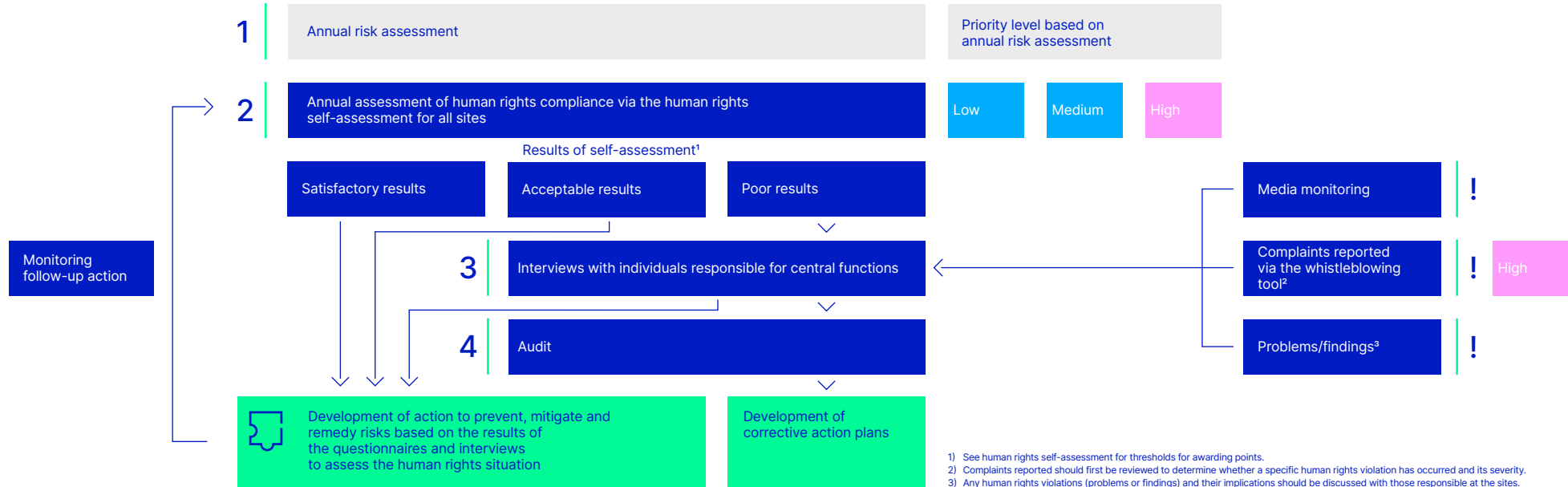
In line with the requirements of Germany's Supply Chain Act, we have replaced this approach and have developed our own method for the annual assessment of human rights and environmental risks across the entire supply chain. This method is applied in combination with our Code of Conduct. The new method assesses risks down to the individual sup-

plier level and, in a first step, has been applied to all of our direct suppliers. If there is substantiated evidence of possible human rights violations, it will also be extended to our suppliers' suppliers.

To this end, supplier risk was assessed on the basis of the World Bank's Worldwide Governance Indicators (WGI) for our suppliers' relevant countries of origin and of various International Labour Organization (ILO) indicators for suppliers' respective industries. In the next step, the resulting risk was assessed and prioritized according to the severity of a potential human rights violation, its reversibility and GEA's influence on the respective supplier based on its purchasing volume.

## Human rights due diligence – risk management in operations

Development of standard procedures for own sites with focus on preventive action



To minimize the risk of human rights violations, we have drawn up even more stringent rules for suppliers with a heightened risk profile. In line with our risk management process, we request detailed information from these suppliers about their measures to protect human rights and the environment as well as their social responsibility activities. Our analysis has shown that only around 0.5 percent of our purchasing volume is transacted with suppliers assigned to

the group with the highest potential human rights and environmental risks. In a next step, these suppliers are asked about their existing protective and preventive action. Based on their responses, we follow up with human rights training and an externally certified verification process for sustainable and ethical conduct in business relationships. Depending on a supplier's performance, the risk management approach also includes implementing audits and cor-

rective action plans as well as developing further prevention, mitigation and remediation measures (see "Human Rights Due Diligence – Risk Management for Suppliers" graphic).

GEA has put in place a management process in order to avoid and, if necessary, minimize the risk of human rights violations in the supply chain and in its own operations. To this end, we have assigned all of our

business activities in more than 60 countries to four categories and performed a risk assessment which combines the probability of occurrence with the consequences of a possible human rights violation. The probability rating results from the supplier's industry and the country in which this activity is being conducted, while the impact assessment considers the severity and extent of a potential incident and whether it is reversible. This risk assessment has

been performed for all local business units. As a global group, GEA is active in countries with an increased risk of human rights violations. The sites in those countries are the subject of a gross risk analysis. They are asked about their preventive and mitigation action in order to arrive at a net risk assessment. This in turn serves as the basis for initiating any further steps which might be necessary, such as a SMETA audit performed by an external certifier.

In addition, from 2023 onward, all sites will be required to complete a human rights self-assessment as part of the existing compliance evaluation. Depending on the results of this assessment, further discussions will be held with the persons responsible for human rights at the affected site. If necessary, preventive and remedial action will be determined and its effectiveness reviewed on a regular basis. At the same time, GEA reserves the right to require audits by external certifiers. The preventive action planned for 2023 includes mandatory group-wide

training for all employees and internal information campaigns. Additionally, the reporting process for potential incidents is being refined (see “Human rights due diligence – risk management in operations” graphic).

Using the new risk management approach for both our supply chain and our own businesses, we analyze aspects such as possible violations of the prohibition of child labor, forced labor and human trafficking, the applicable safeguards for young workers, the prohibition of discrimination, occupational health and safety as well as freedom of association. Our risk assessment also addresses environmental issues such as the ban on the use of mercury and other persistent organic pollutants. The processes following a reported incident are governed by a new guideline for dealing with human rights violations.



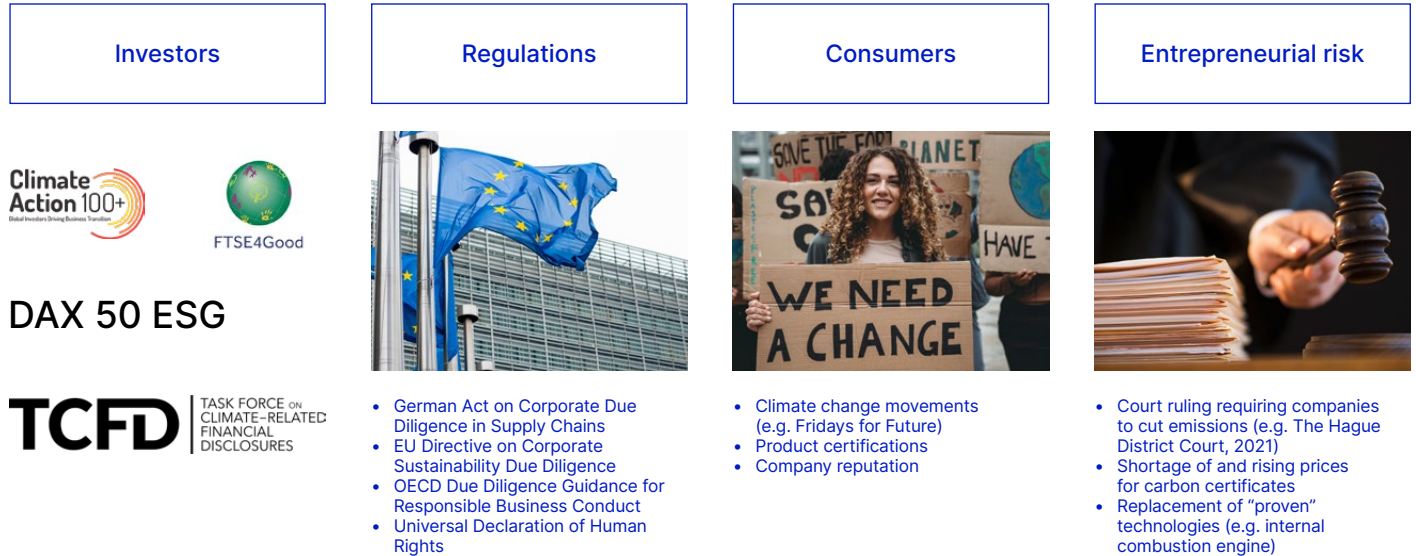
## 2023

In addition, from 2023 onward, all sites will be required to complete a human rights self-assessment as part of the existing compliance evaluation.



## Significance of sustainability in procurement

Increasingly stringent requirements from several directions



### Sustainability in the supply chain

As a technology group with a high level of materials expertise, GEA is aware of its responsibility and sources raw materials, commodities and services worldwide exclusively from verifiably qualified suppliers. Responsible raw material extraction and sustainably produced upstream goods enable us to minimize raw material risks and ensure supply reliability. We are convinced that responsible procurement enhances the company’s reputation, its attractiveness as an employer and ultimately its own profitability. At the same time, particular attention is paid to respect for human rights in the supply chain.

In 2022, GEA established a group-wide team to specify the requirements and targets of the “Mission 26” group strategy for sustainability in purchasing and to manage the individual initiatives to achieve them. Its activities include managing and coordinating the introduction of our sustainability criteria for suppliers, managing and monitoring emission reductions in the supply chain and enhancing knowledge of sustainability within the procurement organization. Most importantly, the team has drafted guidelines on the basis of the Supply Chain Act and coordinated their rollout to the company’s procurement organization.

We have ambitious goals for safeguarding and improving sustainability in our supply chain. In accordance with our “Mission 26” strategy, all preferred suppliers have until 2026 to fully satisfy the sustainability criteria defined in the reporting year.

GEA’s preferred suppliers are those that have been identified from the outset as being strategically important and critical to the company’s operations and benefit from special advantages in the award of contracts. For example, we automatically consider them in suitable requests for tender, enter into strategic innovation development partnerships with

them, draw up development plans specially tailored to them and support them in internal or external advertising campaigns. We presented the revised criteria for preferred suppliers at the 2022 Supplier Summit (see also page 79). Prior to this, the initial selection was made by the global product group organization. To retain their status, suppliers must demonstrate their strategic importance to GEA:

- Market leadership in the respective segment (for instance, market share or technology)
- The best financial terms and conditions (for example, price or payment terms)
- Evidence of exceptional delivery performance (for instance, quality, delivery time or fulfillment)
- Potential for the continuous improvement of processes or products
- Compliance with our sustainability criteria

**In 2023, GEA will review the rollout and implementation of the following four new sustainability criteria on a monthly basis:**

1. Suppliers must accept our Code of Conduct for Suppliers and Subcontractors. This describes the minimum requirements specified by GEA for its suppliers in respect of human rights, fair working conditions, environmental protection, anticorruption and the fight against financial crime.
2. GEA expects its suppliers to undergo a sustainability assessment each year and to share the results with us. The assessment is performed by the external rating organization EcoVadis which processes the findings obtained in a survey and makes them available to GEA. This transparency enables us to select and develop suppliers on the basis of their sustainability performance.
3. Suppliers must set a science-based target for reducing greenhouse gas emissions that is consistent with the 1.5°C target under the 2015 Paris Climate Agreement and endorsed by the Science Based Target initiative (SBTi). Specifically, we expect suppliers to submit a declaration of intent to SBTi stating that they will define a target for 2030 (mid-term target).
4. To enable us to perform life cycle analyses, we expect our suppliers to provide us with their greenhouse gas emissions data for those products and services shown by their own analyses to be the main drivers of emissions in the supply chain.

Alongside acceptance of our Code of Conduct, the outcome of the sustainability assessment influences supplier selection. Each year, EcoVadis sends suppliers an extensive questionnaire on the topics of labor and human rights, environment, ethics and sustainable procurement. The respective results are compiled in a comprehensive scorecard. In the year under review, this assessment had already been carried out for 68 percent of the purchasing volume accounted for by preferred suppliers and the results made available to GEA.







299

suppliers were audited and assessed in 2022, 103 for the first time.

This means that – in addition to payment terms, the supplier’s financial situation, quality as well as delivery terms and conditions – a supplier’s sustainability rating is also a crucial factor in the awarding of contracts. If deficiencies are identified, for instance, in human rights standards or environmental protection, GEA unequivocally demands that improvements be made. These are reviewed by EcoVadis. GEA additionally conducts on-site audits of selected suppliers at regular intervals. Given the gradual decline in the COVID-19 pandemic, the number of supplier audits and reviews increased again in 2022 to 299 – up from 165 the previous year. Of these, 103 (2021: 23) were audits of new suppliers. Concrete measures for improvement were defined in 98 of the audits, the implementation of which will be tracked over an agreed period of time. GEA evaluates this by visiting suppliers and through audits which extend beyond standard self-assessments. These audits are performed by the product group managers for the procurement organization, country organizations and divisions.

The four requirements and criteria mentioned above are a central pillar of the company’s sustainable procurement strategy and were presented to our suppliers at the GEA Supplier Summit in 2022 (see also page 79). In addition, a publicly accessible online area was set up specially for our suppliers in the reporting year, providing them with information on all topics of relevance to them. Further details of the aforementioned sustainability requirements are also available there.

At the same time, we have either launched or joined other strategic sustainability initiatives with a number of global suppliers. For instance, GEA joined the Energy Efficiency Movement in 2022. The aim of this initiative started by ABB, one of our automation technology suppliers, is to connect companies committed to more energy-efficient, renewable and adaptable industrial solutions, enabling them to leverage synergies and harness potential. Resultant joint projects are geared to reducing energy consumption and greenhouse gas emissions.

GEA’s workforce is also to be made aware of and receive training on sustainability in the supply chain. In the year under review, for instance, the team for sustainable procurement briefed all product group and procurement organization managers on the new sustainability criteria. In this connection, responsibility for implementing sustainability matters, such as the rollout of sustainability criteria for suppliers, was likewise transferred to the procurement organization. There are plans for further training in 2023 going beyond the global procurement organization to potentially include local or regional buyers. This could be expanded to include individual suppliers. The main topics of this training will be human rights as well as social and environmental factors at every link in the supply chain.



### Sustainable procurement

The procurement of materials accounts for more than half of GEA's group revenues. For our manufacturing operations, we purchase raw materials, semi-finished and intermediate products as well as notably components that are not based on our own core technologies. We also buy in plant components for the construction and delivery of process solutions for various applications and outsource work such as construction site and installation services to subcontractors. In the case of steel construction projects, the steel itself is often included in the subcontracting scope.

Firstly, this means that procurement has considerable economic significance for profitability. Secondly, the strong relevance of material procurement highlights GEA's substantial influence on the ethical and environmental aspects of the supply chain. We aim to leverage this influence even more in the future so we can further increase the sustainability of our supply chains. Here, we will be focusing our activities in 2023 more intensively on the circular economy and decarbonization. Product design

teams will be supported in considering the emissions reduction aspect when it comes to product emissions in materials procurement, production, transportation, use by the customer and possible recovery and reuse or disposal. This means that the design process must allow for circular strategies aimed at extending product life cycles. At the same time, Procurement will develop strategies to purchase suitable raw materials and semi-finished products with the smallest possible carbon footprint.

To achieve the goals set out in our climate strategy, we need to develop an in-depth understanding of key procurement megatrends. At a time when global supply chains are increasingly vulnerable due to unpredictable events and disruptions can result in losses, this is becoming more complex. In addition, consumers, governments and other stakeholders are increasingly demanding product traceability and transparent reporting along the supply chain. Mindful of this, we continually seek to pool resources and make an impact in those areas that matter most to our

company and its stakeholders. Not least for this reason, sustainability was the main topic at the GEA Supplier Summit in September 2022. During that event, we presented our sustainable procurement strategy, which calls on our suppliers to commit to supporting us in attaining our social and climate targets (see also page 79).

With the climate targets formulated as part of our climate strategy, we are demonstrating our firm commitment to achieving net-zero greenhouse gas emissions along our value chain by 2040. Supply chain emissions (Scope 3, upstream) are to be reduced by 18 percent by 2030 compared with the base year 2019. Alongside our efforts to produce responsibly, we are committed to making the greatest possible contribution to the United Nations Sustainable Development Goals (SDGs) by defining and increasingly applying sustainability criteria in the selection, evaluation and development of our suppliers.



# 100%

In order to reduce the consumption of fossil raw materials as an energy source, we already purchase 100 percent green electricity today.

### Quantifying ecological impacts in the supply chain

Each year, GEA analyzes sustainability impacts along the group's supply chain. This analysis includes the greenhouse gas and other air emissions, water consumption and waste generated by our suppliers and upstream suppliers, as well as workdays lost due to work-related accidents. This makes it possible to identify the hotspots of selected sustainability risks in the supply chain and work with suppliers to minimize or eliminate them. The impacts indirectly attributable to GEA were calculated on the basis of our procurement volumes broken down by procurement sectors and regions. The data was collected in 2022.

Moreover, in the year under review, we began requesting information directly from suppliers concerning the aforementioned impacts and the preventive measures they have taken as part of the annual sustainability assessment. Regarding water consumption, for example, they were asked whether control measures have been introduced to protect groundwater from contamination, whether water consumption can be successively reduced through the use of efficient equipment and whether waste water treatment measures are applied. The assessment also asks for a supplier's total annual water consumption. Suppliers' air emissions data is retrieved in a similar way. This practice is to be extended in 2023.

Greenhouse gas emissions from the procurement and transportation of commodities, services and capital goods have been found to be 41 times higher than those from GEA's own business activities (Scope 1) and from the use of purchased energy (Scope 2). This highlights the major impact of our procurement activities on the group's greenhouse gas emissions. In consequence, we determined the procured commodities, services and capital goods responsible for the largest share of these emissions in the reporting year. As described, we will be developing decarbonization strategies in 2023 for the procurement of these product groups in order to reduce future emissions.

When we analyzed water consumption and waste generation along the value chain, we found a comparable pattern of sustainability impacts. Here, too, the supply chain impacts we identified exceed the effects resulting from our own business activities. The biggest drivers of waste and water consumption in the supply chain are the extraction of fossil fuels for electricity generation as well as the manufacture of machinery and components used in our own production activities. In order to reduce the consumption of fossil raw materials as an energy source, we already purchase 100 percent green electricity today.

### Conflict minerals

Minerals and metals are indispensable in the manufacture of many products and components. However, the mining, trade and transportation of mineral ores and metals may have extremely negative impacts. Tin, tungsten, tantalum and gold, also known as 3TG or conflict minerals, are of particular relevance. In the past, many armed conflicts and the associated human rights violations were financed directly or indirectly through the extraction, trade, control and export of these minerals.

GEA procures only very limited amounts of conflict minerals. In our Code of Conduct for Suppliers and Subcontractors, we commit to purchasing components and materials solely from those suppliers who fully share our values with regard to the respect for human rights, integrity and environmental responsibility.

Our Conflict Minerals Policy is consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, general global fair trade policy, the Ten Principles of the United Nations Global Compact and the ILO core labor standards. GEA has also conducted due diligence in accordance with the OECD

Due Diligence Guidance and asked our 71 suppliers with the highest revenues to report their sources of conflict minerals using the recognized CMRT (Conflict Minerals Reporting Template) (see also the “Compliance and governance” chapter starting on page 124). These suppliers are likewise required to do the same with their own suppliers to ensure full transparency at every link in the supply chain.

In 2023, GEA will expand this process and develop a risk-based risk management approach that builds on the results of the due diligence process. The aim is to reduce or eliminate any risks identified at the individual supplier level and to determine alternative sources of supply.



# 71

GEA's 71 top suppliers in terms of revenue are asked to report the sources of their conflict minerals.



### Supply chain management

In the year under review, GEA's supply chain management was primarily influenced by the war in Ukraine. The high priority given to this issue is underscored by the fact that we are making great efforts to increase the sustainability of our supply chains despite the unpredictable situation.

Although the procurement and supply chain organization has a more global focus on GEA's supply chain, the local business units continue to act largely autonomously. By appointing one person to be responsible for the global supply chain, processes have been standardized and can be optimized more holistically in respect of emissions. In this way, we are aligning these processes with the group-wide sustainability strategy in order to achieve the goals set out in "Mission 26" and our climate strategy. This is because our transportation activities are the third-largest source of the group's Scope 3 greenhouse gas emissions (upstream, see also page 147).

Our supply chain management operates on three levels: divisions, regions and the multifunctional sites that serve more than one division. In 2022, around 700 GEA employees with a wide range of qualifications and working in different areas of the company – from warehousing employees to managers with regional responsibility for several sites – performed supply chain tasks. All supply chain management tasks can be assigned to the following areas: planning and scheduling, materials management, warehousing and distribution, transportation and customs clearance and the Supply Chain Excellence – Analytics & Projects department.

Monitoring has been strengthened to facilitate shorter response times and prevent supply chain failures. In addition, safety stock levels have been increased, local sourcing prioritized and greater specification flexibility ensured.

In 2022, procurement at GEA accounted for almost EUR 3.1 billion out of revenues totaling EUR 5.2 billion. It is structured in such a way that product groups can be managed strategically on a global scale. Operational procurement acts locally and is responsible for implementation.



# 3.1

In 2022, procurement at GEA accounted for almost EUR 3.1 billion out of revenues totaling EUR 5.2 billion.



### Transportation and logistics

Wherever possible, GEA applies the “Local for Local” principle to ensure shorter and hence more sustainable delivery routes with fewer emissions. At the same time, we are indirectly supporting the local economy in the vicinity of our own sites. Yet our “Local for Local” principle also ensures that transportation and logistics account for only a small proportion of our procurement volume. Which means of transportation are used depends on various factors. In the context of our efforts to further minimize our carbon footprint, the aim is to reduce the number of transportation operations to the bare minimum. A GEA air cargo policy specifies that divisions must obtain approval for air cargo shipments. In principle, shipment by sea should be given preference because of its more favorable carbon footprint. Since 2022, logistics service providers have been required to determine the carbon footprint of air transports and to report this to GEA. In addition, any request for proposal from a new supplier includes the condition that they must share their transportation data with GEA.

In 2023, we are introducing a global transportation management system as part of our “Mission 26” strategy. This will not only change the way transportation operations are planned and carried out in the future. It will also define the carbon footprint as an additional criterion for choosing the best possible route.



### Distribution of transport volume in the year under review

(in %)

12

Courier services

26

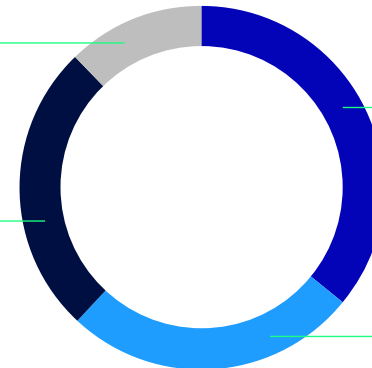
Sea freight

36

Road transport

26

Air freight



## Community engagement

# Community engagement at GEA.

As a multinational company and major local employer, GEA has the ability and the determination to contribute to a better world. That is why we encourage community engagement by our local business units and our employees. We also foster their active commitment with the goal of deploying our knowledge and core expertise to create sustainable value in respect of socially relevant issues.

To underscore its corporate purpose of “Engineering for a better world”, GEA has set itself the following goals:

- Share industry und function-specific knowledge with 100,000 people via voluntary work by 2026
- Donate one percent of the company's profit each year

GEA has more than 200 sites worldwide, with the neighboring towns and communities forming the cornerstone of the respective production and sales operations. That is why we support projects and initiatives committed to charitable causes local to our sites as well as across the globe. Social responsibility is managed strategically by the Sustainability department in accordance with GEA's new Community Engagement Policy. In addition, all sites and subsidiaries are required to act on their own initiative.





*“We are delighted to have given community engagement at GEA a clear-cut direction as well as to be contributing in this way to issues we consider important.”*

Franziska Willemsen,  
Project Manager Sustainability

This strategy, which applies to all local business units worldwide, is aimed at encouraging even more GEA employees to get involved in social engagement activities.

We foster community engagement in the following areas:

- Acute disaster relief and aid for exceptional events
- Support for education, especially in IT, science, technology, engineering and mathematics (STEM)
- Combating child poverty
- Promoting access to clean water, renewable energy and medical care

Community engagement can be fostered in the following ways:

- Donations from GEA
- Knowledge-based volunteering by employees

With our new concept of skill-based volunteering, we aim to reach 100,000 people by 2026. Starting in 2023, all GEA employees will be able to use one paid day for voluntary work each year. In addition, GEA has set itself the target of donating at least one percent of the group's net-profit per year.

In 2022, GEA's donations totaled EUR 1,346,967, which represents 36 percent target attainment.

From 2023, the company will systematically survey the number of people who benefit in order to accurately measure the effectiveness of its activities and attainment of the goals set.



The largest donations were made to the following organizations:

Viva con Agua	EUR 250,000
BILD hilft e.V. “Ein Herz für Kinder”	EUR 250,000
German Red Cross	EUR 125,000*

\*) GEA doubled the amount donated by employees.





### Sharing knowledge

A great example of the voluntary transfer of knowledge is the information campaign on climate-friendly food production launched in March 2022. Bannered "Rolling out Innovations", the Heating & Refrigeration Technologies (HRT) Division sent a truck filled with innovative heating and cooling solutions on a year-long tour of Europe. So far, the campaign can be considered a resounding success. At the first stop in Berlin alone, around 700 students visited the "rolling HRT showcase". Once it arrives at its destination, the vehicle literally "unfolds" into a 70-square-meter venue where the various heating and refrigeration technologies are displayed and explained in a clear and informative way on a number of screens. GEA heat pumps set high standards of sustainability worldwide and are benchmarks for the industry. Another special feature of the truck is the option to take a virtual tour of a brewery and a refrigeration plant.

Anne-Laure Brault, Head of BU Frozen Food at GEA Canada, has displayed engagement in a completely different area of knowledge transfer. She volunteers as a mentor for people aiming to start a new career or their own business. Mentees must apply for the program and take an aptitude test. Brault began mentoring in May 2022. She aims to help her mentees with analyses and, by asking the right questions, encourage them to think about what they are doing so they understand the implications of their decisions. The long-serving GEA employee chose to volunteer for the challenging mentoring program not only because she likes to help others but also because she wants to see an idea take concrete shape and flourish into a successful undertaking. In her view, it is great to be able to give back some of what she herself has received and learned during her career.

*"Young people are the future, as the saying goes. GEA supports me in sharing my knowledge of refrigeration technology and heat pumps with them. I do that by teaching at a school in the evenings. What do I get out of it? A lot of fun, new insights and the joy of piquing young people's interest in this wonderful technology."*

Maarten Gelens, Sales Manager  
Heating & Refrigeration Solutions



### Toys for children in Ukraine

A team from the Legal department at GEA brought joy to children in Ukraine with a gift drive over the festive season. All employees at GEA's German sites in Düsseldorf, Essen, Duisburg, Hürth, Bönen and Oelde were asked to donate toys for children up to the age of 14. The response was enormous. A total of 56 boxes filled with toys and teddies began their journey to Ukrainian cities including Kherson and Kremenchuk. Forty boxes came from Düsseldorf and the surrounding area alone. Donations included larger items such as a child's bicycle, a ride-on car and a doll's house. The sites in Düsseldorf, Hürth, Oelde and Osnabrück contributed especially to the campaign. Of course, in keeping with our commitment to sustainability, the toys did not have to be purchased new. Transportation was provided by aid organization "Einfach Machen Köln!" (Just Do It Cologne!), which took our toy donations and other aid to Ukraine in time for the holidays.

### Aid for victims of the war in Ukraine

In April 2022, GEA and its workforce donated EUR 250,000 to the German Red Cross for victims of the war in Ukraine. Employees from 42 countries raised EUR 125,000 in a global fundraising campaign involving local business units on four continents – and GEA doubled this amount.

"Every day, we are confronted with shocking images and news reports. Our thoughts go out to all those affected by this war," says GEA CEO Stefan Klebert. "That is why we launched this fundraiser. With this donation, we are helping the German Red Cross and its volunteers to provide urgently needed humanitarian aid to Ukraine." Hans Schwarz, President of the German Red Cross North Rhine Association, expressly thanked GEA and all employees for their generous donation: "Your actions are a shining example of solidarity and human empathy." The

*"My fellow Executive Board members and I are deeply moved to see how generously our employees around the world have given."*

Stefan Klebert, CEO

money will be used to source urgently needed medication, food, hygiene products and donations in kind for distribution on the ground.

In addition to this centrally coordinated fundraising campaign, GEA's local business units and divisions launched other relief efforts. GEA Farm Technologies lent a hand to Ukrainian agricultural businesses with hygiene products needed to clean dairy farms on a daily basis. GEA Poland supported a local organization providing care for Ukrainian refugees. GEA Netherlands worked with a partner to donate canned food to Ukraine. And GEA paid for packaging materials and transportation so that donations in kind collected by employees at the Berlin site could be delivered to various aid organizations.



### Community Engagement Day in Düsseldorf

In December, GEA hosted its first Community Engagement Day at its Düsseldorf site. During the event, any employee was able to register with the DKMS to become a potential stem cell donor and life-saver. GEA provided the registration kits and returned them to DKMS. The Compliance & Principle Legal Matters team ran a cake sale to raise funds for the reforestation of Duisburg's woodlands. One presentation focused on the "purposed" platform which helps identify suitable social projects for volunteering. The platform's proposals are based on employees' individual interests and skills as well as on GEA's volunteering criteria. Last but not least, there were various information sessions. For example, aid organization Viva con Agua reported on the drinking water production project in Tanzania which is co-financed by GEA (see also page 62).

**We are not only passionate about technology that improves the world. We are also committed to helping children. Our donation to "Ein Herz für Kinder" made an important contribution to ensuring equal opportunities for children.**

### Our donation to "Ein Herz für Kinder"

GEA donated EUR 250,000 to the telethon organized by "Ein Herz für Kinder" (A Heart for Children). The decisive factor in a donation of this size is that the projects supported by the international aid organization are aimed at areas such as education and research. "We are delighted to make a donation that supports the work of 'Ein Herz für Kinder' in Germany and around the world," says Dr. Nadine Sterley, Chief Sustainability Officer at GEA. "We know that education ensures equal opportunities. That is why we feel it is important to foster this equality for the youngest in society, especially in situations where children and families need financial support." German aid organization BILD hilft e. V. "Ein Herz für Kinder" has been helping children in need worldwide since 1978. To date, it has collected donations of more than EUR 436 million for over 24,000 projects that have helped millions of children.

# PEOPLE

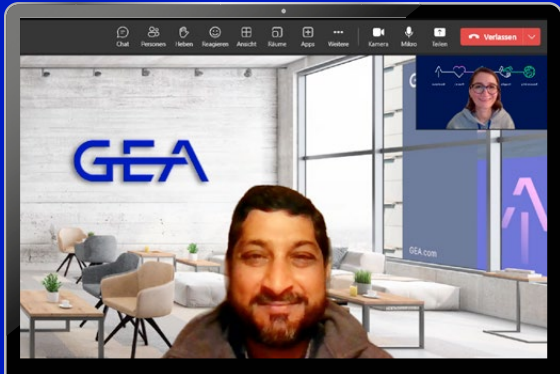


People

# SEEING DIVERSITY AS OPPORTUNITY

If we want to sustain the success of the economy and society going forward, we must not only recognize but also foster and above all harness human diversity. This applies both to the diversity of our employees and to the diverse needs of our customers, suppliers and other stakeholders. The diversity of a workforce with all its different skills and talents opens up opportunities for innovative and creative solutions.





*"I am very excited about the launch of Cultural Coffee at GEA. It gives coworkers throughout the company and around the world the opportunity to meet. And it's a way to show them that we prioritize creating an open culture at GEA. While it may seem relatively trivial, having a virtual cup of coffee with a new coworker creates positive connections."*

Ulrich Braig, Chief Human Resources Officer



As part of its "Mission 26" group strategy, GEA is seeking to strengthen its diversity and integration activities. The Cultural Coffee initiative aims to enhance and support the company's effectiveness through cross-border and cross-functional interactions. GEA employs more than 18,000 people in 62 countries – a huge pool of diversity that is our capital. Cultural Coffee is a unique opportunity to meet employees from all over the GEA world, build company-wide networks and get to know other cultures. It is a 20-minute virtual coffee break that enables employees to broaden their horizons and have a relaxed conversation with a randomly assigned coworker.

The initiative's slogan is "Meet the people driving GEA". According to Birgit Lechelmaier, Senior Director People & Talent Development at Human Resources, this is exactly what the coworkers who sign up will

experience – the chance to meet and chat regularly with a wide variety of people who drive GEA's success.

"It's about expanding your own network and horizons over a cup of coffee or tea," says Lechelmaier. "I would like to encourage everyone to take this opportunity to spend 20 minutes getting to know a new coworker and learning about their culture, background, hobbies, job and responsibilities – you choose what you want to talk about."

Participation is free and very easy. Employees just sign up and indicate how often they would like to participate in a conversation. The Cultural Coffee program draws each pair of coworkers randomly and sends both an invitation. A brief guideline providing tips for the conversation can be downloaded from the GEA intranet.



# 21%

As part of “Mission 26”, we have set ourselves the target of filling at least 21 percent of the positions in the top three management levels with women by 2026.

### Achieving goals with Lean In

Another aspect of GEA's strategy to improve diversity and integration is the establishment of a women's network. It is important that we provide a safe, inclusive and progressive workplace for all of our female employees. As part of “Mission 26”, we have set ourselves the target of filling at least 21 percent of the positions in the top three management levels with women by 2026 (2022: 18.6 percent).

An equal world in which all women can achieve their goals – that is the mission of Lean In. Founded by former Facebook director Sheryl Sandberg, the non-

profit organization is dedicated to helping women realize their goals and creating equality in the workplace. An important part of the Lean In concept are the Lean In Circles. Comprising up to twelve women, these groups serve to build a female network that empowers its members to support each other and assume leadership roles at their companies. At GEA, however, this network is not limited to existing and potential managers. Instead, it is intended to support all women at our company.



The Lean In concept is an ideal way to achieve this. According to a Lean In survey, 85 percent of members experienced a positive change through their Circle and nearly two-thirds of women have taken on a new challenge. That is why GEA chose this concept.

The Circles meet once a month and their members support each other in learning new skills through dialog and sharing experiences. The aim is to identify new opportunities, build connections with other Circle members and encourage women to become more

confident and improve their leadership skills. Meetings can take place anywhere – over a coffee at home, during lunch at work or virtually with people who have similar interests – and in any language. More than 400 women at GEA have already registered and established 39 Circles. At the same time, the Lean In network makes it possible to connect with other groups outside the company. Over 50,000 women in more than 180 countries have created Lean In Circles.



### **Mentoring program for women at GEA**

At GEA, a mentoring program has been set up to foster the further development of women. Starting in the fall of 2022, this involved pairing 20 female executives with 20 female mentees. The aim is to support the development of female candidates in a one-year program, starting with a pilot program for female employees from the Chief Operating Officer's departments and the Liquid & Powder Technologies Division.

"If you really want to advance your career, one of the most effective things you can do is find a seasoned mentor interested in sharing their own experiences and giving you their time and resources to support your personal development," says GEA's talent developer Birgit Lechelmaier. "What's more, you benefit from your mentor's network. So building your relationships within the company and networking are truly the key to your development and career success."

To start things off, 20 female mentors from across the group were paired with 20 female mentees from various departments which report to the Chief Operating Officer (Corporate Responsibility, Engineering Excellence, Procurement, Global Production, QHSE,

Corporate Real Estate, Supply Chain and Transformation Management Office, TMO) and the Liquid & Powder Technologies Division (LPT). The program runs for one year before a new group of women at GEA will be given the chance to be matched with mentors.

"The mentoring process has three phases: initiation, growth, and dissolution and redefinition," explains Lechelmaier. "The initiation phase is when mentor and mentee reach agreements and get to know each other. The growth phase consists of structured conversations about the steps needed to achieve the goals set. The dissolution and redefinition phase involves joint preparation for bringing the mentor-mentee relationship to a close."

While the mentors and mentees for the current program have already been selected, a global mentoring initiative for women and men is being planned for next year.



People

# Knowledge and diversity make the difference.

A company owes its success first and foremost to the performance of its employees. At GEA, too, our business success relies on the expertise and commitment of our more than 18,000 employees worldwide. Each individual personally contributes to the bottom line through their daily work and helps us become a little better every day.





Diversity and equal opportunities are not just core values for GEA as a global group, but are essential to our long-term success in the face of international competition. That is why we have set specific and quantifiable targets for our Human Resources department as part of our “Mission 26” group strategy. One of our goals is for 80 percent of employees to agree with the statement that they would recommend GEA to others as a good employer by 2026. Analysis of the 2021 employee survey that is relevant to the reporting period showed that this figure stands at 75 percent. We are also committed to making good progress with regard to gender equality. Our goal is to fill 21 percent of positions in the three upper management levels with women by 2026. Currently, that figure is 18.6 percent. GEA remains committed to respecting human rights as well as the generally accepted core labor standards of the International Labour Organization.

All of these goals are intended to consistently improve GEA's appeal as an employer and to cement our status on the labor market as an attractive employer. This does not affect our firm commitment to a culture of honesty, sincerity and loyalty. In 2022, we increased our support for individual employee training and continuing education opportunities as well as for achieving personal career goals within the company. We also maintain a work environment that prioritizes occupational health and safety, with responsibility shared between all those involved.

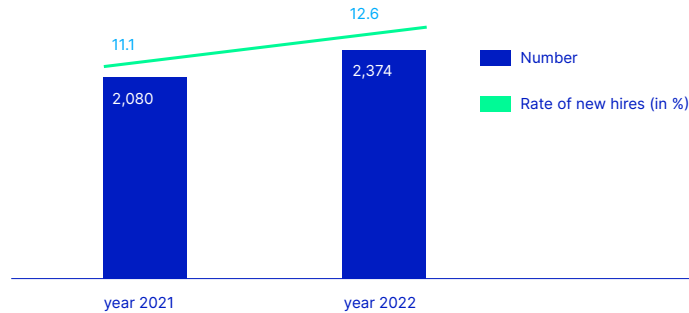
### **Human resource management**

GEA employees are the backbone of our company. This is why it is in our own best interest to ensure that the Human Resources (HR) department is optimally positioned for the future, given the skilled labor shortage, and that its managers have all the relevant expertise and support they need for their work.

Human Resources is closely involved in the operating business through the HR Business Partners organization. HR is a global corporate center and reports directly to the CEO who is also Chief Human Resources Officer. The latter is the only corporate function with a permanent seat on the Global Executive Committee in which the Executive Board members regularly meet with the divisional and regional managers to discuss and take decisions on fundamental GEA issues.

Offering support to divisional and regional managers, the HR business partners are available to answer any questions related to human resource management. The internal HR operations teams at the Berlin and Kuala Lumpur sites provide state-of-the-art HR support services. In addition, the Centers of Expertise – including Labor Relations/Labor Law, People & Talent Development and Total Rewards & Mobility – develop new ideas for how to establish GEA as an employer of choice over the long term.

## Total number and rate of new hires



## Employment

The search for diverse and qualified employees is becoming increasingly challenging, above all due to demographic change and the fierce competition for talent on the labor market. Retaining employees over the long term is an important focus for GEA as a sustainable company. To make sure we are viewed as an attractive employer on the labor market as well as to secure the company's future viability, we attach utmost importance to a corporate culture that fosters diversity, equality and inclusion. Additionally, as part of "Mission 26", we actively encourage all employees to obtain specific further training and to achieve their medium- and long-term career goals.

Two talent acquisition teams within HR are tasked with searching for talent more effectively. The goal of these teams of experts is to source the market to find and recruit the right talent using the latest methods such as active sourcing. At the same time, they advise GEA managers and HR business partners on how to find the best and most successful hiring solution on a case-by-case basis. The talent acquisition teams also establish external talent pools through the company's careers page

and relevant career portals. These platforms are used to cultivate ongoing contact with external candidates in order to improve the applicant experience.

We have additionally introduced a referral bonus for our employees at various sites, as we know they are our best and most authentic ambassadors. We hired a total of 2,374 new employees worldwide in 2022 (2021: 2,080). The total number of new hires as a percentage of the average headcount increased from 11.1 percent to 12.6 percent as of December 31, 2022.



## GEA named top employer in Germany

GEA Group has been named a top employer for the first time. Each year, the Top Employers Institute honors those companies which provide an outstanding working environment for their employees in which to develop. The award is given solely to companies which place their employees at the heart of their business activities. "We are honored and delighted to receive the top employer award. It brings us one step closer to our goal of becoming the most attractive employer in the engineering industry," says Ulrich Braig, Chief Human Resources Officer. "Our actions are founded on the values of responsibility, integrity, diversity, passion and excellence. We also offer our employees the opportunity to continuously develop and advance their careers through programs such as the Talent Pipeline, High Potential Pools or training in a wide range of areas. This is because it is important for us to retain our employees over the long term as well as to fill vacancies with the best talents."

### How employees rate GEA

Each year, GEA conducts a group-wide employee survey. The overriding objective is to maintain a culture of dialog and communication, to actively involve the workforce in the company's development and to respond specifically to the feedback provided after evaluating the survey findings. Since 2019, we have been working with an independent opinion research institute with the aim of professionalizing and standardizing the process. To optimize comparability, the standardized questions are always asked in the same form. This fosters acceptance of the process and makes it possible to track and drive the measures implemented.

The employee survey is accompanied by extensive communication at all levels with the aim of strengthening employee confidence in the survey program as well as in management. In addition, all executives

receive training to help them respond to and implement the survey findings, with a view to continuously improving our employer branding.

Eighty-one percent of all GEA employees participated in the 2021 employee survey that is relevant to the reporting period – an increase of seven percentage points compared with the previous year. We saw improvements in ten of the survey's twelve dimensions, with the highest scores recorded in the engagement and sustainability dimensions. Both were already the best-rated dimensions in 2020. The employee communication and growth opportunities categories each scored six percentage points more than in the previous year.



# 5,500

A total of some 5,500 initiatives were launched across the company during the reporting period in response to feedback.



*"When people feel they're being heard, it makes us all better and safer and lets us grow together through ever more difficult challenges."*

Kevin Ikeda, Director of Continuous Improvement North America

*"The new dimension 'Diversity' reached 74% as favourable score in our employee survey and was reinforced in our GEA values. Diversity & inclusion are the most powerful assets to shape our future and reach our sustainability targets. This will benefit our people, our planet and our bottom line."*

Regine Pahmer, Vice President Indirect Procurement DACH, EE & NCE

GEA takes the employee survey very seriously. That is why we identified three topics from the 2021 survey as the focus for improvement in the reporting year and worked on these across the company in 2022. Another insight led us to make it easier for executives to access the detailed survey results. A total of some 5,500 initiatives were launched across the company in response to feedback during the reporting period, using findings from the survey to optimize existing processes or introduce new ones.

### Percentage of participants in employee survey in total workforce

in %



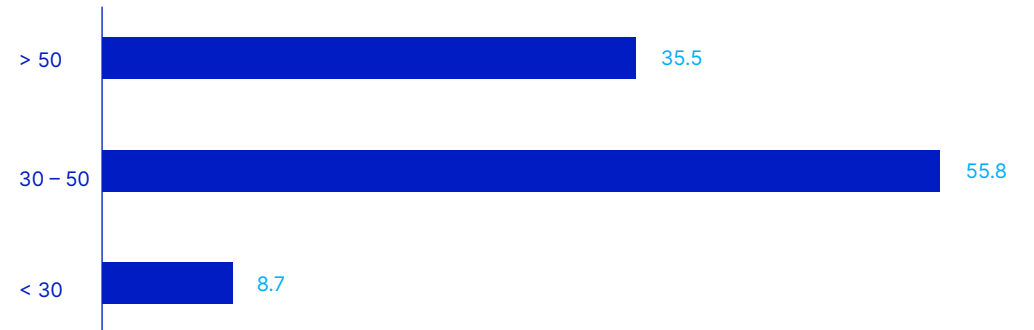
In addition to being well received by the workforce, the employee survey is held in high regard, as indicated by the high participation rate. At the same time, it is fair to say that our employees know the survey results will be addressed and acted on. With a score of 71 percent, the main category of engagement remains highly rated and we are also seeing improvements across all categories. Nevertheless, the findings indicate a number of areas we need to improve on as we join with our executives and employees in following up on the results.

The participation rate for the 2022 employee survey was 82 percent, with a score of 74 percent in the engagement category. Like its predecessors, this survey will be analyzed in depth and corresponding measures developed for implementation in 2023. We are particularly gratified that 78 percent of our employees would recommend GEA as a good employer. This motivates us to continue on our chosen path and further enhance employee satisfaction.



### Employees by age groups\*

(in %)



\*) Number of employees excluding apprentices and dormant employment contracts; excluding non-consolidated entities.

### Diversity, inclusion and equal opportunities

Building diverse teams is a common approach taken throughout GEA Group. For us, “Engineering for a better world” also means creating a work environment where diversity, equal opportunities and the inclusion of all employees are encouraged and fostered. Diversity is a cornerstone of any ambitious company with a global presence. Not only does it enhance our attractiveness as an employer, it also improves the competitiveness of the group as a whole, thereby contributing to the company’s future success.

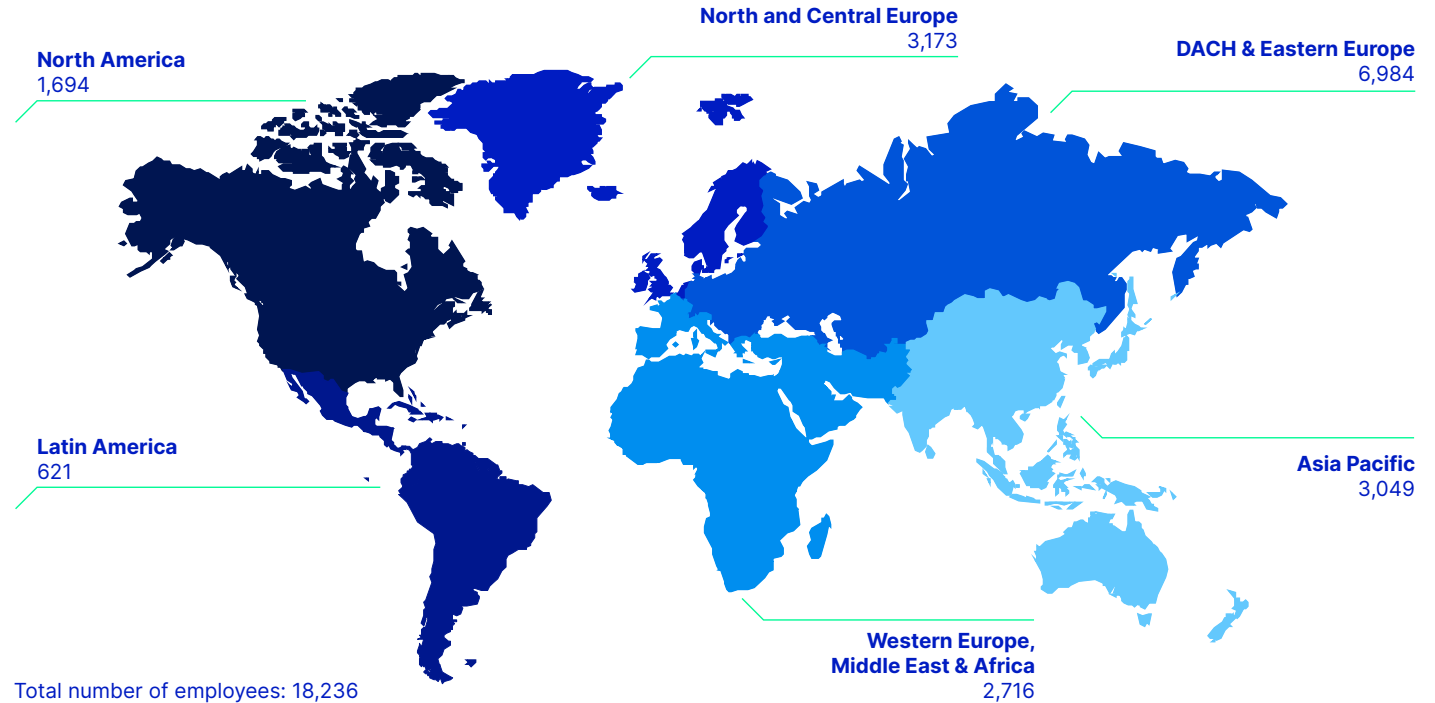
The strategy of “sustainable value creation at GEA” includes the principle of diversity. By this we mean a workforce with a wide range of personality traits, individual abilities, knowledge and skills. These include gender and gender identity, age, ethnicity and nationality, physical and mental abilities, sexual orientation, religion and ideology as well as social background. At the same time, external and organizational aspects such as professional experience can influence diversity. We view inclusion as the empowerment and involvement of all employees regardless of their individual differences, including equal access to opportunities and resources for all.

**People from 104 nations work for GEA in 62 countries worldwide**



Managing diversity, inclusion and equal opportunities is the responsibility of HR and hence falls directly under the remit of the CEO. In the year under review, we prepared a detailed concept and carried out various measures worldwide. Implementing additional measures remains the responsibility of the local organizations. Each of our organizational units is responsible for setting diversity, inclusion and equal opportunity targets as well as for developing and implementing sustainable programs to achieve them. Individual initiatives can still be launched at group, department and local levels.

**GEA employees worldwide**



When implementing diversity and inclusion initiatives, GEA is guided by the “Charta der Vielfalt” (German Diversity Charter), a corporate initiative to promote diversity within companies and institutions. We are thus committed to the equality of all people within the group. In addition, together with more than 7,000 companies worldwide, we are committed to the United Nations Women’s Empowerment Principles (WEPs). These provide guidance to companies on how to promote gender equality and

empower women in the workplace and society. Aligned with international labor and human rights standards, they are based on the recognition that companies have an interest in and responsibility for ensuring greater gender equality and strengthening the position of women in the workplace. The WEPs are a primary tool for implementing the gender equality dimensions of the United Nations Agenda 2030 and Sustainable Development Goals. By joining the WEP community, our CEO Stefan



Klebert is signaling his commitment to this agenda at the highest level of the company and to collaboration in multistakeholder networks aimed at promoting business practices that empower women. Aspects include equal pay for equal work, gender-sensitive supply chain practices and zero tolerance for sexual harassment in the workplace.

*"We are proud to be a signatory to the UN Women's Empowerment Principles. They align perfectly with our commitment to promote equal opportunities for everyone and to create an environment in which all employees are treated with respect and feel valued. We look forward to working with other like-minded companies to promote gender equality and empowerment in the workplace."*

Stefan Klebert, CEO

GEA has also set additional, quantifiable targets related to diversity and integrated them into the "Mission 26" group strategy. The GEA diversity and inclusion strategy contains a two-step plan to further bolster and improve diversity and inclusion by 2026. This strategy is based on three main pillars: establishing and maintaining an inclusive workplace, leveraging diversity and inclusion on the market as well as attracting, developing and supporting diverse talent.

A further aim of the "Mission 26" group strategy is to fill 21 percent of positions in the top three management levels with women and 80 percent of vacant executive positions with our own junior staff by 2026. Additionally, we are an active member of the Rhein-Ruhr Diversity Network and hold a Diversity Day each year as part of this network. Employees also have the opportunity to participate in the event.



We firmly believe that diversity in the workforce begins with shared understanding and actions based on common values. This is why we seek dialog focused not just on quotas or hiring, but also based on conduct and values. The Diversity & Inclusion Policy & Guideline provides the framework for the entire group. The purpose of this guideline is to establish a group-wide global standard on how to address diversity and inclusion by providing guidance to managers and employees on how to navigate the complex issues of diversity and inclusion in an organizational context. We want to do more than just comply with legal requirements – we want to encourage genuine commitment within the company.

This should also be expressed in gender-sensitive language. To ensure that no one in our company is discriminated against by being addressed in the wrong way, we have produced a publication on gender-sensitive language for the German-speaking world for all GEA employees. Language is an expression of our way of thinking and a reflection of social change, which is why it evolves. Consistent with our commitment to diversity, we seek to promote linguistic sensitivity in day-to-day use.

Diversity and equal opportunities are firmly enshrined in our HR processes. For example, they are integral to the Global Placement Policy, which governs our recruitment process. Specific selection criteria that take account of diversity apply when nominating candidates for leadership development programs. In this way, we aim to ensure that genders are fairly represented in leadership development and that we achieve the goal described in “Mission 26”.

## Practical inclusion without fear

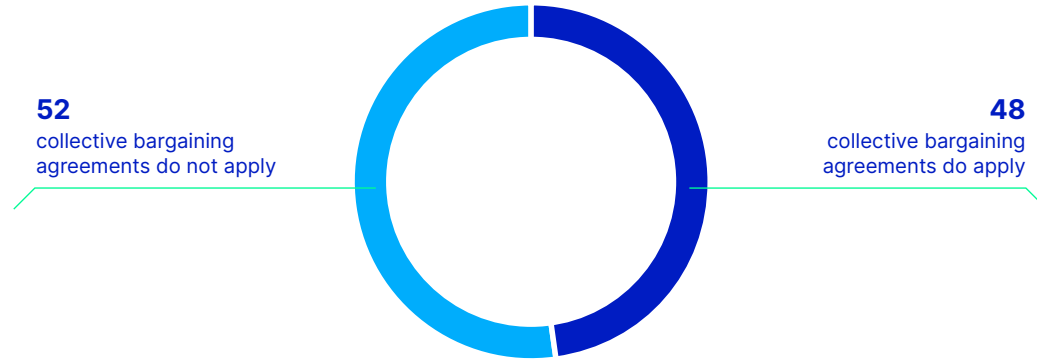
In 2022, GEA and Mainfränkische Werkstätten in Kitzingen, Germany, implemented a trainee project to enable people with disabilities and GEA apprentices to learn about each other's tasks and work together. Mainfränkische Werkstätten is a non-profit company that ensures the integration and inclusion of people with disabilities into the working world and society. Two apprentices from Kitzingen and two employees of Mainfränkische Werkstätten visited each other's workplaces and collaborated. It quickly became clear that all four of them benefited from sharing knowledge and valuable tips. It was also remarkable to see how openly they interacted with each other without fear or prejudice. Communication was friendly and on equal terms. In short, it was a first-hand experience of inclusion. Following this successful start to the project, everyone agreed that the collaboration must be continued.



“I see this project as an enrichment for everyone involved. Our trainees learn about inclusion and social engagement and the employees of Mainfränkische Werkstätten get an insight into training at GEA,” says Tanja Zapf, HR business partner in Kitzingen. Sebastian Ment, a specialist for work and career support in the vocational training department at Mainfränkische Werkstätten, is also convinced of the benefits of the joint initiative: “For our employees, this project was a learning achievement on many levels. As well as fostering their personal development, it taught them how to work with lists and little things such as the rules for working in a group.”

## Percentage of employees under collective bargaining agreements

(in %)



### Labor/management relations and co-determination

GEA is proud that labor/management relations at GEA are characterized by long-standing, respectful dialog and interaction with employee representatives as well as equal co-determination on the company's Supervisory Board. One half of the Supervisory Board is composed of shareholder representatives and the other half of employee representatives. The employee representatives on the Supervisory Board are elected by the entire German workforce, but represent the interests of all employees.

We have a Group Works Council (GWC) established in accordance with the German Works Constitution Act, as well as numerous local and general works councils. At the corporate level, local issues are regulated by company agreements. At the European level, there is also a European Works Council (EWC), which has the statutory right to information from and consultation by the company's management. It is in regular contact with the Executive Board and Human Resources. The activities of the European Works Council mainly focus on the cross-border impact of decisions and developments on employees in the EU



member states, the countries of the European Economic Area and Switzerland. At the end of 2018, the foundations for the work of the EWC were framed in a new EWC agreement, jointly developed and adapted by the EWC and GEA's Executive Board with the assistance of the global trade union federation IndustriALL.

Collective bargaining agreements apply to about 48 percent of the workforce worldwide (2021: around 46 percent). These figures are based on data from the global "Workday" human resource management

system. In countries that do not have these types of legal requirements, we have collective arrangements in the form of policies and directives that are based on global GEA standards and which complement the individual working conditions, taking local requirements into account.



### **Leadership development**

Our leadership development portfolio comprises numerous open leadership and management training courses offered in a variety of formats. They include classic offerings such as “GEA Management Essentials”, “Leading Effective Teams” and “Making the Matrix Work”. All training formats are built on the “GEA Signature for Leadership”, which describes the key attitudes, skills and conduct expected of our managers worldwide on the basis of six dimensions. Managers can also participate in the live “Boost your dialog skills” trainer-led webinar, which is geared to improving the quality of manager feedback.

In the year under review, two new programs were introduced to provide targeted support for managers based on their present and future needs. The first of these is “Learn to Lead”, aimed at individual contributors and first line managers. The second, “Master to Lead”, targets more experienced managers. In addition, managers can choose options from the development portfolio based on their individual needs. They include individual coaching, a 360-degree feedback tool, other live trainer-supported trainings such as “Leading People through Change” and “Why finance matters” as well as a wide range of e-learning courses.

Leadership reviews provide the annual framework for identifying development needs, selecting talent and determining succession requirements. The goal is to cultivate a uniform leadership culture and ensure the best possible continued development of managers. The only way we can specifically attract and retain talent in the labor market is by offering exceptional leadership that can be felt by each individual personally.

In addition to the needs-based training and continuing development of all employees, special development pools – such as the two High Potential Pools (HiPo Pools 1 and 2) and the Talent Pipeline – have been set up to ensure medium and long-term succession planning for GEA’s key positions. Candidates nominated for them by their line managers undergo a demanding selection process to confirm they have the relevant potential, while also providing a starting point for selective personal professional development.

## Learning and development

Training and education are of particular importance to individual employee development at GEA. Our “Mission 26” group strategy expresses our ambition to be an employer of choice. We firmly believe that extensive training and education coupled with life-long learning are essential to a fulfilling working life. In 2022, the GEA Learning Center was replaced by Workday Learning, a virtual platform which serves as the central access point for everything related to learning. This new integrated learning platform has taken our training portfolio and its presentation to the next level. An easy-to-navigate and customizable system, Workday Learning is leaner and more user-friendly than its predecessor.

We support and encourage all needs-based employee training measures which are required for employees to perform their jobs. The results of the employee survey have identified the need to continue improving employee career and development opportunities.

In the year under review, the Perform & Grow program that applies to all GEA employees was further rolled out across the entire group. It takes the form of various dialog sessions between a manager and an employee over the course of a year. During their first meeting, the employee and the manager agree on the former’s short- to medium-term targets. In addition, they can use this opportunity to define the

employee’s individual development plan and career aspirations. During the year, the manager and the employee may meet several times to give them the opportunity to provide ongoing feedback and exchange ideas. At the end of the year, they jointly review the employee’s performance and learning achievements.

The annual Perform & Grow process is supported by the new Workday Learning platform. It gives the managers and employees a better overview of the training and courses completed and makes it easier to track development activities. The system also provides greater transparency in respect of all key training and education indicators.

As in the previous year, training content and formats in 2022 were adapted to the conditions associated with the COVID-19 pandemic. That is why most trainings took the form of trainer-led webinars. Thanks to the successful use of digital technologies, this format was well received by participants.



### Training at GEA in 2022

- 15,945 employees (87 percent of the workforce) made use of the training and learning opportunities in 2022
- 648 employees attended in-person training
- 2,237 employees participated in integrated training initiatives
- 5,587 employees participated in trainer-led webinars
- 54,311 e-learnings completed



### Vocational training in Germany

Only companies that provide training can retain and grow their expertise. Affording extensive training to young people is hence a mainstay of our HR policy. And this strategy is successful: GEA is considered one of the most popular German vocational training companies. According to a survey by a rating and ranking agency, GEA Group is one of the 781 companies in Germany rated as being very attractive for vocational training.

### GEA provides training in the following professions:

#### Industrial professions:

- Plant mechanic
- Electronics technician
  - Industrial electronics technician
  - Electronics technician for automation technology
- Warehouse logistics expert
- Warehouse clerk
- Production mechanic
- Industrial mechanic
- Construction mechanic
- Mechatronics engineer
- Mechatronics engineer for refrigeration technology
- Materials tester
- Metal cutting mechanic

#### Commercial and technical professions

- Industrial clerk
- Technical product designer
- Digital and print media designer
- Computer science expert

### In 2022, GEA organized 15 combined vocational training and degree programs in the following subject areas:

- Bachelor of Arts (apprenticeship: industrial clerk; degree: business administration)
- Bachelor of Arts in business information systems (practical degree course)
- Bachelor of Engineering – trinational degree in mechatronics
- Bachelor of Engineering (apprenticeship: industrial mechanic; degree: mechanical engineering)
- Bachelor of Engineering (apprenticeship: industrial mechanic; degree: industrial engineering)
- Bachelor of Engineering (apprenticeship: mechatronics engineer; degree: mechatronics)
- Bachelor of Engineering – (practical degree course, specializing in electrical and electronics engineering)
- Bachelor of Engineering – (practical degree course, specializing in mechanical engineering)
- Bachelor of Engineering – (practical degree course, specializing in mechanical process engineering)
- Bachelor of Engineering – (practical degree course, specializing in digital technologies)
- Bachelor of Science – (apprenticeship: electronics technician; degree: electrical and electronics engineering)
- Bachelor of Science – (apprenticeship: computer science expert; degree: computer science)
- Bachelor of Science – (practical degree course, specializing in process engineering)
- Bachelor of Science – (practical degree course, specializing in industrial engineering)
- Bachelor of Science – (practical degree course, specializing in software technology)



## A very attractive vocational training company

GEA has always been a vocational training company – not only out of a sense of responsibility but out of conviction. And we are proud to be among the best. According to a representative survey by ServiceValue, GEA ranks among the 781 companies in Germany rated as being highly attractive for vocational training. This is the highest position a company can achieve in the ranking. In cooperation with German daily newspaper “Die Welt”, analysis institute ServiceValue determined which companies among a cohort of almost 4,000 are considered particularly attractive to apprentices. In the 2022 survey, the companies were assigned to three business sectors (services, trade and industry) and given a cross-sector ranking according to their respective approval ratings. The analysis was based on some 700,000 responses obtained in a Germany-wide survey that was conducted without the involvement of the companies being evaluated.

In the year under review, GEA provided vocational training in Germany to 368 young people at 15 sites in 16 commercial, industrial and technical professions, which fall into different specialty areas depending on the product portfolio of the respective site. The Oelde site is the center for technical training, coordinating these activities in Germany. In addition, 15 combined vocational training and degree programs were organized in cooperation with polytechnics and universities. Over six semesters, these programs lead to bachelor’s degrees with various specializations. GEA has lent a more international focus to the practical phases of these programs by offering projects at GEA companies outside Germany.

Another successful model is the Kosovo Professional Development Initiative. GEA Westphalia Separator has participated in this program since 2012, giving young Kosovans the opportunity to undertake vocational training in Germany after graduating from high school. Each year, one student from Loyola High School in Prizren is given the opportunity to complete an apprenticeship at our company. Vocational training is offered for apprentice mechatronics engineers, industrial electronics technicians, industrial mechanics, computer science experts and materials testers for metal engineering, among others. Some of those who benefited from the initiative are already working in permanent specialist positions at GEA, while others started a combined vocational training and degree program after completing their apprenticeships.

## In Oelde, Germany, children become apprentices



*"We are certain that everything the children experience on this day will make them think. This early contact with scientific and technical teaching ultimately whets their appetite for more – and, years later, may even lead them to apply to one of the companies involved, as we are seeing now."*

Ralph Hackelbörger,  
Head of Vocational Training



For the past 13 years, the Oelde tryout days have been very popular with local kindergartens. Organized by various companies in this small Münsterland town, they are designed to get even the youngest children interested in everyday science and technology. GEA was one of the first pilot partners at the Oelde site in 2009 and the success of the concept has proved us right. The results are consistently positive and the model has already borne fruit when it comes to attracting new talent.

When Manuel Achmedow and Bastian Bieler were five years old, they took part in the tryout days themselves. And they were hooked right away – ten years later they both started apprenticeships at GEA. Since

then, many other children have been fascinated by the company's vocational training center. Most of them really enjoy trying out a lathe or drill, engraving, machining and milling under the guidance of the apprentices. Little wonder. After all, who can try something like this at home? And with almost all of the children, their eyes light up.

Manuel Achmedow and Bastian Bieler can relate to this. Ultimately, it was no mere chance that they opted to train as an industrial mechanic and mechatronics engineer at GEA. Ten years ago, they were GEA's guests as kindergarten children themselves. Today, they are showing other children around the training center during a tryout day.

"We don't just see enthusiastic kids, proud that they made something useful with their own hands. Our apprentices are also very invested in the project," says Ralph Hackelbörger, Head of Vocational Training at GEA. They help design the overall concept, prepare the day's activities and locations and take responsibility for their young charges. "It sharpens the mind and boosts their self-confidence. As far as we're concerned, the project is a real success and we will be continuing our involvement in the years ahead," says Hackelbörger.

The tryout days are an integral aspect of the close cooperation between Oelde companies and all local kindergartens. For a limited number of days each

year, four- to six-year-olds are given play-based access to the operations of participating companies and institutions. The apprentices look after the children and guide them safely around their working environment, demonstrating the role of science and technology in the working lives of adults in numerous ways. The tryout days project was launched in 2009 by the town of Oelde, the "Landschaftsverband Westfalen-Lippe" (LWL), the "Initiativkreis Wirtschaft Oelde" and the "Initiative Zukunft durch Innovation in NRW" in cooperation with all kindergartens in Oelde.



10

In Germany, GEA employees who are caregivers for dependants receive special support over and above the statutory requirements. For instance, they receive additional caregiver leave from the company in the form of ten extra personal days per calendar year.

### Work-life balance

GEA explicitly endorses a good work-life balance. Ultimately, the only way for employees to realize their full potential is when they can balance their family life with their work. This is why we have established a wide range of measures to support our employees, with services differing from country to country. In principle, it is possible for GEA employees to take advantage of different types of flexible working arrangements – in consultation with their line managers – that best accommodate their particular situation. This could be for education purposes or for family or personal reasons. Options include the offer of various part-time working models. In Italy or France, for example, employees aged 60 and above can reduce their working hours to 90 percent but continue to receive full pay.

Other working time models allow, for instance, full- or part-time working from home, working the full number of weekly hours on four days or customizing working times by starting work at midday and working into the evening to avoid rush hour traffic or to adapt to customer working hours in other time zones. Other possibilities include working mainly in the office and doing some work from home, working at an alternative location or job sharing – where two part-time employees fill one full-time position.

There are experienced contact partners at some GEA sites who can answer any questions expectant mothers and fathers may have about flexible work arrangements. In Germany, we also provide support in finding childcare and, under certain conditions, pay tax-free allowances for places in daycare facilities. To help employees achieve a better work-life balance, GEA offers them five extra days of parental leave per child during the first three years of the child's life, in addition to statutory

parental leave. In other countries, GEA offers 14 weeks of paid parental leave after the birth or adoption of a child for one parent and two weeks of paid parental leave for their partner. Employees can also apply for parental leave if they are not biological parents. In certain countries, GEA provides special rooms for nursing mothers.

In 2022, as a way of raising awareness for the issues, videos were produced for managers whose employees face particular challenges in achieving a work-life balance due to the birth of a child or caring for a family member. GEA additionally partners with an external service provider in Germany to help employees find suitable daycare for their children and options for dependants in need of care. This service also includes free social counseling.

In Germany, GEA employees who are caregivers for dependants receive special support over and above the statutory requirements. For instance, they receive additional caregiver leave from the company in the form of ten extra personal days per calendar year. It is also possible for employees to donate some of their vacation days to those who are caregivers for family members to ensure that care can always be provided.

The many measures include activities to increase employee loyalty to the company. In September 2022, for example, GEA began offering various sporting events on Amazing Friday in China. Support was also available for people affected by the lockdowns during the COVID-19 pandemic. In China, for instance, management helped to ensure food deliveries to the homes of more than 350 employees in Shanghai. At the same time, there were regular online meetings to provide emotional support to those affected.



## Remuneration

GEA pays all employees in a way that is customary for the respective market or country. Collective bargaining agreements apply to about half of all employees worldwide. For the rest of the workforce, regulations based on international or local directives and agreements apply. As an employer in the engineering industry, we generally recruit highly qualified employees. Wherever they are in the world, their remuneration is based on objective criteria, notably their function, their individual performance and the company's success. The starting salaries for all employees are above the statutory minimum wage in their respective country.

For executives and individuals in other selected positions, remuneration includes variable performance-based salary components, which can amount to between 10 and 40 percent. The targets are set out

in the group-wide GEA Uniform Bonus Plan, which supports the company's financial and strategic targets by incentivizing employees based on company performance, thus promoting GEA's profitability and development.

Specific incentive schemes are also in place, including the GEA Sales Incentive Plan, which creates a clear and objective framework for incentivizing employees to attain and surpass challenging sales performance targets. This plan fosters the company's overall success by aligning business and individual goals. The bonus payment also depends on factors such as achieving key performance indicators, including order intake, gross margin on order intake and payment targets.

In addition to the short-term incentive schemes, a further incentive has been introduced for all employ-

ees worldwide to encourage high levels of performance for achieving the strategic "Mission 26" targets. From 2022 to 2026, all GEA employees will receive additional annual remuneration if the "Mission 26" financial targets are met. These targets are linked to organic revenue growth and the EBITDA margin. Each year, the two specific target values for GEA Group will be aligned with "Mission 26." If these targets are attained, all employees will receive an individual incentive payment based on the average purchasing power of their respective country.

An annual review of pay and fringe benefits is conducted both at the collective level (comparison with other companies or on the basis of inflation, for instance) and at the individual level (such as performance and skills profile). Overall, the goal is for the remuneration programs to strike the best possible balance between cost efficiency and employer

attractiveness. GEA also offers additional market-based remuneration components (benefit structures), such as company pension plan benefits, in all countries. These components are similarly subject to an annual review.

GEA is fully committed to equality, including equality in pay. To this end, we have implemented mechanisms in many countries to prevent wage differences between genders. These mechanisms allow us to perform sustainable analyses and fill any gaps. Some of the steps taken to make sure that jobs are comparable and offer fair pay include global job family structures and the grading of management positions.



### Retirement provision

GEA's employees enjoy company pension benefits, primarily under defined contribution pension schemes. They can actively shape their pension plans in consultation with the company. For GEA, the company pension scheme offers an opportunity to respond to demographic change and retain qualified specialists over the long term. GEA endeavors to continuously optimize existing administrative processes and global pension-related service structures to improve both the transparency and economic efficiency of the pension plans. In doing so, the company ensures that the pension plans fully comply with all statutory and regulatory requirements.

### Mobility

Despite advances in digital technologies and the possibilities they offer, such as working from home and video conferencing, GEA will continue to be dependent on employee mobility going forward. It is important to us in this context to keep the carbon footprint of work-related travel as small as possible. That is why we have launched various initiatives. In

Germany and the Netherlands, for example, there is a company car policy for executives under which only fully electric vehicles may be purchased. There are plans to introduce this type of policy in other countries in the years ahead. Additionally, employees have a greater incentive to use more environmentally responsible modes of transport to get to work, as we pay higher subsidies for local public mass transit passes.

We work with a central service provider to book travel for essential long-distance business trips. To meet market demands and ensure that the company remains competitive over the long term, it is important to retain our ability to deploy the knowledge and expertise of GEA's employees worldwide. The service provider makes it possible for employees to carry out their important work assignments efficiently and in an environmentally friendly manner.





### Occupational health management

Employees can only perform at their best when they are healthy and feel good. GEA's health promotion measures extend well beyond legal requirements, since investment in the health and well-being of its employees is an investment in the future.

The occupational health management (OHM) system at GEA is decentralized and run either by the divisions and regions or the respective GEA sites. The "GEA Care" health management program, which centralizes health management, is integrated into the "Mission 26" group strategy. This optimizes existing local offerings and creates new global digital offerings for the entire GEA workforce.

General health, individual precautionary measures and prevention are at least as important as protection against accidents and hazards in the workplace. Protecting and promoting health is not only a natural social obligation and an expression of GEA's corporate culture but also a component of the "Mission 26" group strategy. The group's local-level health management system often exceeds statutory healthcare as well as established occupational safety and health requirements. It includes additional benefits and various initiatives such as health days, nutrition counseling and programs to combat mental overload. At the same time, employees have access to a health portal provided by an external service provider.

Today, health management is already established as a component of healthcare at numerous GEA sites. In addition to plants such as Oelde, Wallau or Bönen, the Düsseldorf site also hosted the first GEA Care Days in 2022. In the future, all OHM activities will be combined under the global GEA Care umbrella. Alongside the health days, this includes mandatory occupational medical examinations or flu vaccinations, as well as psychosocial support and stress management coupled with other face-to-face and online offerings.

The goal is to introduce offerings, and procedures for establishing them, to reflect demand. In other words, what makes sense for one location does not necessarily apply to another. Cultural, religious and local factors must always be taken into account. Only in-depth cooperation with healthcare providers, health insurance companies and medical officers, coupled with the exchange of information between the HR department and the works council as well as registering the needs of the workforce, can deliver sustainable success and allow a future-proof health management system to emerge.

The model for this ambitious goal is the wealth of experience, in some cases gained over many years, at German sites that already offer very successful and in part highly comprehensive, sustainable OHM programs in various forms. In 2023, all OHM activities will be inventoried and documented so as to create a catalog of knowledge and experience. This helps to avoid duplication of effort, identify potential synergies and keep costs in check, especially for online programs and offerings.

# COMPLIANCE AND GOVERNANCE



# SUSTAINABILITY IS A JOINT RESPONSIBILITY

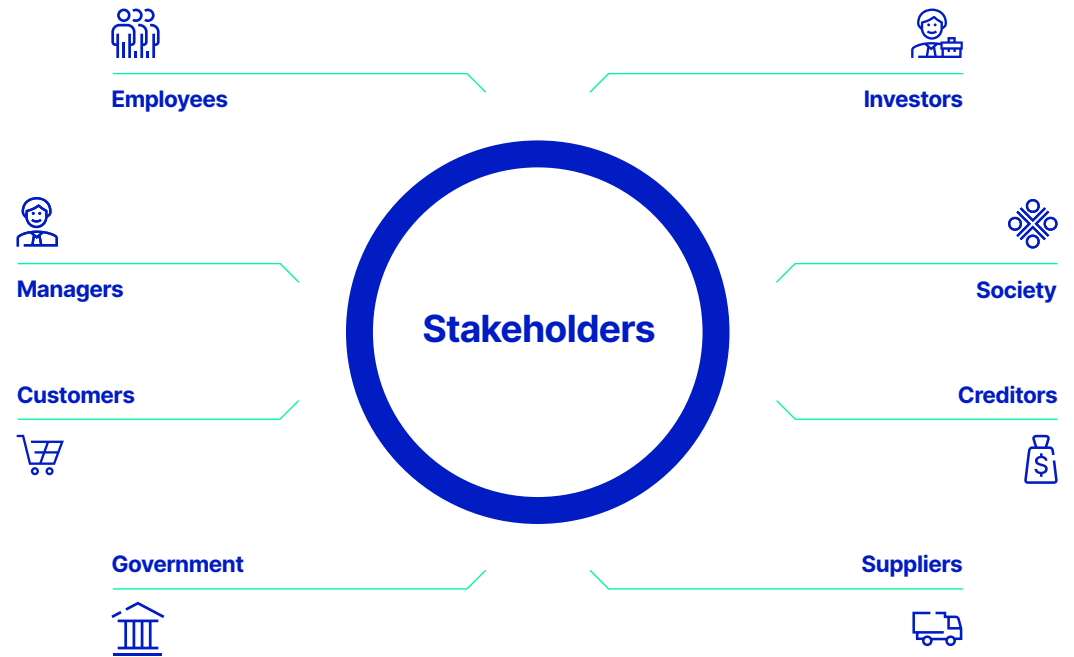
The goal of GEA's entire management team is to transform the company from a traditional industrial group into a sustainable enterprise. The Executive Board, Supervisory Board and Group Works Council are working closely together to achieve this. The Executive Board is driving forward the implementation of the company's sustainable development strategy and attainment of the sustainable development goals. It is supported in this by the Supervisory Board and the Group Works Council. Shared leadership fit for the future creates trust, ensures that our company becomes even more sustainable and motivates our more than 18,000 employees worldwide to give of their best every day.



# Responsible action calls for clear-cut principles.

GEA is committed to responsible and sustainable corporate governance in order to avoid potential harm to the company, its employees, business partners, shareholders and other stakeholders. In light of this, fairness, integrity and compliance have a high priority. The special importance of integrity is further underscored by the fact that it is the core element both in our corporate values and for GEA in general. By acting ethically and considering the concerns of all stakeholders when dealing with employees, business partners and the public, GEA also protects its good reputation as a consistently reliable business partner over the long term.

We must be able to identify serious violations of the law or internal policies at an early stage so that we can put our aspirations into practice. This is why we set great store by an open corporate culture and encourage all employees and external third parties to reach out to existing contacts in the company in confidence if they become aware of compliance risks. Use is also made of the various reporting channels, which helps us eliminate compliance risks and violations.





### **Sustainable corporate governance**

Responsible corporate governance geared to sustainable value creation in the interests of all stakeholders is the benchmark for the actions of the Executive Board and Supervisory Board. According to the German Corporate Governance Code (GCGC), the Supervisory Board's skills profile should also include expertise on sustainability issues of importance to GEA. Due to the diversity of sustainability and its importance as well as its impact on various areas, the Supervisory Board consciously decided against establishing a separate Sustainability Committee. Instead, responsibilities are divided within the Supervisory Board and its committees in line with their competencies. This is also reflected in the renaming of the committees.

The Executive and Sustainability Committee (formerly the Executive Committee) is responsible within the Supervisory Board for the sustainable development strategy as well as fundamental environmental, social and governance (ESG) issues and their implementation. Topics such as technical and product sustainability are assigned to the Innovation and Product Sustainability Committee (formerly the Innovation Committee), while the topics of taxonomy and sustainability reporting are the responsibility of the Audit Committee. The rules of procedure of the Supervisory Board and the committees were modified accordingly. In 2022, the Supervisory Board attended

training sessions as well as presentations on the topics of "Greenhouse gas emissions," "Challenges of the Supply Chain Act," "Digital transformation," and "Executive Board compensation and compensation report." Another training session on "Risk management" was held in February 2023.

In the future, when the Executive Board and Supervisory Board are required to make decisions on investments, the necessary documents are also expected to contain information on the sustainability-related impact or sustainability effects of the intended measure. Corresponding requirements are anchored in the approval and representation policy and in the model document for resolutions to be adopted by the Executive Board. Although the attendance rate averaged 96 percent in the reporting period, an attendance obligation of, as a rule, at least 75 percent of the members of the executive body was expressly included in the Supervisory Board's rules of procedure.

In addition to the diversity concept for the Supervisory Board, including the Supervisory Board's target skills profile, the Corporate Governance Statement in the Annual Report reports on the implementation status of the requirements for the composition of the Supervisory Board defined in the skills competency profile as part of a "qualification matrix".

## GEA as an example of best practice

The auditors highlighted certain of GEA's compliance processes as examples of best practice, based on the positive results of the 2021 audit.



### Compliance management

Compliance is defined as a group-wide principle established to ensure adherence to the rule of law as well as internal corporate policies. All GEA employees have a duty to ensure that no compliance violations are committed in their respective areas of responsibility. A detailed description of GEA's compliance management system can be found in the Corporate Governance Statement of the 2022 Annual Report and on the group's website at [www.gea.com](http://www.gea.com).

New compliance targets are defined and existing ones reviewed as part of a rolling three-year plan for issues to be addressed. This means that issues remaining unresolved in the year in question are rolled over to one of the following years and the subsequent planning adjusted accordingly. The planning is also adapted and developed during each year. A wide range of insights obtained in the course of each year flows into the three-year plan. For example, this includes the results of risk assessments and internal audits, legislative initiatives and feedback from the

company, including divisions and regions, as well as from third parties. Planning is carried out at group level by the Compliance team. The content of the planning and the progress of implementation are regularly reported to the Executive Board, Supervisory Board and Audit Committee.

### The compliance management system is continuously updated

GEA counters serious consequences arising from potential compliance violations with a compliance management system (CMS), which is adapted continuously to reflect changing requirements. The CMS is used to analyze, inform and clarify as well as to control, define processes and monitor the applicable compliance rules. It is structured in such a way that measures are developed centrally by a Compliance team at headquarters, then rolled out across the company. Additionally, the Compliance team monitors implementation of the measures in the relevant local business units.

The appropriateness and implementation of the CMS for the sub-areas of anti-corruption and antitrust law were audited and certified in accordance with IDW PS 980. In the reporting period, GEA obtained the third and highest certification level for the audit performed in 2021 by an external audit firm by means of an effectiveness audit. For this purpose, ten selected local business units were reviewed with the help of interviews and sample audits. Based on the results, an assessment was made to establish whether the globally specified compliance measures had been effectively implemented and executed at the local business units. For this, we were granted an audit opinion without restrictions in April 2022.



## Compliance Handbook

The Group has a Code of Conduct and related compliance policies apply to all employees worldwide. These include an integrity policy, a third-party policy and a competition policy, which govern anti-corruption and anti-money laundering, conflicts of interest as well as antitrust and competition law in the company. The Code and the policies are summarized in a Compliance Handbook, which is available to all employees worldwide in 19 languages.

In the reporting period, the integrity, third-party and competition policies were adapted to reflect legal and strategic developments. Additionally, we have integrated into the Code of Conduct the principles of corporate responsibility with the issues of human and employee rights, diversity and inclusion, action against discrimination and harassment as well as human development and training. As a result, these are now also part of the Compliance Handbook. When signing their employment contract, all GEA employees confirm that they have taken note of and accept the references to the group guidelines contained therein, including the Code of Conduct. This means that key sustainability issues must be formally respected by all employees.

Other compliance-related topics, such as quality, health, safety & environment (QHSE), tax compliance and export control are dealt with by the relevant departments and are covered by guidelines issued by those departments.

## Integrity system and alternative reporting channels

GEA employees can report violations via several routes. One pillar of the reporting system is the use of a certified whistleblower system, which has been adapted to both the European Union's Whistleblower Directive and the German implementing law based on it. The EU's new directive encompasses significantly more reporting categories than previously, including topics from the areas of sustainability, human rights and information security. The electronic system allows compliance violations to be reported in nine languages, both anonymously and under the individual's own name. In addition, the whistleblower system was expanded to

include a telephone reporting channel in cooperation with an external law firm. Employees are proactively informed about these reporting channels – for instance, on the intranet – as part of compliance training and through poster campaigns.

The number of reports submitted via the whistleblower system in 2022 remained roughly the same as in the previous year. No material compliance risks were reported in the reporting period and, accordingly, no such cases were recorded. Additionally, many reports are received directly by the Compliance team as well as by the Executive Board, divisional management and local business unit management. GEA's whistleblower system can also be used to report potential human rights violations. In 2022, 18 reports on core compliance topics such as corruption and conflicts of interest were submitted via the whistleblower system or alternative channels, whereby no compliance risks of material importance to GEA Group were reported.

## Preventive processes

Processes designed to prevent compliance violations play a major role in our compliance management system. That is why external third parties with close customer contact (sales agents) must undergo a strict risk vetting process for anti-corruption purposes prior to entering into a contract with GEA. Every contract with every sales agent must be reviewed and approved by the Compliance team.

Other selected business partners in the purchasing area are reviewed as part of an analysis by the EcoVadis rating organization, including with regard to compliance issues. Risk indicators (red flags) are identified in a structured and documented review process that also covers the expertise and integrity of the business partner. Get more information at "Sustainable supply chain" starting on page 81.

Numerous other matters such as contracts carrying antitrust risks, invitations and gifts, conflicts of interest as well as sponsorship and donations are similarly subject to strict internal approval and reporting requirements. We have introduced various IT tools to meet the approval and reporting obligations as well as to document the relevant issues in an audit-compliant format.

Category	Number of reports 2022	Number of reports 2021	Number of reports 2020
Compliance	18	21	10
Export controls	0	0	1
Data protection	1	0	0
Purchasing	0	0	0
Sustainability	0	0	0
QHSE	2	0	0
HR	4	2	5
Information security	1	0	0

### Training and consulting

More than 9,000 employees across the group are considered compliance-relevant. These include all managers, sales and procurement staff as well as all other employees with decision-making authority and direct contact with customers or suppliers. They are regularly trained on compliance issues as part of a training plan. Every year, compliance-relevant employees alternate between in-person training and e-learning. The following training courses on compliance topics were held in 2022:

#### Training on compliance topics in 2022

- **Compliance training:** These are comprehensive group training courses, in particular on the topics of compliance management, Code of Conduct, anti-corruption, money laundering prevention, conflicts of interest and competition law as well as an overview of the internal control system. In 2022, a total of 2,142 employees received compliance training in the form of e-learning and 3,152 employees attended in-person training sessions.
- **In the area of data protection,** 2,806 employees participated in e-learning and 1,709 employees attended in-person courses during 2022.

In addition to in-person training courses and e-learning sessions, GEA used other communication measures in the reporting period to raise employee awareness around compliant conduct. In the video concept "Compliance Talks", GEA's CCO Dr. Stephan Petri discusses important compliance topics – such as money laundering prevention or forms of sexual harassment in the workplace, as well as rules for avoiding and detecting it – with key managers in order to bring these home to employees. These compliance talks are regularly made available to all employees with computer access as a video on the intranet. In addition, there is the "Laurel Smith" comic format. It features a fictional new GEA employee who comes up against a variety of compliance and data protection issues. The stories it tells allow employees to easily identify with the character, reflect on compliance issues and then comment on them.

### Internal Audit

Internal Audit also examines compliance aspects as part of its standard and special audits. It is an independent control function in the "three-line" model of integrated corporate governance, risk and compliance. Internal Audit audits and advises on behalf of the Executive Board and reports to the Executive Board, the Global Executive Committee and the Supervisory Board's Audit Committee on a quarterly basis. In addition, there is a regular exchange of information with the divisions, regions and central Group functions as well as with the Group auditor. The independent, objective auditing and consulting services are designed to add value and improve business processes.

Internal Audit supports the Group in achieving its objectives by applying a systematic, targeted approach to evaluating the effectiveness of risk management, controls and the management and monitoring processes as well as to help improve them. To this end, improvement measures are agreed with the audited units and their implementation is monitored. Internal Audit's activities extend to all of GEA's legal entities, businesses, functions and employees. In carrying out its duties and responsibilities, it has unlimited audit rights and is entitled to full and unrestricted access to all activities, records, information and any of the company's assets.

Internal Audit regularly exchanges with the Group's central functions, taking into account information from Corporate Finance (enterprise risk management), Corporate Accounting (internal control system), Corporate Tax (customs and export control), Compliance & Principle Legal Matters (compliance-related investigations and activities) as well as the divisions and regions (coordination of audit activities).

Alongside safeguarding assets and examining the efficiency and regularity of processes, the tasks of Internal Audit include verifying that documentation is complete. This also includes compliance investigations, either of a general nature or driven by a specific event, audits of export controls and of all central functions of the Group. The area of compliance, in particular data protection, was audited in the reporting period. A total of 50 audits were carried out at local business units worldwide, some of them as remote audits due to COVID-19. A total of 37 of these audits were completed by the end of December 2022 with the publication of a report.



*"Compliance at GEA is more than policies and procedures. It means that we walk our talk, as expressed in our GEA values."*

Dr. Holger Schier, LL.M.  
Compliance Officer, Senior Manager Legal



# 200

All of our approximately 200 operational local business units were audited in the reporting period, including five using interviews.

### **Compliance audits**

Across the group, all contracts entered into with sales agents were reviewed with regard to the compliance guidelines in force at GEA – 120 of them in the reporting period. Of course, we will continue to do the same for contracts entered into in the future. Sales agents are not GEA employees, but rather external individuals working for our company on a commission basis. A third-party tool was used to examine and assess all contracts with regard to risk criteria. If the outcome of the assessment was positive, a new contract with updated compliance requirements was drafted.

A further check to reduce compliance risks is carried out, for example, before travel expense claims are approved and for invitations and gifts. If the costs are above the thresholds applicable at GEA, they will only be reimbursed if the expenses have been approved in advance via the “Compliance Approval Tool”.

Compliance risk analyses are conducted annually in the local business units as part of a compliance risk assessment. For these analyses, between four and ten interviews are conducted with randomly selected local business units. Software is used to analyze and document the statements made and assess the compliance risks. Self-assessments are conducted at all local business units where interviews were not

held. The aim is to identify whether the compliance measures taken are fit for purpose and risk-appropriate or whether they need adjusting. Accordingly, additional compliance measures were rolled out at numerous local business units depending on the results of the audit. All of our approximately 200 operational local business units were audited in the reporting period, including five using interviews.

### **Compliance violations**

GEA practices a strict zero-tolerance policy with regard to unethical behavior in business, especially bribery, corruption, money laundering as well as child and forced labor. We respect general human rights and ensure their observance to the extent that we are able to exert influence at regional level and in our dealings with business partners. GEA takes action against any form of violence and discrimination – if necessary also by legal means. This includes gender-based violence and harassment in the workplace.

Violations of group-wide compliance rules are met with sanctions appropriate to the degree of fault and severity of the misconduct. Sanctions range from reprimand and warning letters to termination of employment. In particularly serious cases, GEA reserves the right to sue the individuals concerned for damages and/or to report the violation to the responsible authorities.

As a basic principle, we expect all our employees to report any indications of compliance violations. Managers must ensure that serious misconduct, notably in the areas of corruption, competition law and data protection, is reported to the Compliance team without undue delay.

In the reporting period, 18 compliance investigations were conducted – all in the areas of corruption and conflicts of interest or violations of internal compliance requirements. Violations of compliance policies were identified by some of these investigations and sanctioned with appropriate measures by compliance committees convened in individual cases. There were no reports of human rights violations. Additionally, no sanctions were imposed on GEA in the reporting period for violations of anti-corruption or money laundering regulations, antitrust law or data protection. Furthermore, GEA was not required to pay any significant fines (EUR 10,000 or more) for non-compliance with laws or regulations governing economic, environmental and social matters.



> 770

By December 31, 2022, more than 770 further relationships with suppliers and subcontractors were reviewed for data protection compliance.

### Protection of personal data

For an innovative global company like GEA, information and its use are of significant importance in accomplishing our corporate goals. At a minimum, it is equally important to protect the privacy of everyone whose personal data we process. This includes our workforce as well as customers, suppliers, other contracting partners and job applicants, and applies to all GEA companies and specialist departments that handle personal data.

An important topic in the reporting period was the strategic collaboration with areas of purchasing, IT, business process management and information security. This will also be continued in 2023.

The EU General Data Protection Regulation (GDPR) and the national laws based on it, as well as foreign legal standards, underpin our data protection activities. Violations of the GDPR can result in fines of up to four percent of the group revenue and exclusion from public contracts. Data privacy violations can

also cause lasting damage to GEA's reputation. This is why the company requires adherence to data protection regulations and reserves the right to take action against anyone who fails to comply with data protection laws. Such actions may, for example, include disciplinary measures but also the assertion of claims for damages.

GEA's Data Protection Policy sets forth guidelines and recommendations for all employees with a view to avoiding data privacy incidents or violations. It forms part of the global compliance principles and is supplemented by in-person training for employees working in sensitive areas as well as e-learning for all employees with a user account. In addition, the corresponding data protection management system covers all organizational aspects, i.e. roles, tasks and responsibilities involved in processing personal data. The data protection management system was successfully audited in accordance with the IDW PS 980 audit standard in 2021.



Among other things, incident management is now effected following integration of the data protection management system into the "Service Now" digital workflow platform. When employees generate an incident report using Service Now, a corresponding data protection review is automatically initiated. If this review identifies a data protection violation, an assessment is then conducted to determine whether the violation is reportable.

GEA recorded an unchanged high number of notifications and requests for advice in the reporting period, in some cases several per day. This is a welcome development as it shows that employee awareness of the issue worldwide has increased. It can be taken as a sign that the quality of monitoring has also increased.

Compliance with data protection requirements and applicable data protection laws is monitored regularly. These reviews are performed by the company's data protection officers and other business units with auditing rights, or by external auditors. Third-

party suppliers are audited by means of supplier self-declarations, audits and certifications. By December 31, 2022, more than 770 further relationships with suppliers and subcontractors were reviewed for data protection compliance. The contracts of over 95 suppliers and subcontractors were amended to ensure compliance with the GDPR. There are also automated consent processes for customers – for instance, in the global customer management system.

In addition, GEA employs a Group Data Protection Officer who coordinates and supports data protection initiatives across the group as a whole. The Group Data Protection Officer reports directly to the Executive Board, the Supervisory Board and the Audit Committee.

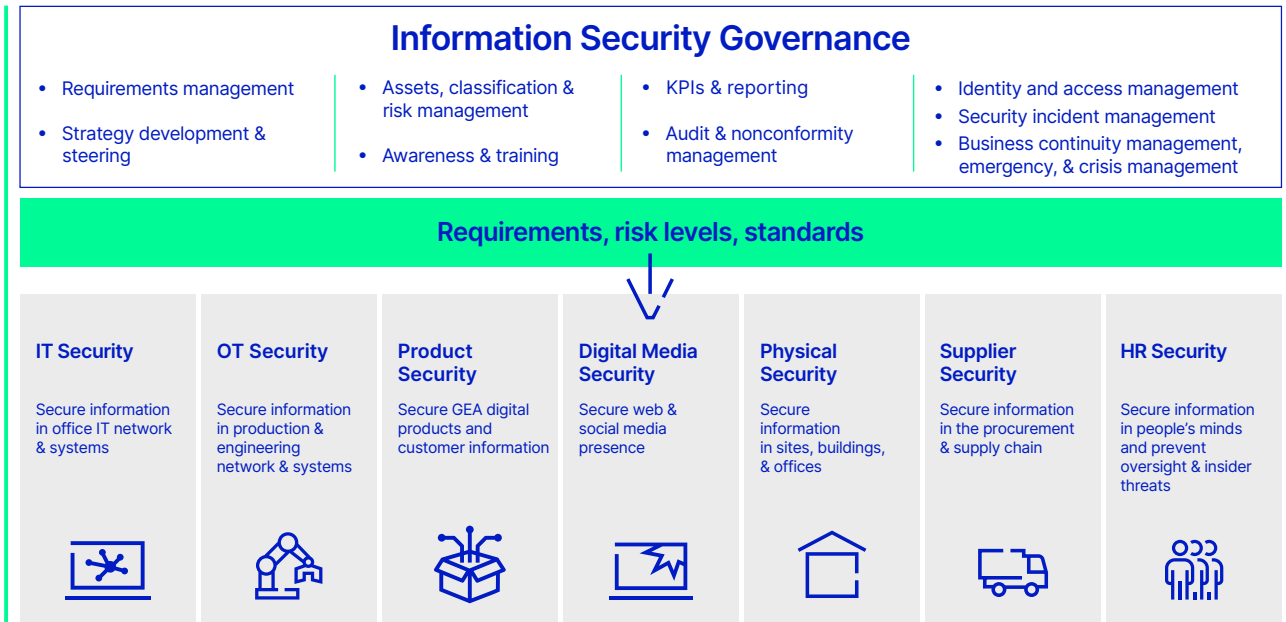
### Information security, business continuity and crisis management

The success of our company critically hinges on information security and uninterrupted business continuity. This is particularly true given the increasing interconnectedness of GEA's systems and the tremendous importance of information for our business. At GEA, information security is one of our main strategic priorities. Value creation processes are designed and optimized to ensure that information is handled securely. To ensure this, we are continuously improving our security measures. The current Global Security Program was established to further strengthen the group's information and cyber security.

The overarching goal of information security is to protect company-relevant information – both our own information and that of our customers and partners. Thus ensuring the confidentiality, integrity and availability of this information is essential. Confidentiality means preventing unauthorized access to information. Integrity guarantees the reliability and accuracy of information. And availability means authorized individuals having timely and uninterrupted access to data, objects, resources and processes.

The protection of information is governed by GEA's Information Security Policy as well as sub-ordinary policies, procedures, processes and other implementation documents. All information security documents containing instructions were updated during the reporting period as part of the annual review. Business interruption insurance additionally provides coverage in the event of an emergency.

ISMS



Second line of defense

First line of defense

GEA's Information Security Management System (ISMS) addresses growing security threats by protecting sensitive information of all types from, for example, theft, loss, unauthorized disclosure, unlawful access, misuse, alteration or destruction. There are two lines of defense available within the ISMS to protect against significant security risks. The first line of defense consists of seven focus areas. It addresses risks (vulnerabilities and threats) where they occur.

The Information & Cyber Security team led by the Chief Information Security Officer (CISO) is the second line of defense. The CISO is responsible for information security management as well as business continuity and crisis management. He reports to the Chief Financial Officer (CFO) as well as regularly to the Executive Board, the Supervisory Board and the Audit Committee of the Supervisory Board.

Within the global ISMS, all legal entity representatives are responsible for ensuring that their company has an appropriate information security management system in place.

Our employees also play a key role in implementing the ISMS. Mandatory information security trainings for the entire workforce are held annually to ensure that they are actively involved and familiar with the security requirements. In addition, a global communications campaign ensures greater awareness and sensitivity about information security.

The content of the ISMS policies is addressed in a series of explanatory videos, covering topics such as e-mail fraud and correct visitor management. Aside from focusing on prevention, the videos provide information on what to do in the event of a security incident in order to address any issues as quickly as possible and prevent damage. Two new mandatory training courses and, for the first time, a global phishing simulation were also held during the reporting period.

In the event of an incident, the Executive Board, the Chief Compliance Officer or the CISO can order an information security investigation. The compliance policy for internal investigations applies to internal information security investigations – with the difference that the CISO, rather than the Chief Compliance Officer, appoints the members of the investigation team from the information security organization, rather than the compliance organization. Disciplinary measures are decided by the Information Security Compliance Committee.

In 2022, no complaints related to a breach of protection or loss of customer data were identified at GEA.





#### Global Security Program

Information security has become much more important in light of advancing digital transformation and globalization. Security risks and the efforts of businesses to protect proprietary information are intensifying worldwide. This development has been accelerated by the COVID-19 pandemic and working from home, among other factors, and has been exacerbated in the reporting year notably by the conflict in Ukraine and its impact on smooth business operations.

Due to growing security risks as well as the increasing number of cyberattacks, more and more government institutions, agencies and companies require their suppliers to have certifications specific to their industry, market or organization – often in addition to international certifications such as ISO 27001. Such certifications ensure that the security risks for companies are minimized and attacks can be successfully averted.



# 35

By the end of 2022, 35 projects on information security have already been completed. Further 32 projects are in the implementation or close before completion.

We have in place a Global Security Program to meet this requirement and protect our company. This program applies a cross-divisional approach to (information) security. It comprises numerous measures that are scheduled to be completed or at least initiated by the end of 2023. The Global Security Program currently comprises a total of around 80 projects. By the end of 2022, 35 of these projects had already been completed. A further 32 projects are in the implementation or are close before completion.

We are thereby improving the global Information Security Management System (ISMS), which helps the Executive Board, management and all employees to protect sensitive information. The security measures within the ISMS primarily serve a preventive purpose by averting security risks. But we have also defined measures that enable us to identify attacks at an early stage and respond promptly.



## Successful certifications in 2022

### 1. ISO/IEC 27001:2013 in Düsseldorf

The GEA ISMS is based on the globally recognized ISO/IEC 27001:2013 standard. It also takes into account industry-specific requirements and is continuously improved by the Chief Information Security Officer (CISO) and approved by our Executive Board. One of the most significant milestones completed as part of the Global Security Program in early 2022 was the group certification of GEA Group, with sub-certification of two legal entities – GEA Group Aktiengesellschaft's corporate headquarters in Düsseldorf and GEA Group Services GmbH – according to ISO/IEC 27001:2013.

### 2. ISO/IEC 27001:2013 as well as IEC 62443 2-1 and IEC 62443 4-1 in Oelde

At the end of 2022, the companies of GEA's largest production location in Oelde, Germany – GEA Westfalia Separator Group GmbH, GEA Germany GmbH and GEA Mechanical Equipment GmbH – were similarly included in the scope of umbrella certification. Furthermore, secure product development at the Oelde location was certified according to the IEC 62443 4-1 standard and GEA production according to the IEC 62443 2-1 standard. This makes GEA the first European company to be awarded this certificate.

The very extensive audits in Düsseldorf and Oelde were each carried out by German inspection and certification agency TÜV Rheinland. In total, hundreds of individual measures had to be implemented and audited. But that was just the beginning: Certifications of further GEA sites will be added in 2023. Ultimately, our long-term goal is to make GEA as secure as possible worldwide.

### 3. Cyber Essentials certification in the UK

In 2022, the information security processes of GEA Mechanical Equipment UK Limited in Milton Keynes, UK, were again reviewed according to the “Cyber Essentials” certification, which is required by the British government and overseen by the National Cyber Security Centre (NCSC). The successful recertification demonstrates to customers that GEA is able to adequately protect its own data and that of others. UK Cyber Essentials certification is relevant across industries, but especially to the shipping industry, which has strong ties to the UK's Royal Navy.





### Information and Cyber Security team

The central Information and Cyber Security team is currently consisting of 20 employees covering an extensive range of security topics. Among other things, these include information security governance, information security compliance management, information security and data protection audit management, identity and access management, security incident management, physical security, product security, operational technology (OT) security and business continuity as well as crisis management. The team receives regular intensive trainings and is sensitized by visits to different GEA sites and customers so that they are prepared for their responsibilities at all times.

Worldwide, the network of Local Information Security Officers (LISO) ensures local implementation of the ISMS and ongoing support for all security and business continuity topics. The LISOs are closely linked to the central team through the Regional and Business Information Security Officers (RISO/BISO).



*“New security trainings ensures that employees have the skills and knowledge they need to perform their duties in a secure way and protect GEA.”*

Iskro Mollov,  
Chief Information Security Officer

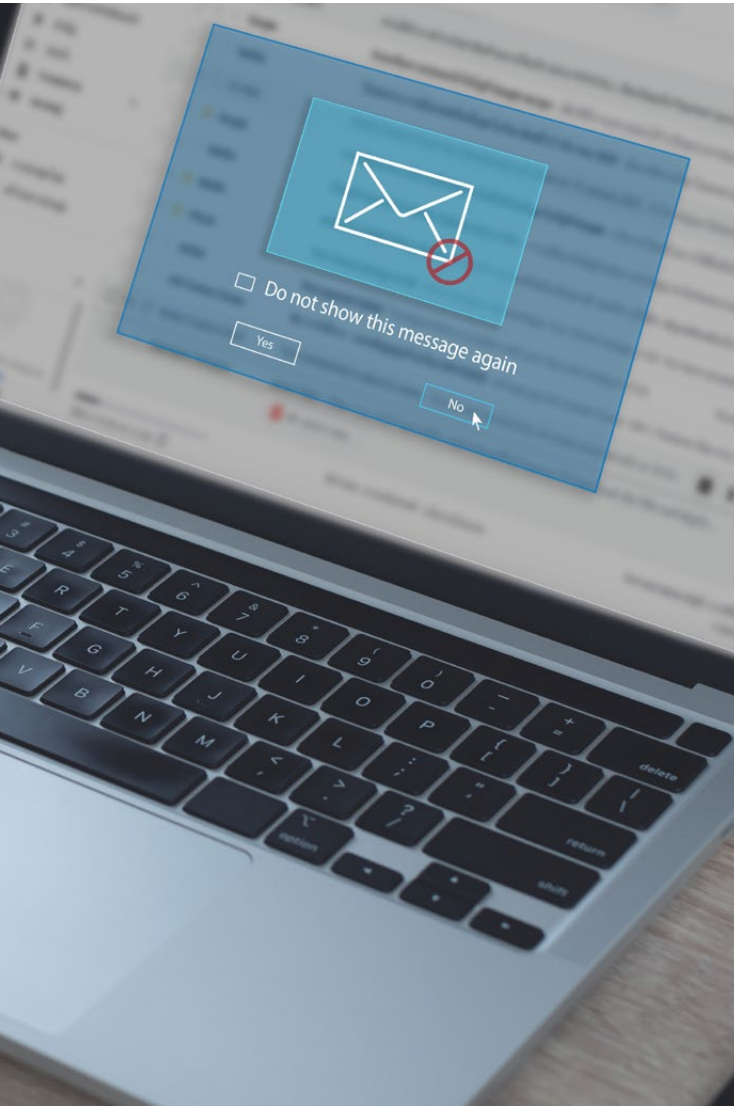
### Raising awareness for everyone

However, threats to information security lurk not only outside the company. Cyber criminals also attempt to initiate their attacks using individual employees. To raise employee awareness of potential security risks, we communicate regularly about the varied aspects, dangers and preventive measures associated with information security.

In 2022, a group-wide phishing simulation attracted a great deal of attention. In addition, we regularly publish animated videos on various everyday threat scenarios on the internal social network. These include, for instance, remote access, social engineering, e-mail security, visitor regulations, clear desk and clear screen policies. The easy-to-grasp videos include relevant tips and guidelines as well as information on how and where to report any concerns or security incidents. All of the videos plus further advice on information security are available on the information security portal on our intranet.

Other content includes a fun quiz to test knowledge and educate users at the same time, a “password checker” to verify the security of the employees’ password and a “digital classification wheel” to help users classify documents correctly. General training materials and answers to frequently asked questions are also available.

A lock screen installed on all GEA computers ensures that our employees are reminded of the importance of information security on a daily basis.



## Phishing simulation and mandatory information security trainings

What are the security risks I face at work every day and how can I protect myself from them? How do I identify social engineering and malware attacks? And how can information be properly classified so that it does not fall into the wrong hands? These and numerous other questions were answered in two information security trainings at GEA. Trainings that are more important than ever. That is because, among other reasons, they help to prevent, detect and successfully react against attacks.

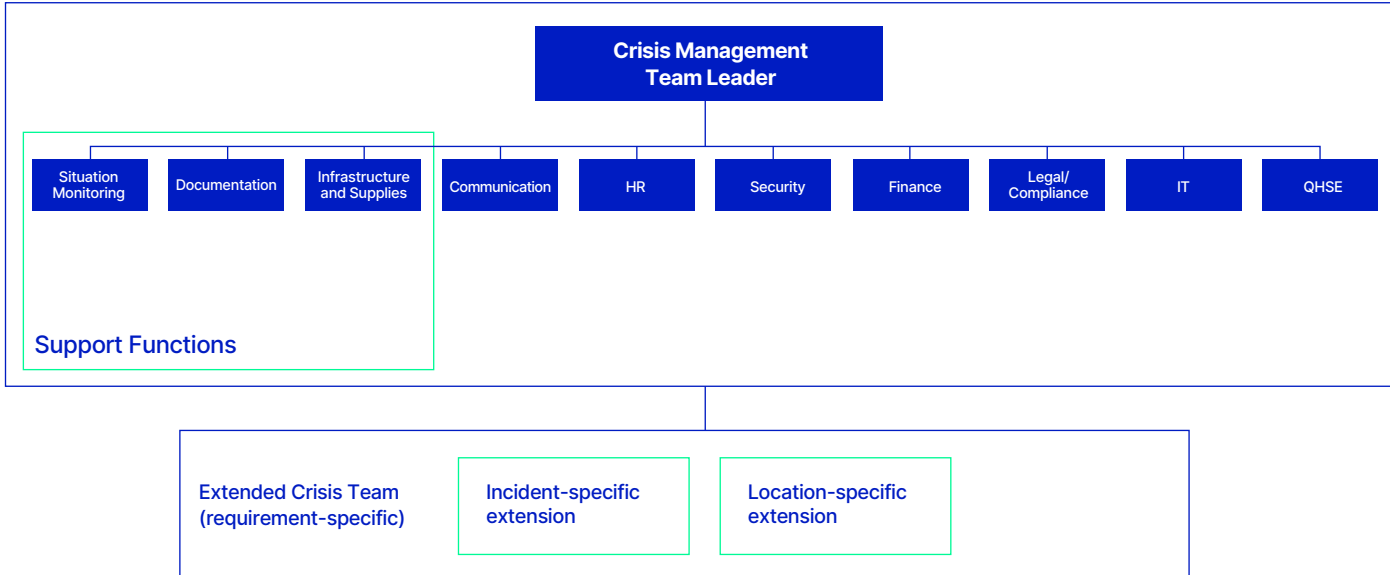
To assess the information security literacy of the workforce in identifying suspicious e-mails, we conducted our first phishing simulation in September 2022. Each and every internal or external person with a GEA e-mail address received the same phishing e-mail.

To further raise awareness of the topic, two new e-learning on information security were offered. These aim to ensure that all employees have the skills and knowledge they need to protect GEA. The mandatory training courses are based on two GEA information security policies that

are relevant and mandatory for all employees: "Information security requirements for Human Resources" and "Information classification and handling regarding confidentiality".

Among other aspects, the "Information security requirements for Human Resources" policy defines the rules for using the Internet securely, for secure e-mail management, secure management of information and IT devices in the office and while traveling, secure management of visitors or for the correct reporting of information security violations and incidents. The second training covers the issue of information classification and handling. GEA's information classification categories define appropriate protection measures for the entire life cycle of information – from creation through storage and distribution down to destruction.

## Crisis Management Team



### Crisis Management team

The Crisis Management team is led by the Chief Information Security Officer. The team members come from a range of business areas, including Communications, HR, Security, Finance, Legal/Compliance, IT and QHSE. The team is tasked with the systematic and efficient handling of corporate risks that could result from legal, security, IT, occupational safety or other events and incidents.

### War in Ukraine

GEA has demonstrated effective crisis management within the context of the war in Ukraine. As early as December 2021, we established a task force focusing on “financial risks” due to the tense situation. Immediately after the outbreak of war in February 2022, a crisis situation was declared internally and the crisis team was alerted.

Three goals were established for crisis management:

1. Protect human lives
2. Protect GEA's assets
3. Analyze impact on business activities and ensure their continuity

Examples of personal protection measures taken included the evacuation of employees and their families to safe third countries. In addition, employees were supported in finding accommodation and a place to work in the respective host countries, and psychological support was arranged for GEA's Ukrainian and Russian employees and their families.

To safeguard GEA assets, for instance, the sites and employee access in Ukraine were temporarily separated from GEA's IT network. We have taken additional security measures to ward off potential cyberattacks from Russia and Belarus, coupled with the improvement of firewall rules or restricting access rights for accounts.

Following an assessment of the impact on business activity, we can report that business in Ukraine was able to be continued after being initially halted. Business activities in Russia were scaled back. GEA will maintain limited operations to continue producing vital food and medicines for the local population. The risk of restricted gas supplies due to a gas embargo in Europe was countered by preparing business continuity plans for the 38 European sites.

# APPENDIX



# Reporting profile

With its Sustainability Report, GEA informs its investors, customers, employees as well as independent institutions such as non-governmental organizations (NGOs) and all other interested parties annually about the implementation of sustainability as part of the corporate strategy with regard to ecology and social responsibility. Economic development is presented in detail in the current Annual Report. The Sustainability Report was prepared with reference to the GRI Standards issued by the Global Reporting Initiative.

The facts and figures presented in this Sustainability Report relate to fiscal year 2022 (January 1 to December 31). Unless otherwise indicated, the disclosures generally cover the global activities of the entire group, i.e. GEA Group Aktiengesellschaft and all companies over which GEA has control or can exercise significant influence. Subsidiaries, associates and joint ventures that meet this definition are included in the list

of investments in the notes to the consolidated financial statements in section 12.4 of the 2022 Annual Report. In addition to this Sustainability Report, we have published a non-financial statement in our 2022 Annual Report that meets the reporting requirements of the CSR-Richtlinie-Umsetzungsgesetz (CSR Directive Implementation Act) (section 315 in conjunction with sections 289c to 289e of the Handelsgesetzbuch [German Commercial Code]).

The Sustainability Report also serves as a progress report for the United Nations Global Compact. Further information on the topics presented in the Sustainability Report is available on the Internet at [www.gea.com](http://www.gea.com). The previous Sustainability Report was published in March 2022 and is still available on the Internet.

## GRI 102-44

This overview shows which stakeholder groups found which topics most important:

### Stakeholder group assessment of topic materiality

	Investors	Customers	Industry	NGOs/ civil society	Sustainability experts (scientists, consultants)	Employees
CO <sub>2</sub> emissions & decarbonization	•	•	•	•	•	•
Energy consumption	•		•		•	•
Waste management	•	•	•	•	•	
Water consumption	•	•		•	•	
Wastewater management				•		
Green logistics & transportation	•	•	•	•		•
Sustainable innovation & products		•	•		•	
Circular economy		•		•		
Product stewardship		•	•			
Sustainable procurement	•	•	•	•	•	•
Human rights				•		•
Diversity, inclusion & equal opportunity	•					•
Occupational health & safety		•				•
Talent acquisition & retention						•
Training & talent development						•
Business ethics & corporate responsibility	•	•		•		
Data protection & information security	•	•	•			•

# Facts and figures

## Sustainability at GEA

### Management system

	Coverage rate 2022 (in %)	Number of certified Production sites 2022	Number of Production sites total
DIN EN ISO 9001:2015	66	38	58
DIN EN ISO 14001:2015	38	22	58
DIN EN ISO 45001:2018	33	19	58
DIN EN ISO 50001:2018	7	4	58

**ISO 9001** is the standard that specifies requirements for a quality management system. Organizations use the standard to demonstrate their ability to consistently provide products and services that meet customer and regulatory requirements. The standard also helps organizations to continually improve their quality management system.

**ISO 14001** is the international standard that specifies requirements for an effective environmental management system (EMS). It is part of the ISO 14000 family of standards on environmental management.

**ISO 45001** specifies requirements for an occupational health and safety (OH&S) management system, and gives guidance for its use. It was published by the International Organization for Standardization in March 2018.

**ISO 50001** specifies requirements for establishing an energy management system. The intended outcome is to allow an organization to continually improve its energy performance.

## Employees<sup>1</sup>

### Employees by contract type and gender

	Total employees		thereof permanent		thereof temporary	
	Number	in %	Number	in %	Number	in %
Male	14,668	80.4	13,938	76.4	730	4.0
Female	3,568	19.6	3,376	18.5	192	1.1
<b>GEA total</b>	<b>18,236</b>	<b>100.0</b>	<b>17,314</b>	<b>94.9</b>	<b>923</b>	<b>5.1</b>

### Employees by contract type and region

	Total employees		thereof permanent		thereof temporary	
	Number	in %	Number	in %	Number	in %
Germany, Austria, Switzerland	6,166	98.6	6,078	98.6	88	1.4
thereof Germany	5,993	98.5	5,905	98.5	88	1.5
Eastern Europe	818	87.9	719	87.9	99	12.1
Western Europe, Middle East & Africa	2,716	98.9	2,685	98.9	31	1.1
Northern and Central Europe	3,173	96.6	3,065	96.6	108	3.4
Asia-Pacific	3,049	79.3	2,418	79.3	631	20.7
North America	1,694	99.8	1,691	99.8	3	0.2
Latin America	621	99.8	620	99.8	1	0.2
<b>Total</b>	<b>18,236</b>	<b>94.7</b>	<b>17,275</b>	<b>94.7</b>	<b>961</b>	<b>5.3</b>

### Employees by employment type and gender

	Total employees		thereof male		thereof female	
	Number	in %	Number	in %	Number	in %
Full-time	17,243	94.6	14,315	97.6	2,928	82.1
Part-time	993	5.4	353	2.4	640	17.9
<b>Total</b>	<b>18,236</b>	<b>100</b>	<b>14,668</b>	<b>80.4</b>	<b>3,568</b>	<b>19.6</b>

<sup>1</sup> Full-time equivalents excluding apprentices and dormant employment relationships

## Total workforce<sup>1</sup>

	12/31/22	in %	12/31/21	in %	Change absolute
<b>GEA employees</b>	<b>18,236</b>	<b>94.7</b>	<b>18,143</b>	<b>94.2</b>	<b>94</b>
external employees	1,018	5.3	1,109	5.8	-91
thereof contingent workers	915	89.8	1,004	90.5	-90
of which independent contractors	104	10.2	105	9.5	-1
<b>Total</b>	<b>19,255</b>	<b>100.0</b>	<b>19,252</b>	<b>100.0</b>	<b>3</b>

<sup>1)</sup> Figures based on full-time equivalents  
Total employee capacity excluding apprentices and dormant employment contracts; excluding unconsolidated entities

## Members of the governing bodies and employees by gender

in %	December 31, 2022	
	thereof male	thereof female
Supervisory Board	58.3	41.7
Executive Board	100.0	0.0
Top Management (reporting line 1 to 3)*	81.4	18.6
Middle Management (reporting line 4 and 5)*	85.5	14.5
Lower/Junior Management (reporting line 6 and 7)*	90.5	9.5
Management total (reporting line 1 to 7)*	85.0	15.0
<b>Total employees</b>	<b>80.4</b>	<b>19.6</b>

\* Reporting line to the Executive Board

## Apprenticeships in Germany

	GEA 12/31/2022	GEA 12/31/2021
Apprentices	362	363
Apprenticeship rate (in %)	5.7	5.9

## Total number and rate of new hires by region, age group and gender

December 31, 2022	Age <30			Age 30 – 50			Age > 50			GEA total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Germany, Austria, Switzerland</b>												
Total number of new hires	103	36	139	241	84	325	37	13	50	382	132	514
Rate of new hires (%)	19.8	25.5	21.0	9.8	12.6	10.4	1.7	2.1	1.8	7.3	9.4	7.7
<b>Eastern Europe</b>												
Total number of new hires	24	13	37	67	36	103	8	4	12	99	54	153
Rate of new hires (%)	72.6	160.2	89.8	16.8	36.9	20.8	6.2	13.4	7.6	17.6	38.6	21.8
<b>Western Europe, Middle East &amp; Africa</b>												
Total number of new hires	70	27	97	129	50	179	13	5	19	212	82	294
Rate of new hires (%)	36.8	56.5	40.8	9.2	14.2	10.3	1.9	2.9	2.1	9.3	14.2	10.3
<b>Northern and Central Europe</b>												
Total number of new hires	96	34	130	189	66	255	62	22	84	348	121	469
Rate of new hires (%)	51.6	79.1	56.7	14.9	22.9	16.4	5.2	7.9	5.7	13.1	20.1	14.4
<b>Asia-Pacific</b>												
Total number of new hires	124	21	145	271	45	316	13	2	15	408	67	475
Rate of new hires (%)	65.2	48.5	62.1	14.0	10.4	13.3	3.4	2.5	3.3	16.3	12.2	15.6
<b>North America</b>												
Total number of new hires	71	21	93	123	37	161	47	14	62	242	73	315
Rate of new hires (%)	103.9	154.5	112.4	20.3	30.2	21.9	6.7	10.0	7.3	17.5	26.1	19.0
<b>Latin America</b>												
Total number of new hires	27	10	38	79	29	108	6	2	8	112	42	154
Rate of new hires (%)	51.5	68.7	55.3	24.1	32.2	25.9	7.0	9.4	7.5	24.1	32.1	25.8
<b>Total</b>												
Total number of new hires	516	162	678	1,099	347	1,446	187	63	250	1,802	572	2,374
Rate of new hires (%)	41.6	52.2	43.7	13.1	16.9	13.8	3.4	4.7	3.7	12.0	15.5	12.6



## Total number and rate of employee departures by region, age group and gender

December 31, 2022	Age <30			Age 30 – 50			Age > 50			GEA total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
<b>Germany, Austria, Switzerland</b>												
Number of departures	34	12	47	134	48	182	164	58	222	333	118	451
Departure rate (in %)	6.6	8.7	7.1	5.4	7.2	5.8	7.3	9.7	7.8	6.4	8.4	6.8
<b>Eastern Europe</b>												
Number of departures	20	4	24	169	30	199	44	8	51	233	41	274
Departure rate (in %)	61.2	43.9	57.8	42.3	30.1	39.9	33.5	23.6	31.5	41.4	29.4	39.0
<b>Western Europe, Middle East &amp; Africa</b>												
Number of departures	31	10	40	125	40	165	49	16	64	205	65	270
Departure rate (in %)	16.2	20.5	17.1	9.0	11.4	9.5	6.9	8.8	7.3	8.9	11.4	9.4
<b>Northern and Central Europe</b>												
Number of departures	43	12	55	172	48	220	112	31	144	327	91	418
Departure rate (in %)	22.8	27.9	23.8	13.5	16.6	14.1	9.4	11.5	9.8	12.3	15.1	12.8
<b>Asia-Pacific</b>												
Number of departures	41	6	47	317	44	361	42	6	48	401	55	456
Departure rate (in %)	21.6	13.4	20.1	16.4	10.2	15.2	11.5	7.2	10.7	16.1	10.0	15.0
<b>North America</b>												
Number of departures	18	3	21	82	16	97	96	19	114	195	38	233
Departure rate (in %)	25.9	24.8	25.7	13.4	12.8	13.3	13.6	13.1	13.5	14.1	13.5	14.0
<b>Latin America</b>												
Number of departures	9	2	11	47	13	60	14	4	18	70	19	89
Departure rate (in %)	16.1	16.1	16.1	14.4	14.4	14.4	16.2	16.1	16.2	14.9	14.9	14.9
<b>Total</b>												
Number of departures	196	49	245	1,046	238	1,284	521	141	662	1,763	428	2,191
Departure rate (in %)	15.8	15.8	15.8	12.5	11.6	12.3	9.6	10.6	9.8	11.7	11.6	11.7

## Total number of departures

December 31, 2022	Number	in %
Voluntary employee departures	1,255	6.7
Involuntary employee departures	733	3.9
Retirement	203	1.1
<b>Total</b>	<b>2,191</b>	<b>11.7</b>

## Job functions

December 31, 2022	Total		thereof employees		thereof executives	
	Number	%	Number	%	Number	%
<b>Employees in revenue-generating functions</b>	<b>10,565</b>	<b>100.0</b>	<b>9,073</b>	<b>100.0</b>	<b>1,492</b>	<b>100.0</b>
thereof male	9,201	87.1	7,890	87.0	1,311	87.9
thereof female	1,364	12.9	1,183	13.0	181	12.1
<b>Employees in MINT functions</b>	<b>8,770</b>	<b>100.0</b>	<b>7,961</b>	<b>100.0</b>	<b>809</b>	<b>100.0</b>
thereof male	8,023	91.5	7,254	91.1	768	95.0
thereof female	747	8.5	707	8.9	41	5.0
<b>GEA employees – total</b>	<b>18,236</b>	<b>100.0</b>	<b>15,760</b>	<b>100.0</b>	<b>2,477</b>	<b>100.0</b>
thereof male	14,668	80.4	12,566	79.7	2,103	84.9
thereof female	3,568	19.6	3,194	20.3	374	15.1

## Internal vs. external hiring ratio

1/1/2022 – 12/31/2022	New hires		Hiring ratio	
	Number	%		%
<b>Management position hires*</b>	<b>143</b>	<b>100.0</b>		
thereof external	59	41.3		
thereof internal	84	58.7		

\*) related to positions with global classification level (1–6)

## Training

	2022
Training hours per employee	9.8
Training costs per employee (in EUR)	1,007

## Occupational health & safety

### Work safety numbers<sup>1</sup>

Per million hours worked	2022	2021 <sup>2</sup>
Lost Time Injuries <sup>3</sup>	197	206
Accidents with sequence of death	1	0
Lost Time <sup>4</sup>	3,986	5,140
Lost Time Injury Frequency Rate <sup>5</sup>	4.98	5.17
Lost Time Injury Severity Rate <sup>6</sup>	101	129
Proactive Incident Rate <sup>7</sup>	317	264
<b>Total Recordable Injury Frequency Rate<sup>8</sup></b>	<b>31.96</b>	<b>29.16</b>
Sites without occupational accidents with downtime, in percentage of all sites	74	77

1) Accidents and incidents are to be reported for all: GEA Employees, temporary employees, students/interns, trainees.

Data is recorded manually and decentrally

2) The 2021 numbers have been adjusted due to subsequent reporting.

3) The number of work-related injuries with ≥ 1 day of lost time

4) Lost Days (full calendar days, without the day of the accident). GEA is counting Lost Days up to 182 days in accordance with the European Statistics on Accidents at Work (ESAW) since 2018.

5) The number of lost time injuries x 1,000,000 divided by the number of working hours in reporting period

6) The number of lost days x 1,000,000 divided by the of working hours in reporting period

7) The number of other incidents (e.g. unsafe situations, unsafe acts, near misses) x 1,000,000 divided by the number of working hours in reporting period

8) The sum of lost time injuries without lost time x 1,000,000 divided by the number of hours in reporting period

# Environmental protection

## Greenhouse gas emissions<sup>1</sup>

in t CO <sub>2</sub> e	2022	2021 <sup>2</sup>	Change to previous year in %	Change to base year 2019 in %
Scope 1: Direct greenhouse gas emissions	32,292	35,617	-9.3	-9.2
Scope 2: Indirect greenhouse gas emissions <sup>3</sup>	726	15,780	-95.4	-97.7
<b>Scope 1 and 2 greenhouse gas emissions total<sup>4</sup></b>	<b>33,018</b>	<b>51,397</b>	<b>-35.8</b>	<b>-51.1</b>
Scope 3.1: Purchased products and services <sup>5</sup>	1,220,912	1,174,183	4.0	-1.7
Scope 3.2: Capital goods <sup>5</sup>	17,764	16,732	6.2	0.4
Scope 3.3: Fuel and energy-related emissions (not in Scope 1 and Scope 2) <sup>5</sup>	15,089	16,701	-9.7	12.0
Scope 3.4: transportation and distribution (upstream) <sup>5</sup>	109,493	110,539	-0.9	-6.3
Scope 3.5: Waste	906	925	-2.1	-16.8
Scope 3.6: Business travel <sup>6</sup>	12,464	5,864	112.6	-32.3
Scope 3.7: Employee commuting	6,261	7,121	-12.1	-37.6
Scope 3.11: Use of sold products <sup>7</sup>	35,190,372	26,511,385	32.7	42.1
Scope 3: Total upstream greenhouse gas emissions	1,382,889	1,332,065	3.8	-2.6
Scope 3: Total downstream greenhouse gas emissions	35,190,372	26,511,385	32.7	42.1
<b>Scope 3: Total greenhouse gas emissions</b>	<b>36,573,261</b>	<b>27,843,450</b>	<b>31.4</b>	<b>39.7</b>
<b>Scope 1 – 3 total</b>	<b>36,606,279</b>	<b>27,894,847</b>	<b>31.2</b>	<b>39.4</b>

1) Greenhouse gas emissions were calculated using the UK DEFRA 2019 to 2022 emission factors, where applicable.

2) Due to changes in allocation and calculation, the basis of reporting locations was adjusted for 2021.

3) Market-based emissions according to GHG Protocol Scope 2 guidance. Where no contract-specific emission factors were available, the GHG Protocol/IEA Ver. 17 (04/2022) - IEA 2020 emission factors were used. Scope 1 and 2 emissions calculated using the location-based method: 31,689 t CO<sub>2</sub>e in 2022.

4) Market-based emissions according to GHG Protocol Scope 2 guidance. Where no contract-specific emission factors were available, the GHG Protocol/IEA Ver. 17 (04/2022) - IEA 2020 emission factors were used. Scope 1 and 2 emissions calculated using the location-based method: 63,981 t CO<sub>2</sub>e in 2022.

5) Emissions were calculated using a recognized input-output model, which is not subject to the limited assurance engagement of KPMG AG Wirtschaftsprüfungsgesellschaft. Based on a global impact analysis of sectoral and international supply chains, direct and indirect effects of corporate activities along the supply chain were determined, including the CO<sub>2</sub> emissions listed (other climate-impacting gases neglected). For 2021, the calculated values from 2019 were extrapolated based on the respective purchasing volume.

6) Global air travel; rental cars for Europe and USA; travel by German rail estimated based on 2021.

7) Emissions calculated through direct consumption data with a coverage rate for the year 2022 approx. 80%. For the emissions of the use phase (3.11), an average life time of 18.11 years was assumed for GEA machinery and equipment in 2022.

## Direct greenhouse gas emissions (Scope 1)<sup>1</sup>

in t CO <sub>2</sub> e	2022	2021 <sup>2</sup>	Change to previous year in %
Asia-Pacific (incl. China)	1,678	1,541	8.9
Germany, Austria, Switzerland & Eastern Europe	17,573	18,877	-6.9
Northern and Central Europe	2,055	2,348	-12.5
Latin America	8	8	-6.0
North America	5,660	5,325	6.3
Western Europe, Middle East & Africa	5,319	7,518	-29.2
<b>Scope 1 total</b>	<b>32,292</b>	<b>35,617</b>	<b>-9.3</b>

in t CO <sub>2</sub> e	2022	2021 <sup>2</sup>	Change to previous year in %
Separation & Flow Technologies Division	10,257	10,907	-6.0
Liquid & Powder Technologies Division	2,448	3,104	-21.1
Food & Healthcare Technologies Division	6,741	9,055	-25.6
Farm Technologies Division	5,164	5,063	2.0
Heating & Refrigeration Technologies Division	2,466	2,761	-10.7
Global Corporate Center	5,216	4,727	10.3
<b>Scope 1 total</b>	<b>32,292</b>	<b>35,077</b>	<b>-9.3</b>

## Indirect greenhouse gas emissions (Scope 2)<sup>1</sup>

in t CO <sub>2</sub> e, market-based	2022	2021 <sup>2</sup>	Change to previous year in %
Asia-Pacific (incl. China)	0	6,675	-100
Germany, Austria, Switzerland & Eastern Europe	237	1,472	-84
Northern and Central Europe	490	2,528	-81
Latin America	0	117	-100
North America	0	4,249	-100
Western Europe, Middle East & Africa	0	739	-100
<b>Scope 2 total<sup>3</sup></b>	<b>726</b>	<b>15,780</b>	<b>-95</b>

in t CO <sub>2</sub> e, market-based	2022	2021 <sup>2</sup>	Change to previous year in %
Separation & Flow Technologies Division	0	3,868	-100
Liquid & Powder Technologies Division	490	3,651	-86.6
Food & Healthcare Technologies Division	220	3,228	-100
Farm Technologies Division	181	2,854	-93.7
Heating & Refrigeration Technologies Division	56	2,178	-97.4
Global Corporate Center	0	0	-
<b>Scope 2 total</b>	<b>726</b>	<b>15,780</b>	<b>-95.4</b>

1) Greenhouse gas emissions were calculated using the UK DEFRA 2019 to 2021 emission factors where applicable.

2) Adjusted due to changes in allocation and calculation as well as additions and disposals of companies.

3) Market-based emissions according to GHG Protocol Scope 2 guidance. Where no contract-specific emission factors were available, the GHG Protocol/IEA Ver. 16 (11/2021) – IEA 2020 emission factors were used. Scope 2 emissions calculated using the location-based method: 31,504 t CO<sub>2</sub>e in 2021.

## Energy consumption

in MWh	2022	2021 <sup>1</sup>	Change to previous year in %
Total energy consumption	243,498	258,564	-5.8
thereof electricity	90,825	89,201	1.8
thereof self-generated electricity from photovoltaics	2,852	1,612	76.9
thereof electricity from renewable energies	87,973	48,441	81.6
thereof electricity from non-renewable energies	0	39,148	-100.0
thereof district heating	4,253	4,019	5.8
thereof natural gas	108,026	126,251	-14.4
thereof heating oil	2,251	2,648	-15.0
thereof others <sup>2</sup>	38,143	36,446	4.7
Number of reporting sites <sup>3</sup>	85	90	-
Energy intensity (ratio MWh to EUR 1 million revenue)	47.1	55.0	-14.2
Tons of CO <sub>2</sub> e per MWh	0.14	0.20	-31.8

1) Due to changes in allocation and calculation, the basis of reporting locations was adjusted for 2021.

2) Fossil fuels such as Diesel, gasoline, kerosene.

3) Decrease in the number of sites due to the sale of operations and site relocations.

## Water

in m <sup>3</sup>	2022	2021 <sup>1</sup>	Change to previous year in %
Water withdrawal total <sup>2</sup>	347,972	359,047	-3.1
thereof municipal water	289,566	301,581	-4.0
thereof groundwater	58,406	57,466	1.6
Water discharge total	297,761	307,564	-3.2
thereof municipal waste water	283,193	289,362	-2.1
thereof wastewater treatment on site	14,568	18,202	-20.0
Water consumption total	50,210	51,483	-2.5
Ratio of water consumption to water withdrawal (in %)	14.4	14.3	0.6
Number of reporting sites <sup>3</sup>	84	89	-
Water intensity (ratio m <sup>3</sup> to EUR 1 million revenue)	67.4	76.3	-11.8
Water intensity (ratio m <sup>3</sup> to 1 FTE)	19.2	19.8	-3.3

1) Due to changes in allocation and calculation the basis of reporting sites was corrected for 2021.

2) In 2021, two leakages (total water withdrawal (9,700 + 8,200 = 17,900 m<sup>3</sup>) were detected in France and Italy

3) Decrease in the number of sites due to the sale of operations and site relocations.

## Waste

in t	2022	2021 <sup>1</sup>	Change to previous year in %
<b>Waste generation total<sup>2</sup></b>	<b>13,437</b>	<b>13,339</b>	<b>0.7</b>
thereof hazardous waste	904	883	2.4
thereof non-hazardous waste	12,533	12,455	0.6
Waste directed to disposal, non-hazardous <sup>2</sup>	1,391	1,437	-3.2
thereof landfill	536	528	1.5
thereof incineration with energy recovery	847	895	-5.4
thereof incineration without energy recovery	8	14	-42.9
thereof other disposal operations <sup>2</sup>	-	-	-
Waste directed to disposal, hazardous <sup>2</sup>	904	883	2.4
thereof landfill	-	-	-
thereof incineration with energy recovery	-	-	-
thereof incineration without energy recovery	-	-	-
thereof other disposal operations <sup>2,3</sup>	904	883	2.4
Waste diverted from disposal, non-hazardous	11,142	11,018	1.1
thereof preparation for re-use	-	-	-
thereof recycling	11,142	11,018	1.1
thereof other recovery operations	-	-	-
Waste recovery rate (in %) <sup>4</sup>	95.95	95.94	0.0
Recycling rate (in %)	82.9	82.60	0.4
Number of reporting sites <sup>5</sup>	72	75	-

1) Due to changes in allocation and calculation as well the basis of reporting sites was corrected for 2021.

2) Treatment off-site

3) Treatment of halogen-free machining emulsions and solutions and aqueous rinsing liquids.

4) Waste recovery rate = (Recycling plus incineration of non-hazardous waste directed to disposal with energy recovery plus other recovery operations of non-hazardous waste diverted from disposal) / Waste generation total

5) Decrease in the number of sites due to the sale of operations and site relocations.

## Composition of waste

in t	2022			2021 <sup>1</sup>		
	Total waste generation	Waste diverted from disposal <sup>2</sup>	Waste forwarded to disposal	Total waste generation	Waste diverted from disposal <sup>2</sup>	Waste forwarded to disposal
Household waste	1,391	–	1,391	1,437	–	1,437
Packaging material: paper, cardboard	678	678	–	683	683	–
Paper and cardboard	258	258	–	175	175	–
Packaging material: plastics	279	279	–	257	257	–
Packaging material: wood	1,835	1,835	–	1,777	1,777	–
Metal	8,093	8,093	–	8,127	8,127	–
Aqueous rinsing liquids containing hazardous substances <sup>3</sup>	432	432	–	475	475	–
Halogen-free processing emulsions and solutions <sup>3</sup>	473	473	–	409	409	–
<b>Total</b>	<b>13,437</b>	<b>12,046</b>	<b>1,391</b>	<b>13,339</b>	<b>11,902</b>	<b>1,437</b>

1) The basis of the reporting sites was adjusted for the year 2021 because of changes in allocation and calculation as well as additions and disposals of companies.

2) Total of waste directed to reuse through recycling plus hazardous waste for disposal through other disposal methods

3) Hazardous waste

## Key indicators for waste

	2022	2021 <sup>1</sup>	Change to previous year in %
Ratio of hazardous waste directed to disposal to total waste generation (in %)	6.73	6.62	1.6
Ratio of waste recovery rate to total waste generation (in %)	95.95	95.94	0
Total waste generation in tons per EUR 1 million revenue	2.6	2.8	-8.3
Total waste generation in tons per employee (full-time)	0.74	0.74	0.6

1) The basis of the reporting sites was adjusted for the year 2021 because of changes in allocation and calculation as well as additions and disposals of companies.

## Supply chain

### Share of local procurement in total volume (in %)<sup>1</sup>

	2022	2021
Asia-Pacific (excluding China)	90	93
Germany, Austria, Switzerland & Eastern Europe	80	84
Latin America	93	94
North America	94	95
Northern and Central Europe	72	78
Western Europe, Middle East & Africa	84	92
<b>Global</b>	<b>83</b>	<b>87</b>

1) Excluding intragroup procurement (intralogistics)

### Share of region of origin in total volume (in %)

	2022	2021
Asia-Pacific	6	6
China	6	6
Germany, Austria, Switzerland	38	37
Eastern Europe	5	5
Latin America	2	3
North America	12	11
Northern and Central Europe	17	18
Western Europe, Middle East & Africa	14	15
<b>Global</b>	<b>100</b>	<b>100</b>

## Other

### Cooperation with institutions

in EUR	2022	2021
Business federations with voluntary membership	1,037,997	1,226,261
Interest groups	261,000	576,256
Local, regional or national political campaigns/ organizations/candidates	0	0
Other	46,000	0
<b>GEA total</b>	<b>1,344,997</b>	<b>1,802,518</b>

### Type of charitable donations

in EUR	2022	2021
Financial donations	1,346,967	383,408
Donations of time (volunteering) <sup>1</sup>	–	–
Donations in kind	0	48,245
Management consulting	–	–

1) Recording possible from 2023

### Other major expenditures in 2022

Organization name	Organization type	2022 in EUR
World Economic Forum	Business federation	212,793
German Mechanical Engineering Industry Association	Business federation	190,279
Accounting Standards Committee of Germany	Other	32,450

# TCFD Report



Since 2022, GEA has been following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in reporting on its approach to climate change. The TCFD was established by the Financial Stability Board in 2015 to develop a uniform framework for reporting climate-related financial impacts on companies. The framework covers climate-related risks and opportunities for businesses arising from the physical impacts of climate change or the transition to a lower-carbon economy. As part of our reporting to CDP (formerly Carbon Disclosure Project), we report annually on climate-related data, the associated strategies and corresponding transformation paths. In addition, we provide information on overarching climate-related issues in our annual and sustainability reports. How we address the challenges and opportunities related to climate change is described below in accordance with the TCFD structure and the four categories of governance, strategy, opportunity and risk management as well as metrics and targets.

## Governance

Our governance structure ensures close involvement of the Executive Board and the highest management level in climate-related risks and opportunities. Chief Sustainability Officer Dr. Nadine Sterley has overall responsibility for sustainability issues at GEA and thus also for the company's climate strategy. She reports directly to the CEO of GEA Group.

All members of the Executive Board, the Chief Executive Officers (CEOs) of the divisions and regions, and the Chief Human Resources Officer are part of the Global Executive Committee (GEC). This committee meets monthly to address such matters as strategic and operational issues, including topics related to climate change. In 2022, implementing our climate strategy was on the GEC's agenda several times. To date, the focus has been on developing and implementing the goal adopted by the GEC in June 2021 of achieving net-zero emissions along the entire value chain by 2040.

This includes, but is not limited to, the following topics:

- integrating the climate strategy into GEA's business model
- supervising implementation of the climate strategy as well as the progress of the targets resulting from it
- monitoring the appropriateness of regular reporting to the GEC



The GEC adopted the following resolutions on climate-related issues in 2022:

- **Photovoltaics:** In order to reduce greenhouse gas emissions, GEA has installed photovoltaic systems for its own electricity generation at its sites in Colognola ai Colli and Quinto di Treviso (Italy), Melbourne (Australia), 's-Hertogenbosch (Netherlands), Suzhou and Tianjin (China), and Vadodara (India). The 250-kilowatt plant in Vadodara, for instance, will save 343 tons of CO<sub>2</sub> and more than EUR 23,000 in operating costs per year. Other plants are currently projected or under construction in Janesville (USA), Koszalin (Poland) and Oelde (Germany), in Parma, Sala Baganza and Uzzano (all Italy). Further information can be found on page 70.
- **Factory of the Future:** After the first newly designed site in Koszalin, Poland, started production in 2022, the second “GEA Factory of the Future” is being built in Elsdorf, Germany. As with the plant in Poland, construction of the new site in Elsdorf follows the highest sustainability standards. These include in-house energy generation and greenhouse gas neutrality, as well as innovative, digital solutions for every link in the value chain. Further information can be found on page 4.
- **New Food:** The environmental impact of food production is enormous. At the same time, demand for high-quality, protein-rich foods is growing faster than the population. GEA is developing forward-looking technologies to manufacture high-quality proteins as the basis for foodstuffs and innovative new product developments in the New Food sector. Further information can be found on page 40 onwards.

In 2022, GEA's Supervisory Board was regularly informed by the full Executive Board about the development and implementation of the climate strategy.

Climate-related opportunities and risks are analyzed by the Risk Assessment and Advisory Committee (RAAC) across different corporate hierarchies. More information can be found in the “Opportunity and risk management” chapter.

## Strategy

GEA will be affected by the impact of climate change in the form of physical (including thunderstorms and rising sea levels) and transitory (including political and legal) risks. Equally, however, we will benefit from new market opportunities in connection with the decarbonization of the global economy. To deepen our proper understanding of the relevant climate-related risks and opportunities as well as to test the resilience of our strategy, GEA has analyzed scenarios for different time horizons. The scenario analysis was first conducted in 2022 with the involvement of a cross-functional team and based on external sectoral scenarios and studies. This involved assessing the impact along the entire value chain, from procurement to markets, in order to derive the market potential.

### Scenario analysis

#### Time frame

In our overarching analysis of climate-related opportunities and risks, we distinguish between different time horizons comprising short-term (up to 2030), medium-term (up to 2040) and long-term (up to 2050) analyses. In our scenario analyses, we focused primarily on the medium- and long-term time horizons. Both horizons are consistent with GEA's 2040 “net-zero” target as well as with regulatory requirements surrounding decarbonization that have a significant impact on transitory risks and generally cover the period up to 2050. At the same time, this time horizon fits well with the specific nature of physical climate change risks, which will increasingly crystallize over medium- to long-term time frames. Most established scenarios cover a period up to at least 2050.

### Selection of scenarios and key messages

GEA has followed the recommendation of the TCFD and conducted an analysis with two temperature scenarios that depict two very different development paths in relation to climate change. One focuses on successfully transforming the economy, thereby limiting global warming to a maximum of 1.5°C compared to the pre-industrial era, in line with the goals of the Paris Climate Agreement, and thereby also curbing the increase in physical climate risks. The other assumes limited success in transformation and adoption of additional climate policies, leading to a further increase in global temperatures by 2.7°C and significant physical climate risks. The International Energy Agency's (IEA) Net Zero Emissions (NZE) 2050 scenario was selected as the dominant scenario to examine potential transitory risks of a 1.5°C increase in global temperatures. It was supplemented by selected studies, especially for the agricultural sector, which is not covered by the energy-focused IEA scenarios<sup>1</sup>. In addition, GEA took account of the IEA's Stated Policies scenario to assess the transitory impacts of a 2.7°C global warming.

The RCP4.5 Intergovernmental Panel on Climate Change (IPCC) temperature pathway scenario was used as the dominant scenario to examine the potential physical impacts of climate change at 2.7°C global warming. For comparison purposes, we used the IPCC's RCP2.6 scenario, which reveals the physical risks in a world with successful global warming mitigation consistent with the goals of the Paris Agreement.

The following tables 1 and 2 summarize the most important messages of the IEA and IPCC scenarios for medium- to long-term time horizons.

**Table 1: Key features of the selected IEA transition scenarios**

	IEA NZE 2050	IEA Stated Policies
<b>General scenario characteristics</b>	A normative scenario that specifies a tailored pathway for the global energy sector to achieve net zero CO <sub>2</sub> emissions by 2050. The scenario considers solely energy-related emission reductions to achieve the targets. It corresponds to the highest ambition level of the Paris Climate Agreement to limit global warming to 1.5°C.	An exploratory scenario according to current policy frameworks, based on a sectoral assessment of specific policies already in place (e.g., nationally determined contributions), as well as policies announced by governments worldwide and reflected in official targets and plans. This scenario reflects global warming by 2.7°C.
Underlying reports	IEA (2021): Net Zero by 2050. A Roadmap for the Global Energy Sector	IEA (2017): Energy Technology Perspectives IEA (2021): World Energy Outlook 2021
<b>Core scenario narratives and impact drivers</b>	Macroeconomic assumption: economic growth (GDP USD 320 trillion) and population growth to 9.7 billion people by 2050	
Political/Regulatory	Sharp increase in CO <sub>2</sub> costs for fossil fuels (USD 200–250/ton CO <sub>2</sub> by 2050).	Moderate increase in CO <sub>2</sub> costs for fossil fuels (USD 50–95/ton CO <sub>2</sub> by 2050).
Technologies and Markets	Transition to low-carbon technologies and strong demand for low-carbon products. Lower coal demand also affects the raw materials market (e.g. in steel production).  The share of renewable energies in electricity generation reaches a global average of 88% by 2050.	Delayed transition from fossil fuel-based technologies and products to renewable energies.  The share of renewable energies in electricity generation reaches a global average of 60% by 2050.
System boundaries	Focus on energy-related sectors (very limited information relevant to food sector), limitations apply in terms of data availability and granularity.	

Source: International Energy Agency (IEA)

<sup>1</sup> See, among others, BCG (2021): Food for Thought: The Protein Transformation.

**Table 2: Most important characteristics of the selected IPCC scenarios**

	RCP 2.6/SSP1-2.6*	RCP 4.5/SSP2-4.5
<b>General scenario characteristics</b>	<p>IPCC scenario corresponding to the ambition level to limit the temperature increase to well below 2°C.</p> <p>The scenario describes a pathway in which significant reductions in emissions would occur as early as the 2020s. In this scenario, the emissions balance would already be net negative before the end of the 21st century.</p>	<p>Temperature increase by approx. 2.7°C</p> <p>This scenario describes a medium emissions pathway in which maximum greenhouse gas emissions are reached around 2040. Emissions then decline at a constant rate in the following years.</p>
Underlying reports (by way of example)	Climate Change 2021: The Physical Science Basis. Working Group I Contribution to the IPCC Sixth Assessment Report	
<b>Core scenario narratives and impact drivers</b>	<p>Moderate changes in the frequency of climate-related physical hazards.</p> <p>Although this scenario is associated with strong decarbonization, the impact of climate-related hazards such as floods or tropical cyclones would still increase.</p> <p>Global mean sea level rise of 44 cm by 2100.</p> <p>Extreme heat events would increase by a factor of 4.8.</p>	<p>Compared with the RCP2.6 scenario, the impacts of this scenario would be significantly greater due to the higher intensity of the physical risks that occur.</p> <p>This refers not only to acute but also to chronic physical risks.</p> <p>Global mean sea level rise of 56 cm by 2100.</p> <p>Extreme heat events would increase by a factor of 7.2.</p>
System boundaries	In particular, short- and medium-term physical climate risks are subject to a measure of uncertainty and are of limited use in terms of financial quantification, since climate science usually considers periods of 30 years.	

\*) RCP: Representative Concentration Pathways, SSP: Shared Socioeconomic Pathways  
Source: Intergovernmental Panel on Climate Change (IPCC)

System boundaries of the scenario analysis

In conducting the scenario analysis, GEA ensured comprehensive coverage of the most important business activities along the entire value chain, including the key supplier industries and sourcing countries, the relevant production locations and countries, and the key customer markets per operating business. All of these activities were assessed for relevant climate-related impacts.

Categories of risks and opportunities

We followed the TCFD classification with regard to the risk and opportunity categories we examined:

- Transitory risks were divided into the categories of political and legal risks, technology, market and reputation.
- In terms of physical risks, we make a distinction between acute and chronic risks. Acute risks arise from event-driven hazards, whereas chronic risks relate to long-term climate change. We analyzed seven climate-related hazard types; chronic risks include rising sea levels and, indirectly for all hazard types, rising temperatures, while acute risks include severe thunderstorms, tropical cyclones, floods, droughts, heat waves, and wildfires.
- The potential opportunities were classified into the dimensions of resource efficiency, energy sources, products and services, markets, and resilience.

#### Approach for identifying and assessing risks and opportunities

In the first step, GEA conducted a qualitative analysis of a 1.5°C and a 2.7°C scenario. This aimed to answer the question of what types of climate risks and opportunities could lead to significant impacts along our entire value chain in 2030 and 2050. For transitory impacts, we assessed the potential impact on the value chain of key scenario assumptions and influencing factors, such as CO<sub>2</sub> and energy costs, technology plans, and market development. This took into account purchasing volumes and countries of origin, energy consumption profiles and cost structures of our production sites as well as key target markets.

The links in the value chain with potentially the highest physical risk were identified on the basis of physical risk profiles of those countries that are relevant for GEA Group's purchasing, production and sales activities. Taking into account hazard-related frequency change, we identified China, India, Germany, and the USA as the countries relevant to us that could potentially be most affected by physical risks such as tropical cyclones, rising sea levels and flooding. The analysis revealed that the focus of quantifying climate-related impacts should be on our production sites, as this is where the greatest potential losses are expected to occur.

In a second step, we performed an in-depth analysis of the opportunities and risks identified in order to assess and quantify the potential financial impact. For transitory risks, the first in-depth analysis focused on steel purchasing and the associated changes in production costs in relation to different steel production routes (primary and secondary) for both scenarios. Based on GEA's cost and purchasing structure for steel, the potential financial implications were derived, allowing for the sector-related climate scenarios. To investigate our potential market and product opportunities in the alternative proteins (new food) market with a sensitivity analysis, we considered various growth rates for the protein market from recognized studies depending on the regulatory environment, consumer behavior and technological development. The growth rates resulting from these external insights were combined with GEA's 2022 revenue in alternative food and protein applications. The third in-depth analysis on transitory impacts focused on demand changes in the heat pump market, with future scenario-based growth rates applied to GEA's current revenue for both scenarios. Subsequently, both the risks and opportunities resulting from the in-depth analysis were compared with GEA management's assessment.

The identified and assessed risks and opportunities are presented in the following exclusively in the relevant dominant scenario.

## The three most significant climate-related transitory risks and opportunities in the 1.5°C scenario

	Possible risks in a 1.5°C scenario	Possible opportunities in a 1.5°C scenario	
<b>Possible risks or opportunities for GEA identified in a 1.5°C scenario</b>	(1) Rising steel prices	(2) Growth market for alternative proteins	(3) Growth market for refrigeration and heat generation in light industry
<b>TCFD risk or opportunity category</b>	Political and legal risks Technology Market	Markets Products and services	Markets Products and services
<b>Description of relevant risk and opportunity drivers in a 1.5°C scenario</b>	The procurement costs for steel could increase due to alternative steelmaking methods for "green steel", e.g., with hydrogen-based furnaces or electric arc furnaces.	Socioeconomic impacts such as population and economic growth, as well as increased demand due to political measures, changes in consumer behavior and product innovation, could more than double global demand for protein products by 2035, leading to a market share of alternative protein products derived from plants, microorganisms and animal cells (from precision fermentation) of more than 20% <sup>1</sup> .	The general global rise in demand for heat, technological progress and a regulatory framework to promote heat pumps as a climate-friendly way of generating heat are leading to a significant increase in the share of heat pumps in the supply of heat in process and district heating.
<b>Time points observed</b>	2030 and 2050	2025 and 2035 <sup>1,2</sup>	2030 and 2050
<b>Methodology for deriving potential financial impacts in a 1.5°C scenario and underlying assumptions</b>	Potential financial impacts were derived based on GEA's cost and purchasing structure for steel in combination with the climate scenario, which takes into account the development of CO <sub>2</sub> costs and changes in steel production routes for different regions and time horizons. This assumed constant demand for steel. Strategic measures by GEA that would, for example, increase the share of climate-neutral steel were not taken into account.	Since the IEA does not focus on the agricultural sector, both food market growth and alternative protein market size were taken from studies to allow a sensitivity analysis to be performed. A breakdown of regional sales was used to model regional demand trends. The sensitivity analysis reflected the impact of different proportions of alternative protein products on the market in the results. Strategic measures by GEA that would, for example, increase the market share for New Food were not taken into account.	We used the IEA's net-zero emissions scenario to model overall growth in demand for low- and medium-temperature heat in light industry through 2050, and combined it with GEA's breakdown of current heat pump sales. Strategic measures by GEA that would, for example, increase the market share for heat pumps were not taken into account.
<b>Possible financial impact in a 1.5°C scenario (presentation of pure scenario effects without considering any management decisions by GEA)</b>	Potential additional annual revenue for the GEA Group (not cumulative) compared with base year 2022 2030: EUR 5–10 million 2050: EUR 1–5 million  Despite declining costs for coal in conventional steelmaking, the overall cost of steel production is rising due to the impact of the price of CO <sub>2</sub> and the introduction of new low-carbon technologies, such as carbon capture and storage (CCS), especially by 2030. For GEA, this could be reflected in temporarily higher procurement costs. Due to the market maturity of alternative steelmaking technologies after 2030, this effect declines in the period up to 2050.	Range of potential additional annual revenue for the GEA Group (not cumulative) compared with base year 2022 <sup>3</sup> : 2025: EUR 25–100 million 2035 <sup>1</sup> : EUR 350–750 million  If GEA continues to enjoy the same market share in the growth of the market for alternative protein products, further revenue growth could be achieved by 2025 or 2035.	Range of potential additional annual revenue for the GEA Group (not cumulative) compared with base year 2022 <sup>3</sup> : 2030: EUR 50–75 million 2050: EUR 125–175 million  If GEA continues to enjoy the same market share in the growth of the market for heat pumps in light industry, further revenue growth could be achieved by 2030 or 2050.

	Possible risks in a 1.5°C scenario	Possible opportunities in a 1.5°C scenario	
<b>Evaluation of the probability of occurrence<sup>4</sup></b>	<b>2050: Possible</b>	<b>2035: Probable</b>	<b>2050: Probable</b>
<b>Financial assessment of risks/opportunities<sup>5</sup></b>	<b>2050: Low</b>	<b>2035: Moderate to significant</b>	<b>2050: Low to moderate</b>
<b>Evaluation by GEA of the results in a 1.5°C scenario</b>	GEA continuously monitors the development of steel prices and also takes climate change-related changes into account. The steel market is currently subject to strong volatility for geopolitical and competitive reasons, so the scenario effects must be rated as not material. GEA is looking at sourcing green steel in the context of its “Net-zero-2040” strategy to reduce supply chain emissions and avoid transitory risks.	The New Food business has been actively established and further expanded since 2021. GEA is aiming to steadily expand its market share and increase its revenue above and beyond the scenario results presented above.	GEA is actively expanding the heat pumps business in order to further increase market share and achieve revenue growth above and beyond the scenario results presented above.

1) BCG (2021): Food for Thought: The Protein Transformation

2) Different scenario period because of the underlying source: BCG (2021): Food for Thought: The Protein Transformation

3) Approximated based on market expectations (study-based) and current GEA market share

4) Assessment of probability of occurrence: **Unlikely:** ≥ 1%-25% | **Possible:** ≥ 26%-50% | **Probable:** ≥ 51%-75 % | **Almost certain:** ≥ 76%-100%

5) Financial assessment (EBIT effect): **Low:** < EUR 20 million | **Moderate:** EUR 20-€ EUR 70 million | **Significant:** EUR 70-€ EUR 120 million | **Substantial:** ≥ EUR 120 million

With regard to physical risks and the selection of relevant locations, we considered several criteria, including location-specific revenue and insurance volumes, adequate coverage of business activities and broad geographical coverage, taking into account various types of hazards such as floods, tropical cyclones or forest fires. Based on this approach and the preceding qualitative analysis, which identified the most important risk countries, we identified 13 locations with potentially high physical risks. To derive the financial impact for these locations, we first considered property damage, including losses to buildings, inventory and equipment. Additionally, we included business interruptions due to extreme weather-related events or damage to infrastructure making production impossible.

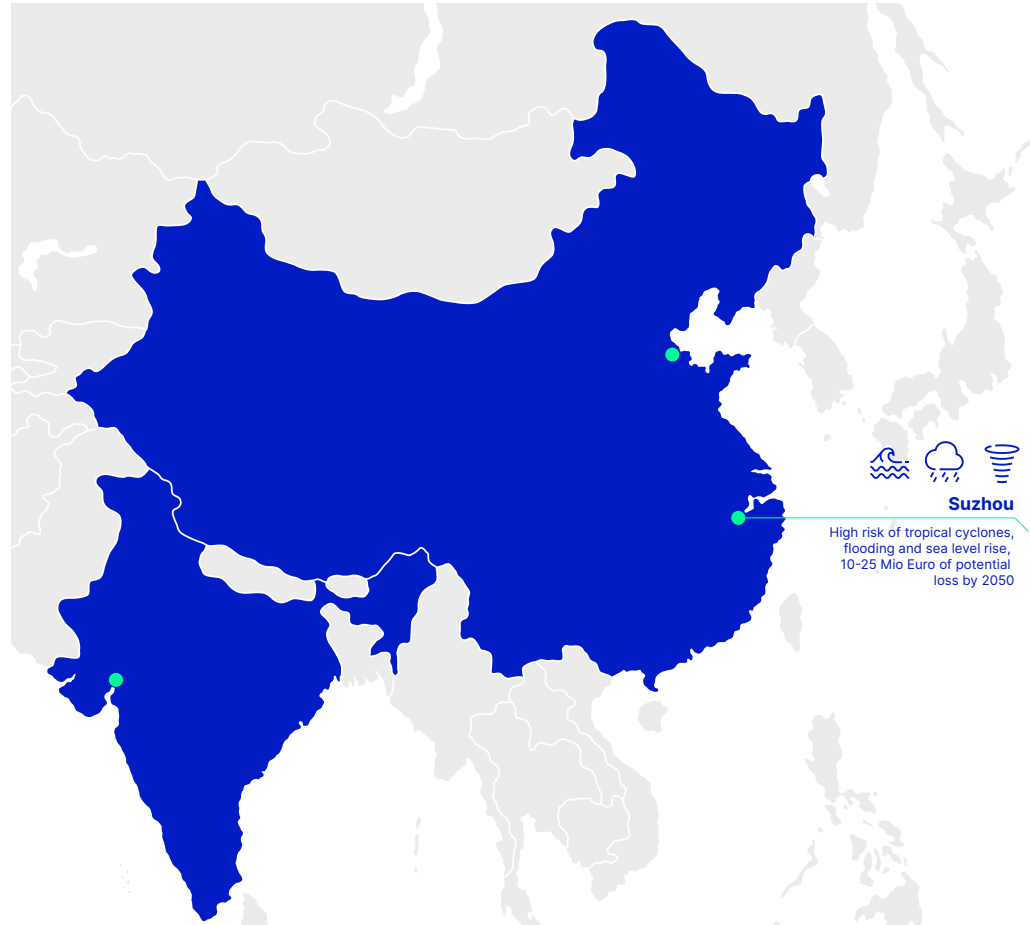
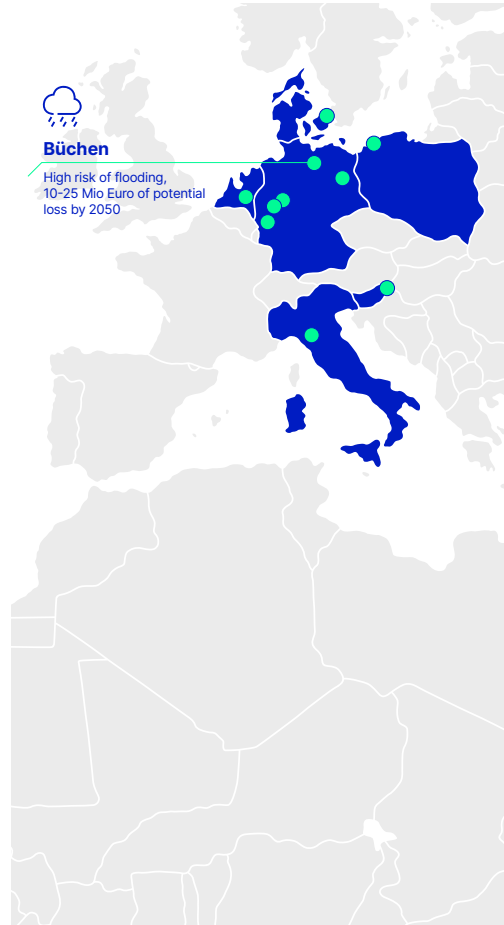
## The three most significant climate-related physical risks in the 2.7°C scenario

Potential risk for GEA identified in a 2.7°C scenario	(1) Flooding	(2) Tropical cyclones	(3) Rising sea levels
<b>TCFD risk category</b>	Acute physical risk	Acute physical risk	Chronic physical risk
<b>Description of relevant risk and opportunity drivers in a 2.7°C scenario</b>	In a 2.7°C scenario, extreme weather events such as flooding increase in frequency and intensity. This can lead to financial losses and business interruptions.	Rising air and ocean temperatures could increase the frequency and severity of tropical cyclones. This could result in further potential damage. Tropical cyclones occur in tropical and subtropical areas between the latitudes of 5° and 30°.	In addition to the increase in average global temperatures and the resulting melting glacial ice sheets, the thermal expansion of the oceans leads to rising sea levels. This risk, in conjunction with potential flooding, may pose a threat especially to coastal areas.
<b>Time point observed</b>	2050	2050	2050
<b>Methodology for deriving potential financial impacts in a 2.7°C scenario and underlying assumptions</b>	Results are based on a changing frequency of a once-in-a-century flood for the specific sites. Potential financial impacts pertain to event-related losses.	Location-specific results were derived from a mean one-minute maximum wind speed of a once-in-a-century event. Potential financial impacts pertain to event-related losses.	The location-specific results are composed of a steady rise in sea levels on the one hand and coastal flooding on the other. The geospecific variable considered represents the mean annual water depth in coastal areas. Potential financial impacts pertain to event-related losses.
<b>Possible financial impact in a 2.7°C scenario (representation of pure scenario effects without considering any management decisions by GEA)</b>	Assuming that this event occurs in 2050, it could result in a potential revenue loss of EUR 50–150 million. The locations potentially most affected include e.g. Suzhou, China, and Büchen, Germany.	Assuming that this event occurs in 2050, it could result in a potential revenue loss of EUR 25–50 million. The locations potentially most affected include e.g. Suzhou, China.	Assuming that this event occurs in 2050, it could result in a potential revenue loss of EUR 10–25 million. The locations potentially most affected include e.g. Suzhou, China.
<b>Evaluation of the probability of occurrence<sup>1</sup></b>	<b>Unlikely</b>	<b>Unlikely</b>	<b>Unlikely</b>
<b>Financial assessment of risks/opportunities<sup>2</sup></b>	<b>Low</b>	<b>Low</b>	<b>Low</b>
<b>Evaluation by GEA of the results in a 2.7°C scenario</b>	GEA assesses the existing protection measures at regular intervals and, if necessary, explores constructing added protection measures such as flood protection dams in order to minimize the impact in such a scenario.	GEA assesses the existing protection measures at regular intervals and, if necessary, explores constructing added protection measures such as flood protection dams and storm-proof buildings in order to minimize the impact in such a scenario.	GEA assesses the existing protection measures at regular intervals and, if necessary, explores constructing added protection measures in cooperation with the local authorities in order to minimize the impact in such a scenario.

1) Assessment of probability of occurrence: **Unlikely:** ≥ 1%–25% | **Possible:** ≥ 26%–50% | **Probable:** ≥ 51%–75 % | **Almost certain:** ≥ 76%–100%

2) Financial assessment (EBIT effect): **Low:** < EUR 20 million | **Moderate:** EUR 20–< EUR 70 million | **Significant:** EUR 70–< EUR 120 million | **Substantial:** ≥ EUR 120 million

## Scenario 2.7°C (RCP4.5), 2050



The material opportunities and risks relating to the GE A Group are presented in the Management Report included in the current Annual Report as an integral part of the Report on Opportunities and Risks. Taking into account the Group's materiality, the analysis of physical risks in relation to the production locations considered did not reveal any material risks requiring mandatory presentation in the Annual Report because of the low financial impact associated with them.

### The resilience of GE A's strategy

#### Maximizing opportunities in the context of decarbonization while mitigating risks

As part of the scenario analysis and the transformation associated with a 1.5°C world, no material financial risks could be derived for the years 2030 and 2050. GE A's strategy of net zero emissions by 2040 is a driver for greater energy efficiency, a shift to renewable energy and low-carbon fuels, carbon-neutral purchasing and a "green" product portfolio. We see this as a key contribution to minimizing our transition risks while positioning ourselves as a major provider of solutions for a carbon-neutral economy. The net zero strategy also helps us counter potential reputational risks or increased financing costs associated with our climate impacts. With our product portfolio, and in particular our offerings in the fields of heat pumps and alternative proteins, we see fresh market opportunities that will help us grow sustainably in the coming decades.



### Adaptation measures at location level

GEA has forwarded the results of the analysis to the representatives of the locations affected by physical risks in the 2.7°C scenario. Based on this, the current risk minimization measures were evaluated and next steps were defined on how to even better reduce the risks. This could include, for example, the installation of additional protective walls or a more closely knit exchange of information with the relevant authorities on protection and risk minimization plans already in place.

## Opportunity and risk management

### Analyze current external requirements

The growing complexity and dynamic pace of economic and technological development as well as increasingly rapid globalization, combined with tougher competition worldwide, are posing more and more new challenges for GEA as an international company in order to successfully survive in the market and sustainably build on the company's success. This process is accompanied by heightened regulatory requirements at both national and international level from legislators and bodies specialized in corporate governance. The focus is in particular on the quality of corporate governance and supervision as well as regulation of the financial markets.

In this context, the TCFD's recommendations for meaningful reporting on financial impacts of climate change, as well as their reflection in new reporting requirements such as the Corporate Sustainability Reporting Directive (CSRD), are being closely monitored by an interdisciplinary working group. The working group was established by GEA to further improve the identification, assessment, definition and implementation of

measures to reduce climate risks and increase climate opportunities. Coordinated by GEA's Chief Sustainability Officer and the Risk & Internal Control Management & Data Governance department, the working group also involved Purchasing, Production and Sales from the operating and central business areas.

For GEA's business, which is predominantly characterized by multi-year projects and systems solutions, and the processes aligned with them, we use an integrated approach to identifying, assessing, managing, communicating and reducing order risks as well as other operational and strategic opportunities and risks within the group.

The aim of our group-wide opportunity and risk management system is to identify the key opportunities and risks in these core operating business areas at an early stage, adequately assess the financial impact, identify the measures to leverage opportunities and minimize risks as well as inform the relevant decision makers accordingly.

The organization, principles, framework conditions and responsibilities of our opportunity and risk management system are set out in a policy and are based on the international COSO II model.

Management of TCFD-related risks and opportunities: continuous cycle



The risk and opportunity management cycle is a continuous process

Feedback loop for managing opportunities and risks in the group  
 Our opportunity and risk management system is established as a continuous group-wide, active process that identifies, assesses, manages and monitors opportunities and risks. Derived from the concept of the opportunity and risk management cycle, the process is an integral component of GEA's value-based corporate governance.

All operating and central business areas as well as GEA subsidiaries with majority shareholdings are required to review the status of the opportunity and risk situation every quarter (changes, additions, removal of opportunities and risks).

The opportunities and risks identified are continuously monitored by "opportunity and risk owners". In addition, measures are defined and implemented to leverage opportunities and manage risks.

The opportunity and risk owner will be supported by the opportunity and risk coordinator. They ensure that the tasks arising from the opportunity and risk management processes are performed and that the management bodies responsible are provided with the relevant opportunity and risk information in a timely manner.

Risk Assessment and Advisory Committees (RAAC) were introduced to provide targeted information to the management bodies at the level of the various group hierarchies. On the one hand, these interdisciplinary bodies act as a multiplier to establish a sustainable opportunity and risk culture in the operating and central business areas. On the other, they ensure that complete and regular, up-to-date reporting is harmonized and optimized.

To identify opportunities and risks, we have defined reporting thresholds at different group levels (company/business unit/division/lead company), above which opportunities and risks must be included in regular reporting. As part of this process, quantifiable and qualitative opportunities and risks are systematically recorded and monitored for the current fiscal year and the medium-term period. In addition, ad hoc reporting is included when new risks arise or significant changes occur in previously identified risks. The trigger for an ad hoc report is when a materiality threshold is exceeded.







































Enhancement of the opportunity and risk management system

At the same time, the TCFD categories for identifying opportunities and risks were integrated into the existing GEA categorization model. GEA has developed five main categories for aggregating the opportunities and risks in the GEA Group. The TCFD categories were assigned to the main categories on the basis of their underlying nature and their level of association in the GEA categorization model. Potential financial impacts are marked with symbols (see graphic).

The opportunity and risk management system is continuously adapted to new regulatory requirements. In this context, our TCFD working group expanded the process for identifying and assessing potential long-term climate risks and opportunities in the reporting period by implementing qualitative and quantitative scenario analyses.

More information on opportunity and risk management can be found in the “Opportunity and risk management” section of GEAs 2022 Annual Report.

Our opportunity and risk management is flexible enough to incorporate the TCFD categories in our model. The decarbonization of the global economy is thus associated with the following opportunities and transition risks, among others:

Legal & Compliance	Financial	Operating	Strategic	Project
Antitrust law	Exchange rates	Markets    	Legislative	Products/technology   
Corporate liability	Interest rates	Products/technology    	Trends/megatrends  	Preliminary costing
Corruption	Funding   	Procurement 	Portfolio & M&A  	Execution
Data protection	Ratings 	Supply chain 	Changes in regulations 	Procurement  
Export controls	Taxes 	Research & development   	Process & structure	Supply chain  
Intellectual property	Foreign trade & customs duties 	QHSE  	Capital markets  	
Litigation and conflict resolution	Solvency/ payment default	HR 	Reputation 	
Mining & legacy impacts	Accuracy of financial information	Information technology		
Product/ project liability 		Information security		

GEA's extended categorization model including TCFD opportunity and risk types:

**Opportunities:**



**Transitional risks:**



**Physical risks at the location:**





## GEA's carbon balance

In 2022, GEA was responsible for the following greenhouse gas emissions:

**Scope 1:**  
**32,292 tons of CO<sub>2</sub>equivalent**

**Scope 2:**  
**726 tons of CO<sub>2</sub>equivalent**  
**(market-based method)**

**Scope 3:**  
**35,190,372 tons of CO<sub>2</sub>equivalent**

A more detailed breakdown of greenhouse gas emissions and additional climate-relevant data can be found starting on page 147.

## Metrics and targets

[Climate strategy, transformation plan and status of target achievement](#)  
We have established interim targets in addition to the long-term goal of net zero emissions by 2040 along the entire value chain. Compared with the baseline year 2019, we aim to reduce our greenhouse gas emissions from our own operations (Scopes 1 and 2) by 60 percent and from upstream and downstream activities such as purchasing and product use by customers (Scope 3) by 18 percent by 2030. We defined our climate targets based on the ambitious goal of limiting global warming to a maximum of 1.5°C and had them successfully validated by the Science Based Targets initiative. You can find more information about our climate strategy in the “Climate strategy” chapter on page 29.

Our transformation plan focuses on energy efficiency, switching energy sources and the use of renewable energies in our own operations. Key action areas for successfully achieving our Scope 3 emissions targets include factoring climate impacts into supplier management and continuously improving the energy efficiency of our products. You can find more information about our transformation plan in the “Climate strategy” chapter on page 32.

The status of target achievement with regard to greenhouse gas emissions from the company's own operations (Scope 1 and 2) can be found in the “Responsible Operations” chapter starting on page 68 and in the Appendix starting on page 147. The status of target achievement with regard to greenhouse gas emissions from upstream and downstream operations (Scope 3) can be found in the Appendix starting on page 147.

[Linking the remuneration of the Group Executive Board to GEA's climate targets](#)

In order to exert a controlling and guiding effect on the achievement of sustainability targets, in particular climate targets, GEA links the remuneration of the Group Executive Board to the degree of target achievement. The strategic goals that determine the LTI 2022 are, first, the reduction of greenhouse gas emissions and, second, organic revenue growth. The strategic goals thus support the target set by GEA itself as part of its climate strategy of reducing its own greenhouse gas emissions along the entire value chain to net zero by 2040. The interim targets to reduce Scope 1 and 2 greenhouse gas emissions by 60 percent each by 2030 compared with 2019 are the basis for assessing target achievement.

You can find more information about the rules governing the remuneration of the Executive Board in GEA's 2022 Annual Report.

# Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) are political objectives of the United Nations. They serve to ensure economically, ecologically and socially sustainable development worldwide and entered into force on January 1, 2016 for a term of 15 years (up to 2030). The 17 goals of the 2030 Agenda are directed at states, civil society, business, science and every individual. For more information on the SDGs, visit <https://sdgs.un.org/goals>.

## No Poverty



End poverty in all forms, everywhere.

81–83, 85–87, 90, 92

## Zero Hunger



End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

40–43, 53

## Good Health and Well-Being



Ensure healthy living and promote well-being for all, at all ages.

51, 53, 54, 62–64, 65 et seq., 123

## High-Quality Education



Ensure inclusive, equitable and high-quality education and promote lifelong learning opportunities for all.

97, 101–104, 115 et seq.

## Gender Equality

Page



Achieve gender equality and empower all women and girls.

103, 104, 110 et seq.

## Clean Water and Sanitation



Ensure availability and sustainable management of water and sanitation for all.

57, 62–64, 71

## Affordable and Clean Energy



Ensure access to affordable, reliable, sustainable and modern energy for all.

70, 153

## Decent Work and Economic Growth



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

19, 67–73, 77, 81 et seq., 120, 122, 123

## Industry, Innovation and Infrastructure

Page



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

21, 22, 44–47, 107, 118

## Reduced Inequalities



Reduce inequality within and among countries.

81, 83, 88, 89, 92

## Responsible Consumption and Production



Ensure sustainable consumption and production patterns.

53, 55, 56, 59, 60

## Climate Action



Take urgent action to combat climate change and its impacts.

30 et seq., 56, 60, 65 et seq., 152 et seq.

## Life Below Water

Page



Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

32 et seq., 65 et seq.,  
152 et seq.

## Life on Land



Protect, restore and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, halt and reverse land degradation and halt biodiversity loss.

58, 70–73, 152 et seq.

## Peace, Justice and Strong Institutions



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, build effective, accountable and inclusive institutions at all levels.

20, 23, 24, 81 et  
seq., 125 et seq.

## Partnerships for the Goals



Strengthen the means of implementation and revitalize the global partnership for sustainable development.

20, 35, 62–64,  
81–89, 95–99

# Linking SASB and GRI Standards

GEA sustainability reporting is carried out in accordance with the standards of the Global Reporting Initiative (GRI). Some of GEA's key stakeholders also use SASB standards. The Sustainability Accounting Standards Board (SASB) is a non-profit organization that was founded to develop standards for sustainability reporting. GRI and SASB Standards have different objectives and are based on different assumptions with regard to materiality. The two organizations have published a joint guide to share the experience of using both sets of standards. The two standards complement rather than replace each other. GRI supports broad and comprehensive disclosure of the impacts of organizations and SASB focuses on a subset of the financially material issues. The combined application of both standards can provide a holistic picture of corporate performance by bringing sustainability and financial information closer together. According to the SASB Standards, GEA is in the "Resource Transformation Sector"; the applicable industry standard is "Industrial Machinery & Goods". For more information on the SASB Standards, please visit <https://www.sasb.org/>



## Linking SASB and GRI Standards

Topic	SASB Accounting Metric	Unit of Measure	Code	Note	GRI Standard(s)	Page
<b>Energy Management</b>	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Gigajoules (GJ), percentage (%)	RT-IG-130a.1	GEA discloses total energy consumption, thereof electricity, and thereof electricity from renewable sources. Furthermore, we disclose information on direct and indirect energy-related and other indirect greenhouse gas emissions (Scope 1-3)	GRI 302-1-5	70, 73, 149
<b>Employee Health &amp; Safety</b>	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)	Rate	RT-IG-320a.1	In addition to the number of occupational accidents resulting in lost time or fatalities, we report on the accident frequency and severity rates as well as the rate of other incidents.	GRI 403-1-9	74-78, 123, 146
<b>Fuel Economy and Emissions in Use Phase</b>	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Gallons per 1,000 ton-miles	RT-IG-410a.1	The majority of GEA's machines and facilities are powered by electricity. Due to the wide variety of components and processes and notably the need to gather comprehensive operating data outside the company's own sphere of influence, it is not possible to obtain concrete global evidence of the entire product and service portfolio's climate footprint during its use phase. For this reason, we are working on extensions to climate reporting and carrying out internal projects to quantify greenhouse gas emissions along the entire value chain (Scope 1 and 2 as well as Scope 3, upstream/downstream). Additionally, in accordance with established standards such as the Avoided Emissions Framework, we rely on the concept of "Avoided Emissions". Avoided emissions result from the effect of a product on greenhouse gas emissions compared with the baseline situation without that product.	GRI 302-1-2, GRI 305-7	69, 70, 147, 149
	Sales-weighted fuel efficiency for non-road equipment	Gallons per hour	RT-IG-410a.2			
	Sales-weighted fuel efficiency for stationary generators	Watts per gallon	RT-IG-410a.3			
	Sales-weighted emissions of: (1) nitrogen oxides (NO <sub>x</sub> ) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines	Grams per kilowatt-hour	RT-IG-410a.4			
<b>Materials Sourcing</b>	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	RT-IG-440a.1	GEA discloses local procurement as a percentage of total volume and detailed information about conflict minerals.	GRI 308, GRI 414	81-92
<b>Remanufacturing Design and Services</b>	Revenue from remanufactured products and remanufacturing services	Reporting currency	RT-IG-440b.1	In certain cases, we already offer to take back our products to refurbish them for additional years of operation. From 2026, the offer of reuse will also apply to selected service parts.	For general information on the subject, see Sustainable Solutions chapter	44-47

# GRI content index

## Statement of use

GEA has reported the information cited in this GRI content index for the period 01/01/2022 – 12/31/2022 with reference to the GRI Standards.

**GRI 1 used** GRI 1: Foundation 2021

GRI STANDARD	DISCLOSURE	LOCATION	
<b>GRI 2: General Disclosures 2021</b>	2-1	Organizational details	annual report
	2-2	Entities included in the organization's sustainability reporting	annual report
	2-3	Reporting period, frequency and contact point	142, 169, 176
	2-4	Restatements of information	No corrections or restatements were made in the reporting period. Any corrections or restatements are reported at <a href="http://www.gea.com">www.gea.com</a> .
	2-5	External assurance	The Sustainability Report has not been externally audited.
	2-6	Activities, value chain and other business relationships	6-12, 45-46, 81-94, annual report
	2-7	Employees	105-123, 143-146

GRI STANDARD	DISCLOSURE	LOCATION	
	2-8	Workers who are not employees	144, annual report
	2-9	Governance structure and composition	144, annual report
	2-10	Nomination and selection of the highest governance body	annual report
	2-11	Chair of the highest governance body	annual report
	2-12	Role of the highest governance body in overseeing the management of impacts	127, annual report
	2-13	Delegation of responsibility for managing impacts	127, 128, 130, 132, 134, 153, annual report
	2-14	Role of the highest governance body in sustainability reporting	127
	2-15	Conflicts of interest	annual report

GRI STANDARD	DISCLOSURE	LOCATION	
	2-16	Communication of critical concerns	127, 128, 130, 132, 134
	2-17	Collective knowledge of the highest governance body	127
	2-18	Evaluation of the performance of the highest governance body	annual report
	2-19	Remuneration policies	163, annual report
	2-20	Process to determine remuneration	annual report
	2-21	Annual total compensation ratio	annual report
	2-22	Statement on sustainable development strategy	18-24, 32-38, 131
	2-23	Policy commitments	24, 82-84
	2-24	Embedding policy commitments	18-24, 81-83, 85-87, 106, 127, annual report
	2-25	Processes to remediate negative impacts	38, 45-48, 67, 69-73, 75-77, 82, 84-86, 92, 94, 109, 120, 123, 129-135
	2-26	Mechanisms for seeking advice and raising concerns	129, 131
	2-27	Compliance with laws and regulations	126, 131, 134
	2-28	Membership associations	15, 20, 35
	2-29	Approach to stakeholder engagement	25, 35, 67, 79, 80, 90, 126
	2-30	Collective bargaining agreements	114, 121
<b>GRI 3: Material Topics 2021</b>	3-1	Process to determine material topics	25
	3-2	List of material topics	142
	3-3	Management of material topics	25

GRI STANDARD	DISCLOSURE	LOCATION	
<b>GRI 201: Economic Performance 2016</b>	201-1	Direct economic value generated and distributed	annual report
	201-2	Financial implications and other risks and opportunities due to climate change	157, 158
	201-3	Defined benefit plan obligations and other retirement plans	annual report
	201-4	Financial assistance received from government	Information about financial support is not published.
<b>GRI 202: Market Presence 2016</b>	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	121
	202-2	Proportion of senior management hired from the local community	Data is not collected.
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-1	Infrastructure investments and services supported	annual report
	203-2	Significant indirect economic impacts	This information is not being published.
<b>GRI 204: Procurement Practices 2016</b>	204-1	Proportion of spending on local suppliers	151
<b>GRI 205: Anti-corruption 2016</b>	205-1	Operations assessed for risks related to corruption	131
	205-2	Communication and training about anti-corruption policies and procedures	130
	205-3	Confirmed incidents of corruption and actions taken	131
<b>GRI 206: Anti-competitive Behavior 2016</b>	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	131

GRI STANDARD	DISCLOSURE	LOCATION
<b>GRI 207: Tax 2019</b>	207-1 Approach to tax	The topic of taxes is a key element of responsible corporate management, with which organizations make a contribution to the economies of the countries in which they operate. We pursue a clear and transparent tax strategy, whereby profits are taxed in the countries in which they are generated (see also the on corporate governance in the Annual Report 2022). The most important stakeholders - in particular customers and investors - do not consider the issue of taxes at GEA as material. According to the German Commercial Code (HGB), this immateriality is due to the fact that the issue of taxes has no impact on non-financial matters and/or there is no business relevance.
	207-2 Tax governance, control, and risk management	annual report
	207-3 Stakeholder engagement and management of concerns related to tax	annual report
	207-4 Country-by-country reporting	Data is not collected.
<b>GRI 301: Materials 2016</b>	301-1 Materials used by weight or volume	Data is not collected.
	301-2 Recycled input materials used	A breakdown of the total weight into renewable and non-renewable materials is not yet possible for the Group as a whole. In the future, we intend to continuously increase the use of renewable materials and integrate their use into our calculation methods.
	301-3 Reclaimed products and their packaging materials	45

GRI STANDARD	DISCLOSURE	LOCATION
<b>GRI 302: Energy 2016</b>	302-1 Energy consumption within the organization	70, 149
	302-2 Energy consumption outside of the organization	70, 149
	302-3 Energy intensity	149
	302-4 Reduction of energy consumption	70, 73
	302-5 Reductions in energy requirements of products and services	45, 48, 70
<b>GRI 303: Water and Effluents 2018</b>	303-1 Interactions with water as a shared resource	62-64, 66, 71
	303-2 Management of water discharge-related impacts	71
	303-3 Water withdrawal	71, 149
	303-4 Water discharge	71
	303-5 Water consumption	71, 149
<b>GRI 304: Biodiversity 2016</b>	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	GEA does not operate any facilities that are located in or next to protected areas and areas with high biodiversity value outside protected areas.
	304-2 Significant impacts of activities, products and services on biodiversity	Data is not collected.
	304-3 Habitats protected or restored	GEA's business activities do not affect protected or renaturalized areas.
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	GEA's business activities do not affect any spaces of endangered species.

GRI STANDARD	DISCLOSURE	LOCATION
<b>GRI 305: Emissions 2016</b>	305-1 Direct (Scope 1) GHG emissions	70, 148
	305-2 Energy indirect (Scope 2) GHG emissions	70, 148
	305-3 Other indirect (Scope 3) GHG emissions	68, 147
	305-4 GHG emissions intensity	Aggregated data are not available.
	305-5 Reduction of GHG emissions	30, 31, 70, 73, 91
	305-6 Emissions of ozone-depleting substances (ODS)	69
	305-7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	69
<b>GRI 306: Waste 2020</b>	306-1 Waste generation and significant waste-related impacts	72
	306-2 Management of significant waste-related impacts	72
	306-3 Waste generated	149, 150
	306-4 Waste diverted from disposal	Data is not collected.
	306-5 Waste directed to disposal	72, 149
<b>GRI 308: Supplier Environmental Assessment 2016</b>	308-1 New suppliers that were screened using environmental criteria	89
	308-2 Negative environmental impacts in the supply chain and actions taken	89, 91
<b>GRI 401: Employment 2016</b>	401-1 New employee hires and employee turnover	144, 145
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Company benefits are offered to all employees, whether full-time, part-time or temporary.
	401-3 Parental leave	120
<b>GRI 402: Labor/Management Relations 2016</b>	402-1 Minimum notice periods regarding operational changes	The legally prescribed deadlines are met.

GRI STANDARD	DISCLOSURE	LOCATION
<b>GRI 403: Occupational Health and Safety 2018</b>	403-1 Occupational health and safety management system	67, 75, 76, 123
	403-2 Hazard identification, risk assessment, and incident investigation	75, 77
	403-3 Occupational health services	75
	403-4 Worker participation, consultation, and communication on occupational health and safety	77, 123
	403-5 Worker training on occupational health and safety	76
	403-6 Promotion of worker health	123
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	47, 76, 77, 123
	403-8 Workers covered by an occupational health and safety management system	The occupational health and safety management system covers all GEA workplaces.
	403-9 Work-related injuries	77, 78, 146
	403-10 Work-related ill health	Data is not collected.
<b>GRI 404: Training and Education 2016</b>	404-1 Average hours of training per year per employee	146
	404-2 Programs for upgrading employee skills and transition assistance programs	101-104, 115-117
	404-3 Percentage of employees receiving regular performance and career development reviews	116

GRI STANDARD		DISCLOSURE	LOCATION
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1	Diversity of governance bodies and employees	110-113
	405-2	Ratio of basic salary and remuneration of women to men	121
<b>GRI 406: Non-discrimination 2016</b>	406-1	Incidents of discrimination and corrective actions taken	Data is not collected.
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	will be analyzed in the future
<b>GRI 408: Child Labor 2016</b>	408-1	Operations and suppliers at significant risk for incidents of child labor	85
<b>GRI 409: Forced or Compulsory Labor 2016</b>	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	85
<b>GRI 410: Security Practices 2016</b>	410-1	Security personnel trained in human rights policies or procedures	Data is not collected.
<b>GRI 411: Rights of Indigenous Peoples 2016</b>	411-1	Incidents of violations involving rights of indigenous peoples	No incidents were reported.
<b>GRI 413: Local Communities 2016</b>	413-1	Operations with local community engagement, impact assessments, and development programs	Data is not collected.
	413-2	Operations with significant actual and potential negative impacts on local communities	GEA did not undertake any business activities that had a negative impact on local communities during the reporting period. We have the claim to work in dialog with local communities to reach a mutually beneficial outcome for all.
<b>GRI 414: Supplier Social Assessment 2016</b>	414-1	New suppliers that were screened using social criteria	81-86
	414-2	Negative social impacts in the supply chain and actions taken	81-86
<b>GRI 415: Public Policy 2016</b>	415-1	Political contributions	151

GRI STANDARD		DISCLOSURE	LOCATION
<b>GRI 416: Customer Health and Safety 2016</b>	416-1	Assessment of the health and safety impacts of product and service categories	47
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	During the reporting period, no violations with health consequences occurred.
<b>GRI 417: Marketing and Labeling 2016</b>	417-1	Requirements for product and service information and labeling	47
	417-2	Incidents of non-compliance concerning product and service information and labeling	There were no such violations during the reporting period.
	417-3	Incidents of non-compliance concerning marketing communications	There were no such violations during the reporting period.
<b>GRI 418: Customer Privacy 2016</b>	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	134

# Imprint

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**Note on forward-looking statements:**

This report contains forward-looking statements about GEA Group Aktiengesellschaft, its subsidiaries and affiliates as well as the economic and political conditions that may affect GEA's business performance. All these statements are based on assumptions made by the Executive Board using the information available to it. Should these assumptions prove to be wholly or partly incorrect or should further risks arise, actual business performance may differ from that expected. No assurance can therefore be accepted for the accuracy of the statements.

**Rounding:**

Small differences may arise due to the commercial rounding of figures and percentages.

**Note on the translation:**

This Sustainability Report is a translation of the German report. The German version applies in case of any discrepancies between the two.

